



Lufthansa

Key data on sustainability
within the Lufthansa Group
Issue 2010

Balance

Company/Social responsibility/Environment/Corporate citizenship



Passenger Airline Group

Logistics

MRO

IT Services

Catering



Our new flagship: The Lufthansa Airbus A380

With the introduction of the Airbus A380, a new era begins in the history of Lufthansa. Featuring state-of-the-art technology, improved travel comfort in all classes, an enormously increased environmental efficiency and a highly positive effect on employment, this aircraft achieves top marks in all dimensions of sustainability.

With an entirely new First Class, a high-quality Business Class and also an improved Economy Class, passengers enjoy flying in the “quietest aircraft cabin in the sky.” Each Airbus A380 secures about 400 jobs at Lufthansa.

→ www.lufthansa.com/A380

Order your copy of our Annual Report 2009 at:
→ www.lufthansa.com/investor-relations

You will find further information on sustainability
within the Lufthansa Group at:
→ www.lufthansa.com/responsibility

- 1 Source: Lufthansa Annual Report 2009.
- 2 Value for the previous year corrected due to valuation changes from IFRIC 13.
- 3 For the reporting year 2009 the following companies are included: Lufthansa Passenger Airlines (Lufthansa Passenger Airline, Lufthansa Italia and Lufthansa Regional: Lufthansa CityLine, Air Dolomiti, Eurowings, Contact Air, Augsburg Airways), Lufthansa Cargo, SWISS, Austrian Airlines (from September 2009) and bmi (from July 2009), excluding the share of third parties as Lufthansa can influence neither performance nor the equipment used (see also table "Share of third parties" on page 48).
- 4 Types of flights taken into account: all scheduled and charter flights.
- 5 See also table "Fuel consumption" on page 48.
- 6 Value of the previous year corrected.
- 7 Companies referred to as in 3, but including the services of third parties, as these contribute to the Group's results. Types of flights as in 4, but including ferry flights, as these represent costs.
- 8 *Balance*: aircraft operated by the Group; Annual Report: aircraft in the Group's possession. See also the overview "Group fleet" on page 25.
- 9 *Balance*: segments (operational perspective); Annual Report: distance (customer perspective); one distance can include several segments, e.g. in the event of stops en route.
- 10 *Balance*: on the basis of all passengers aboard; Annual Report: on the basis of all revenue passengers.

At a glance

Business performance data¹		2009	2008 ²	Change
Revenue	million €	22,283	24,842	-10.3%
of which traffic revenue	million €	17,604	19,970	-11.8%
Operating result	million €	130	1,280	-89.8%
Profit/loss from operating activities	million €	271	1,309	-79.3%
Net profit/loss for the period	million €	-112	542	
Total assets	million €	26,392	22,408	+17.8%
Cash flow from operating activities	million €	1,991	2,473	-19.5%
Capital expenditure	million €	2,405	2,154	+11.7%
Equity ratio	percent	23.5	29.4	-5.9PP

Personnel data		2009	2008	Change
Number of employees (on 31.12., respectively)		117,521	107,800	+9.0%
of these, in Germany		64,741	65,695	-1.5%
of these, outside Germany		52,780	42,105	+25.4%
Staff costs ¹	million €	5,996	5,692	+5.3%
Revenue/employee ¹	€	198,384	229,757	-13.7%
Staff costs/revenue ¹	percent	26.9	22.9	+4.0PP
Average age	years	40.3	40.4	-0.3%
Part-time ratio, absolute	percent	26.9	26.5	+0.4PP
Part-time ratio, men	percent	14.0	14.0	±0.0PP
Part-time ratio, women	percent	42.7	42.7	±0.0PP
Share of women in management	percent	14.7	14.6	+0.1PP

Environmental data^{3,4}		2009	2008	Change
Resource consumption				
Fuel consumption ⁵	tonnes	7,680,708	7,673,141	+0.1%
Fuel consumption, specific, passenger transportation	l/100 pkm	4.30	4.34	-0.9%
Fuel consumption, specific, freight transport	g/tkm	243	236	+3.0%
Emissions				
Carbon dioxide emissions	tonnes	24,194,229	24,170,394	+0.1%
Carbon dioxide emissions, specific, passenger transportation	kg/100 pkm	10.84	10.93	-0.9%
Nitrogen oxide emissions	tonnes	112,645	112,801 ⁶	-0.1%
Nitrogen oxide emissions, specific, passenger transportation	g/100 pkm	50.0	50.6	-1.1%
Carbon monoxide emissions	tonnes	17,376	17,091 ⁶	+1.7%
Carbon monoxide emissions, specific, passenger transportation	g/100 pkm	8.5	8.5	+0.3%
Unburned hydrocarbons	tonnes	1,982	2,068 ⁶	-4.2%
Unburned hydrocarbons, specific, passenger transportation	g/100 pkm	0.9	1.0	-4.7%

Transport performance data		Balance ^{3,4}	Change	Annual Report ⁷	Change
Size of active fleet (on December 31, 2009) ⁹		688	+167	722	+188
Number of flights ⁹		879,664	+7.4%	893,235	+7.5% ⁶
Passengers carried ¹⁰		76,113,819	+8.3% ⁶	76,543,044	+8.5%
Freight and mail carried	tonnes	1,712,355	-10.7%	1,712,355	-10.6% ⁶
Seat kilometers offered, SKO	million pkm	205,439	+5.9%	206,269	+5.5%
Freight tonne kilometers offered, FTKO	million tkm	13,685	-8.6%	14,426	-4.7%
Tonne kilometers offered, TKO	million tkm	34,057	-0.7%	35,264	+0.9%
Passenger kilometers transported, PKT ⁹	million pkm	166,371	+4.8%	160,647	+4.2%
Freight tonne kilometers transported (incl. third-party performance), FTKT	million tkm	8,050	-12.0%	8,704	-8.5% ⁶
Tonne kilometers transported, TKT ⁸	million tkm	24,707	-1.4%	24,786	-0.7% ⁶



Dear Readers,

The effects of the worldwide crisis in the financial markets have not spared our industry, air transport, either. The volumes and revenues in passenger traffic and freight transportation have suffered severe setbacks worldwide, and also at Lufthansa. The other business segments within the Group have also felt the effects of the crisis, albeit at different levels of intensity and with a certain time lag. Concerted measures such as cost-reduction projects, capacity adaptations, intelligent use of synergy potentials within the Lufthansa Group, the successfully concluded initiative Upgrade to Industry Leadership and our solid financial provisions have all helped to maintain our company's much needed breathing space even in the crisis year 2009. Against the industry trend, Lufthansa was again able to achieve a positive operating result. This is vital, as only healthy companies have the strength to make sustained investments.

We were also able to pursue our fleet modernization program – and thus our sustainability goals – in a consistent fashion. In 2009 alone, 50 new highly efficient and environmentally compatible aircraft were integrated into our fleet and older models replaced. About 1.9 billion euros were invested in new aircraft within the business segment Passenger Airline Group. We are delighted that this year the Lufthansa A380, our 3-liter intercontinental flagship, will be ready for takeoff. With the new corporate project Fuel Efficiency Leader-

ship, we are systematically assessing all options to reduce kerosene consumption. With the project Aviation Biofuel, we are investigating new potentials to cut emissions further in the future. These efforts ease the burden both on our costs and on the environment. The specific consumption of the Lufthansa Group fleet was successfully lowered slightly last year, to 4.30 liters of kerosene per passenger and 100 kilometers.

In the social areas, our room to maneuver is determined not only by current laws but also by many self-imposed obligations that exceed the legal requirements. This fact is documented by our membership in the UN Global Compact and our adherence to the norms of the International Labor Organization (ILO). The sense of responsibility of all those working in the Group as well as the qualification and appreciation of our employees are of central importance in achieving the ambitious goals we have set for ourselves. This is why our far-reaching training and continuing education offers were maintained even in the crisis year 2009.

Air transport is and remains a growth industry. We will have to handle crises again and again in the future. The decisive factor here is to maintain a balance so that improvements to achieve effects in the long term are not thwarted by measures to limit a crisis in the short term. This is why we pay so much attention to being strategically and financially well aligned and to having not only the right know-how but also a highly motivated, highly qualified team. Doing so allows us to tackle the challenges that present themselves, whatever they may be. Naturally, this implies a high level of awareness in the area of social responsibility – concerning our customers, shareholders, employees and the environment.

You will find more on these and other topics in this current report. Thank you for your interest – and stay with us in 2010 as well!

A handwritten signature in black ink, appearing to read 'W. Mayrhuber'.

Wolfgang Mayrhuber

Chairman of the Executive Board and CEO
Deutsche Lufthansa AG

Contents	2	At a glance
	5	About this report
		The Lufthansa Group
	8	The Lufthansa Group's five business segments
	12	Corporate governance
	14	Prizes and awards
	15	Sustainability within the Lufthansa Group
	19	Stakeholder dialogue
	21	Profitability
	23	Securing competitiveness
	24	The Lufthansa Group fleet
	30	Panorama
		Social responsibility
	32	Diversity
	35	HR management
	36	Employment policy based on partnership
	40	Training and continuing education
	41	Ideas management
	42	Employee safety and health protection
	44	Facts and outlook
		Environment
	46	Kerosene and emissions
	57	Environmental management
	60	Energy and resource management
	63	Noise emissions
	66	Research at Lufthansa
		Corporate citizenship
	72	Culture
	74	Social projects
	77	Education
	79	Sports
	79	Environmental Sponsorship Program
	85	Glossary
	88	Editorial information
	89	Contact partners

About this report

The present Sustainability Report *Balance* informs stakeholders and the interested public about the activities, advances and goals of the Lufthansa Group in the areas of business, social responsibility, environment and corporate citizenship. The data presented in this report refer to the financial year 2009.

Scope of consolidation

Reporting for the business year 2009 with regard to transport performance, fuel consumption and emissions from flight operations is based on the following scope of consolidation¹:

- Companies: Lufthansa Passenger Airlines (Lufthansa Passenger Airline, Lufthansa Italia, and Lufthansa Regional with Lufthansa CityLine, Air Dolomiti, Eurowings, Contact Air, Augsburg Airways), Lufthansa Cargo, SWISS, bmi (from July 2009) and Austrian Airlines (from September 2009). Excepted are third-party services, as Lufthansa has no influence either on their performance or on the aircraft operated.
- Types of service: all scheduled and charter flights.

Due to changes in the portfolio, the figures in this report are only to a limited extent comparable with those reported for the previous year (reporting year 2008).

There are also differences in approach compared to the Annual Report 2009 when calculating passenger numbers and the related indicators PKT, PTKT and TKT: 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 employees traveling on business and for private purposes. The reason: Every passenger that boards an aircraft affects the environment.

¹ Unless a different scope of consolidation is named expressly.

Methodology of calculations

Kerosene in absolute terms

The calculation of kerosene consumption is based on actual flight operations (i.e. using actual load factors and flight routings), 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 in 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_x), carbon monoxide (CO) and unburned hydrocarbons (UHCs) in particular. Carbon dioxide (CO₂) emissions do not require special calculation methods, as they are generated in a fixed relationship to the quantity of kerosene burned. The combustion of 1 tonne of kerosene generates 3.15 tonnes of CO₂.

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 and the kerosene actually consumed. The distances used in the calculations are great-circle distances.

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 Environmental Database.

Accuracy

The figures shown in tables and illustrations 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 April 24, 2009; the English edition followed shortly thereafter.

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 provides additional detailed environmental data from the individual business segments as well as a Group-wide matrix of environmental goals and measures.

→ www.lufthansa.com/responsibility

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 cannot 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," "estimate," "count on," or "endeavor." 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 cannot, 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 does it give any guarantee for the actuality, accuracy and completeness of this data and information.

The Lufthansa Group

Social responsibility

Environment

Corporate citizenship

Glossary

The Lufthansa Group

Corporate governance

Prizes and awards

Fleet modernization**Investments****Airbus A380****Stakeholder dialogue****Sustainability**

Profitability

Quality

Deutsche Lufthansa AG is an aviation company with operations worldwide. The Group is active in five business segments, which offer high-quality mobility and services for airlines. The Passenger Airline Group is the largest business segment and is the nucleus of the corporate group. The airlines of the Lufthansa Group position themselves as quality carriers in their respective segments.

The other business segments are Logistics, MRO (Maintenance, Repair, Overhaul), IT Services and Catering; they all have leading roles in their industries. The Lufthansa Group comprises a total of more than 400 subsidiaries and associated companies.

At the end of 2009, the Lufthansa Group counted 117,521 employees worldwide. Corporate headquarters is in Cologne. Frankfurt, Munich, Zurich and Vienna are the key hubs in the company's worldwide route network. In addition, Hamburg, Dusseldorf and Berlin are important locations for the Group.

[Passenger Airline Group](#)

[Logistics](#)

[MRO](#)

[IT Services](#)

[Catering](#)

The Lufthansa Group's five business segments

Passenger Airline Group

Passenger transportation is the core business of the Lufthansa Group. The business segment Passenger Airline Group comprises the Lufthansa Passenger Airlines, SWISS, Austrian Airlines, British Midland (bmi), and Germanwings as well as the equity investments in Brussels Airlines, JetBlue and SunExpress. The airlines of the Lufthansa Group position themselves as quality carriers and occupy top positions in their respective segments. As the leading European network carrier, the Lufthansa Passenger Airlines, SWISS, Austrian Airlines, bmi and Brussels Airlines serve a combined total of 274 destinations in 104 countries on four continents (summer timetable 2010) and thus guarantee a highly diversified flight offer.



Lufthansa

→ www.lufthansa.com

About 55.6 million passengers decided in favor of a flight with the Lufthansa Passenger Airlines in 2009. These include the Lufthansa Passenger Airline, Lufthansa Regional and Lufthansa Italia. The Lufthansa brand has always stood for quality, reliability and innovation.

The Lufthansa Passenger Airlines offer a comprehensive network with flights to 204 destinations in 81 countries. Lufthansa is a founding member of the world's leading airline network, Star Alliance, and also maintains numerous partnerships with other airlines. The 26 Star Alliance partners currently fly to 1,077 destinations in 175 countries.

Lufthansa Regional comprises:

 **Lufthansa CityLine** **Air Dolomiti** **eurowings** **Contact Air** **Augsburg Airways**

SWISS



→ www.swiss.com

Swiss International Air Lines is a stock corporation with headquarters in Basel. As the national airline of Switzerland, SWISS embodies the brand values of personal service, highest quality, reliability and Swiss hospitality. As part of the Lufthansa Group and member of the Star Alliance, it positions itself with a modern product in all three service classes as a quality airline and premium brand.

Austrian Airlines



→ www.aua.com

With its three companies (Austrian Airlines, Lauda Air and Tyrolean Airways), Austrian Airlines unifies a significant part of the Austrian aviation market in a dynamic, quality-oriented Group. Reporting the highest level of revenues, Austrian Airlines is the market leader in its home market, Austria. It has also positioned itself successfully as a specialized network carrier for the growth regions Central and Eastern Europe as well as the Middle East. Austrian Airlines is a member of the Star Alliance and has been part of the Lufthansa Group since September 3, 2009.

bmi



→ www.flybmi.com

bmi consists of the three airlines bmi mainline, bmi regional and bmibaby. The core markets of all three companies are in Great Britain. Lufthansa acquired 50 percent and one share in British Midland Airways Ltd. (bmi) in July 2009. With the acquisition of the 20-percent share from the SAS Group, Lufthansa has been the sole shareholder of bmi since November 2009 via its British holding company LHBD Holding Ltd. bmi is also a member of the Star Alliance.

Germanwings

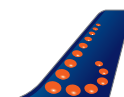


→ www.germanwings.com

Germanwings is one of the most successful companies in the segment of European no-frills airlines. The company's locations are Cologne/Bonn, Stuttgart, Berlin Schönefeld, Hamburg, Hanover and Dortmund. The fully-owned Lufthansa subsidiary has its headquarters in Cologne.

Equity investments

Brussels Airlines



→ www.flysn.com

Brussels Airlines is the largest Belgian airline and has its headquarters and home base in Brussels. Lufthansa has held 45 percent of the parent company of Brussels Airlines, SN Airholding SA/NV, since June 2009. With its strong presence on the African continent, Brussels Airlines is a valuable partner in the Lufthansa network.

SunExpress



→ www.sunexpress.com

SunExpress was founded in 1989 by Lufthansa and Turkish Airlines. The airline has a strong market position in traffic between Europe and Turkey. At the same time, its importance on routes within Turkey is growing.

JetBlue



→ www.jetblue.com

JetBlue, in which Lufthansa holds a share of 15.6 percent, is a U.S. airline with headquarters in New York. JetBlue is a strong partner for Lufthansa for flights within North America and to Caribbean destinations.

Logistics



→ www.lufthansa-cargo.com

Lufthansa Cargo AG ranks among the market leaders in international air freight transport. It offers a worldwide network, the shortest transport times and high quality standards in numerous product areas, many of them highly specialized. Lufthansa Cargo's area of emphasis lies in the airport-to-airport business. Its route network includes about 300 destinations in 90 countries, which are served by freighter aircraft as well as the freight capacities of Lufthansa passenger aircraft and trucks. The most important hub for Lufthansa Cargo is Frankfurt Airport. The airport Leipzig/Halle has developed as another important transfer point. It counts among the most modern and efficient cargo hubs in Germany. Lufthansa Cargo has its headquarters in Kelsterbach, near Frankfurt, and is a wholly-owned subsidiary of Deutsche Lufthansa AG.

MRO



→ www.lufthansa-technik.com

Lufthansa Technik AG is the world's leading manufacturer-independent provider of maintenance, repair and overhaul services (MRO) for civil aircraft. As a full-service provider, the MRO Group offers diversely structured products and product combinations, ranging from the individual repair of a single piece of equipment to the fully integrated maintenance of entire fleets including reserve engines and components. Lufthansa Technik comprises 31 technical maintenance operations worldwide. More than 600 customers around the world rely on the know-how and expertise of the wholly-owned Lufthansa subsidiary. Lufthansa Technik AG has its headquarters in Hamburg.

IT Services



→ www.LHsystems.com

Lufthansa Systems AG is one of the leading IT service providers worldwide for the airline and aviation industry. As a systems integrator with one of the most modern computer centers in Europe, the wholly-owned Lufthansa subsidiary covers the entire spectrum of IT services – from consulting and development to the implementation of industry solutions. Among its customers are more than 200 airlines, to whom Lufthansa Systems offers a comprehensive portfolio of innovative solutions to increase efficiency and flexibility, independent of their respective business models. In the areas of infrastructure services and consulting, Lufthansa Systems offers its services across industries. The globally active company has its headquarters in Kelsterbach, near Frankfurt, and has several subsidiaries in Germany and abroad.

Catering



→ www.lsgskychefs.com

LSG Sky Chefs is the world's largest provider of services in the area of airline catering and in-flight management. The group comprises 130 companies and is represented at more than 200 locations in 52 countries. Almost all international carriers as well as numerous national and regional airlines – network carriers, charter companies and no-frills airlines – figure among the worldwide customers of LSG Sky Chefs. Beyond pure airline catering, LSG Sky Chefs increasingly provides consulting, developing and logistics services for its customers. The wholly-owned Lufthansa subsidiary has its headquarters in Neu-Isenburg, near Frankfurt.

Corporate governance

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. The Executive Board is solely responsible for steering the company, aligning it strategically and increasing its value long-term. The Supervisory Board appoints, advises and supervises the Executive Board.

Deutsche Lufthansa AG fulfills two functions: It is the ultimate parent company and the largest operating company within the Group.

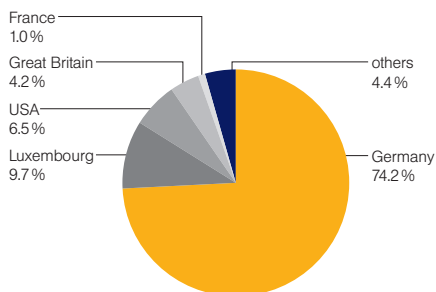
Shareholder structure

The Lufthansa share has been traded on German stock exchanges since 1966. It is represented in the German Share Index DAX and is part of the Prime Standard of Deutsche Börse (German Stock Exchange). Lufthansa fulfills the highest level of international transparency requirements related to this standing. The company's share capital is divided into 457.9 million registered shares, which are held by about 358,000 shareholders. According to the standards of Deutsche Börse, the free-float quota was at 100 percent for Lufthansa shares at the end of 2009.

At the end of 2009, 74.2 percent of the Lufthansa share capital was held by German shareholders. To maintain its international traffic rights and air transport operating permit, Lufthansa must be able to prove at any time that the majority of its shares are in German possession.

Shareholder structure by nationalities

on 31.12.2009



For more detailed information on the shareholder structure, please see page 32 of the printed Lufthansa Annual Report 2009 or the online version at:

→ www.lufthansa.com/investor-relations

Corporate governance

Responsible company management in line with the rules of effective corporate governance is a substantial part of Lufthansa's identity. The efficient, 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 demands for information from shareholders, employees, customers and the public – thus maintaining and strengthening their trust in the Group. Since 2002, Lufthansa has fulfilled all the recommendations of the German Corporate Governance Code and beyond that also follows most of its optional suggestions.

The Lufthansa Compliance Program

As adhering to legal and social regulations and standards is everyday practice at Lufthansa, the Group has not formulated its own Code of Conduct.

Special attention is placed on ensuring a corporate culture that demands conformity with rules and creates a framework of conditions that promotes such conformity. This is the purpose of the Lufthansa Compliance Program, which was introduced in September 2004. It is to prevent employees from breaking the law, train them in applying and interpreting legal norms and support them with advice in their daily work.

Given the topic's importance, Lufthansa set up a Compliance Office on October 1, 2007, as part of its central legal department. It is responsible for the implementation, further development and communication of the Lufthansa Compliance Program and is available as a central contact for compliance-relevant questions. In addition, Compliance Commissioners, who are named at the various Group companies, ensure the Group-wide adherence to the Compliance Program.

The core components of the Lufthansa Compliance Program are its compliance guidelines. These are binding internal regulations that give employees not only strategies but also a binding framework for action which guarantee a stan-

Principles of the “UN Global Compact”

Human rights

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

Labor

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

Environment

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

Anti-corruption

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

→ www.unglobalcompact.org



The Global Compact is a worldwide initiative that was set up by the former UN Secretary-General Kofi Annan. The compact between companies and the United Nations has the goal of making globalization socially and environmentally compatible, and it obliges the participating companies to adhere to social and ecological minimum standards, to respect human rights and to fight against corruption. Lufthansa has been a member since 2002.

standardized and law-abiding external conduct for Lufthansa. The Lufthansa Compliance Program currently comprises four building blocks: Competition, Capital Market, Integrity and Corporate Compliance.

Competition Compliance

The module Competition Compliance introduces employees to the relevant regulations of cartel legislation, so as to minimize or exclude risks for Lufthansa in this area.

Capital Market Compliance

The module Capital Market Compliance familiarizes employees with current capital market law, such as regulations relating to insider trading or ad hoc publicity. The goal is to keep both the Lufthansa Group and its employees from breaking the law.

Integrity Compliance

With the module Integrity Compliance, Lufthansa documents its fundamental approach of law-abiding conduct in business intercourse. The obligation on the part of Lufthansa and its employees to adhere to non-corrupt and ethical conduct flows naturally from current law, the compliance guidelines and Lufthansa's memberships in relevant national and international organizations. Examples of these are Lufthansa's commitment to the principles of the UN Global Compact, its membership

in Transparency International and its obligation to respect the ICC guidelines to combat corruption in business dealings.

Corporate Compliance

The module Corporate Compliance bundles those internal regulations that are considered essential for Lufthansa from a legal perspective and makes these transparent for managers and employees.

Ombudsman system

To allow the confidential transmission of information pertaining to possible economic crimes, Lufthansa set up an ombudsman system on December 1, 2007. As an additional preventative measure against economic crimes, it is aimed at protecting Lufthansa and its employees. Relevant information can be given by employees or by third parties to an ombudsman outside the company, either by telephone, in writing (e-mail, letter, fax) or in person.

This function is fulfilled by a lawyer. In the context of his contractual relation with Lufthansa, the ombudsman establishes with the informant a particular relationship of trust, which consists of the transmission of the information entrusted to him to Lufthansa under absolute secrecy with regard to the name and identity of the informant. In this relationship, the ombudsman is fully bound by

the legal obligation of professional secrecy and also has the right to refuse evidence vis-à-vis any public investigative authorities that might become active.

In addition, Lufthansa and the ombudsman have expressly agreed that the identity of an informant will not be revealed and any documents the ombudsman might have received will not be handed over, unless the informant has expressly stated his or her desire that these items be made public.

The revealing of an informant's identity to Lufthansa or third parties without his or her consent is therefore ruled out.

Communication of the compliance guidelines to employees

Employees can access information concerning the compliance guidelines on the Group's intranet at any time. Beyond that, any employee can complete eLearning courses related to the modules Competition Compliance, Integrity Compliance and Capital Market Compliance. These courses are obligatory for all employees dealing with issues that might be compliance-relevant. As a supplement to the eLearning courses, the Compliance Office also offers training courses.

Prizes and awards

The Lufthansa Group received last year the following prizes and awards for its performance and services:

Prizes go to Business Class at Lufthansa and SWISS

The corporate travel magazine Business Traveler awarded prizes to two airlines in the Passenger Airline Group: For 2009, Lufthansa was voted into the top position in the categories "Best Business Class on domestic German and European flights" and "Best airline website for business travelers." At the same time, SWISS received acknowledgment for the "Best Business Class for flights to North and South America."

Lufthansa received prize as best European airline in Asia

In 2009, Lufthansa won several important awards of the Asian travel industry. Readers of Asia's leading travel industry magazines voted Lufthansa the best European airline. In addition, Lufthansa received an award as "Best international airline in 2009" in the context of the CNBC Awaaz Travel Awards in India. CNBC Awaaz is the country's leading business television station. And its Travel Awards are among the most important in India's tourism industry.

Four times top marks for Lufthansa

Every year the British life-style magazine Monocle publishes the "Travel Top Fifty," with which its far-traveled editorial staff give recognition to their best travel experiences around the world. In 2009, four of these awards went to Lufthansa, which distinguished itself with special services, new products and innovative business ideas.

Award given to Wolfgang Mayrhuber

On October 23, 2009, Lufthansa CEO Wolfgang Mayrhuber was presented the "Distinguished Achievement Award" of the Wings Club in New York. Since 1975, the club has honored distinguished personalities with this award for their special achievements in the aviation and space flight industries.

Quadruple award for Lufthansa Technik

Lufthansa Technik was honored as Best MRO Provider by the British trade publishing house UBM Aviation. Taking a total of four prizes in 12 categories, Lufthansa Technik was the most successful of the 24 companies from around the world competing for prizes given by the UBM Aviation Industry Awards for the first time. Lufthansa Technik was honored in London not only as the best all-round MRO provider worldwide but also as the winner in the categories engine maintenance, aircraft overhauls and service provider for customers outside the parent company.

Lufthansa and SWISS honored as Europe's best airlines

Travel experts from around the world selected Lufthansa as "Europe's leading airline" on the occasion of the 2009 World Travel Awards. The World Travel Awards are currently the most comprehensive and most renowned award program of the global travel industry. According

to the Wall Street Journal, this award is the “equivalent of an Oscar” in the travel industry.

The renowned British consulting firm Skytrax awarded SWISS the coveted 2009 World Airline Award as “Best Airline in Europe” on short-haul and long-haul routes. The award is based on a survey in which more than 15 million passengers from 95 countries rated over 160 airlines. And Switzerland’s business magazine Bilanz also ranked SWISS as Europe’s best airline.

Several awards for Austrian Airlines

In 2009, Austrian Airlines also achieved very good rankings in the World Airlines Awards presented by Skytrax in the categories Best Business Class Catering (3rd place) and Best Cabin Staff in Europe (2nd place). In the Business Traveller Awards, the company placed second in the category “Best airline in Europe for food and beverages.”

In addition, Austrian Airlines received the award “Audit Job and Family” of the Austrian Federal Ministry for Health, Family and Youth.

Investor Relations award for shareholder care

The German business magazine Capital and the German Association for Financial Analysis and Asset Management (DVFA) presented the “Capital Investor Relations Prize 2009” on June 18, 2009. Lufthansa was the winner in the evaluation of DAX companies not represented in EURO STOXX 50. The award has been presented since 1997 for the best communications program for financial markets by German and European companies. In 2009, selections were based on a survey of almost 400 analysts and fund managers at nearly 300 financial institutions in Germany and abroad. They evaluated the investor relations work of companies according to the categories target-group orientation, transparency, track record and “xtraFinancial reporting.”

Excellence in Practice Award for Lufthansa School of Business

The cooperation between the Lufthansa School of Business (LHSB) and the London Business School in the area of the “General Management Program” (GMP) received the Excellence in Practice Award in Brussels. This prize has been given for three years by the renowned European Foundation of Management Development (EFMD) and honors innovative cooperations between companies and business schools.

Double award for Lufthansa Cargo

Lufthansa Cargo received two important awards for its excellent performance. It ranked first in the “World Air Cargo Awards” of the trade publication Air Cargo Week in the category “Air Cargo Industry Customer Care.” In a vote cast by readers as part of an online survey, the company managed to pull ahead of the competition in the area of customer service. In addition, Lufthansa Cargo was again honored at the “Asian Freight & Supply Chain Awards” (AFSCA) as “Best Air Cargo Carrier Europe.” The AFSCA is considered the most important logistics award in Asia.

Renewed awards for the frequent flyer program Miles & More

Once gold, once silver and twice bronze – at the Freddie Awards, the Oscars for frequent flyer programs, Miles & More received a total of four awards on April 23, 2009 in the U.S. city of Fort Lauderdale – one more than in 2008.

Sustainability within the Lufthansa Group

Sustainability is a significant component of corporate culture at Lufthansa and it has been firmly anchored in the Group’s strategic principles for many years. We bring economic activities in line with ecological and social goals. The expression of this approach is our active environmental care, our responsible way of treating employees, our social commitment and not least our strategy of long-term profitable and value-creating growth, which is the basis for our sustainable activities.

The basic framework for steering and controlling sustainability-related processes at Lufthansa is defined by the Sustainability Board, which is situated at the top management level. This interdisciplinary cross-departmental body is composed of the heads of Investor Relations, Corporate Communications, Corporate International Relations and Government Affairs, Corporate Human Resources Policies and Group Environmental Issues and reports directly to the Group’s Executive Board.

The implementation of sustainable goals, strategies and measures within the Group is the task of Human Resources Management and Environmental Management. Moreover, each company area has its own person responsible for these subjects with regard to content. As part of our Strategic Environmental Program, we have set ourselves the goal of further expanding and strengthening environmental management at the Group level and at Group companies by 2020.

We place great value on an open, constructive and critical dialogue with the public and our stakeholder groups (see “Stakeholder dialogue” on page 19). The best example for this approach is this report *Balance*. It has long covered the subject of responsibility in all its dimensions, ever since Lufthansa first published it for the reporting year 1994 as an environmental report. *Balance* is also available for download on our Internet page, which we redesigned entirely

→ www.lufthansa.com/responsibility

Sustainability holds perspectives for the future

What is the importance of sustainable economic activities for the capital markets?

Investors have always had an interest in the sustainable development of those companies on which they put their money. They need to assure themselves that the



Frank Hülsmann, Senior Vice President Investor Relations at Lufthansa, explains the links between sustainability and investor relations in this *Balance* interview.

success of their investments is not the exception, but that they earn profits over the long term. A certain way of doing business on the part of those companies is a significant prerequisite for this. But the spectrum that is being used to assess this sustainability has widened continuously over the past years. Today, it's not only profitability that counts, but investors take a look behind the scenes and into areas that have contributed to obtaining these profits, such as corporate governance and how employees and the environment were treated.

What importance do sustainable investments have in the market?

No professional investment house can live on fast profits alone in the long run; the crisis in the financial market has demonstrated that. For this reason, investments that are orientated toward sustainability are growing continuously in importance. I remember well how the first specialized funds with such an orientation were put on the market, many years ago. They were really exotic papers, but even then they met the interest of some investors. Meanwhile, they've become part of the portfolio of any serious assets manager. But even the broad-based retail investment funds increasingly take the so-called ESG criteria (Environmental, Social & Corporate Governance) into consideration for their investments. And so it was only a small step for the first analyst houses to start including them in their regular company and industry studies. It will not take long until these criteria are counted as part of the standard package. But the motto will continue to apply: no economic perspective, no investment. The chaff will possibly be further separated from the wheat among investment options as well.

What kind of potential does sustainability offer for Lufthansa and its investors?

Lufthansa has followed the principles of sustainable corporate governance for a long time and thus differentiates itself from many of its competitors. One needs

to know that the air transport industry is a highly volatile business, given its strong dependence on the development of economic trends. Fluctuations like those during the last business year, in which the world economy recorded pronounced losses, have devastating effects on airlines. The results are losses in the billions and bankruptcies. It's not a rare scenario that competitors have their backs to the wall, have to lay off employees on a large scale during the crisis and avoid investment because they simply don't have the means. Early on, Lufthansa has prepared its corporate control mechanisms to be able to fly through turbulent economic phases and to make sure that these do not threaten its entrepreneurial development. This secures our perspective for the future and distinguishes us from many competitors. In a nutshell: When certain investors make investments in Lufthansa even though they would ordinarily not touch this industry, this is thanks to our sustainable orientation. The entire company benefits from this support, in times of crisis as well as during an economic upswing. But investors also benefit because they can expect a substantially-based performance or outperformance.

Which role do the rating agencies play in this context?

As is similarly established in the credit markets, independent rating agencies want to provide an evaluation of sustainable corporate orientation that is neutral and comparable across sectors. This is helpful not only for investors but also for issuers, because the company with the best contents is the most convincing.

in 2009. There, Internet users can access further detailed and useful information on our ecological and social activities, our environmental indicators, and our environmental goals and measures.

In addition, in fall 2009 we again informed passengers on all Lufthansa flights about the most important facts, activities and goals in Lufthansa's environmental care. The concise informative brochure entitled "Verantwortung/Responsibility," published



But at the moment the market for rating agencies is still highly heterogeneous and not very efficient; the quality of institutions varies broadly. Standardization in the criteria and approach would sometimes be desirable. Therefore, we put a great deal of effort and resources into responding to the highly varied inquiries from rating agencies in an appropriate manner and timeframe. But I expect that this market will also continue to develop and that quality and efficiency will prevail.

What are the expectations of investors?

Investors put their money on a positive, solid, sustainable corporate development that is also reflected in earnings. We must not lose sight of one thing: Sustainable investments are not an end in themselves, but they serve the purpose of qualifying investment alternatives. It will hardly ever happen that an investment is made only because a company is managed in socially and environmentally compatible ways but otherwise no money can be earned with it. On the other hand, more investors will cut back their involvement when profits are made in ways that are not in line with the principles of sustainable company management.

How do you communicate the sustainability strategy of the Lufthansa Group to investors?

In communicating with our investors, on aspects of sustainability as well, we use all the channels available: for example our Annual and Interim Reports as well as *Balance*. Given the subject's impor-

tance, we offer a separate sustainability page on the Internet. But the focus is on personal contacts. This is true for the rating agencies and our investors alike. We significantly intensified the contact with both during the crisis year 2009 to be fully accountable in difficult times as well – this too is an expression of our understanding of sustainability.

How do investors rate the sustainability performance of the Lufthansa Group?

For many years, our shareholders and external experts have acknowledged our sustainability-oriented corporate development. This is not a given in our industry. But for us it is an essential part of our company management and it applies to all areas: For example, we aim at securing jobs – also during times of crisis – by means of far-reaching flexibilization. We also treat the employees of our new Group airlines with respect because we can learn a lot from each other. These acquisitions were based on the medium-term synergy potentials and not on short-term profit maximization at the expense of the new companies. We also continue our fleet modernization program despite the current crisis because these new aircraft are substantially more fuel efficient. The environment and our wallet benefit equally from this. That this is possible is due to the fact that we secure our operating and strategic company development by means of a strong financial profile in order to remain the master of our decisions at all times. The entire Group is steered according to these principles of value-oriented management. Since the

introduction of this type of management in 2000, the Group has created more than 2 billion euros in value, despite the attacks of September 11, 2001, SARS and the current crisis. All these developments create an overall picture that is well received by our investors and the rating agencies. For instance, in 2009 the Lufthansa share was again listed with new top values in the renowned Dow Jones Sustainability Index, which takes economic as well ecological and social criteria into consideration.

What is the focus for your activities in 2010?

We will further intensify our activities in 2010 as well. In this process, the aspects of sustainability will also grow. In this context, for instance, we've added the ESG criteria to the standard for our company presentations. We'll also be doing dedicated sustainability road shows and presenting the company at relevant conferences for institutional and private investors. And I'm convinced that these activities will be further intensified in the years ahead.

in German and English, was available aboard Lufthansa aircraft until the end of January 2010.

In 2009, we again proved our conscious and responsible way of interacting with the environment, employees and society: With the best result to date, Lufthansa was confirmed as a member of the internationally recognized Dow Jones Sustainability Index (DJSI), which includes only three airlines worldwide. In comparison with the previous year, we again improved our ratings in the assessment dimensions economy and ecology, achieving the highest overall score since our first inclusion in the DJSI in 1999. In this worldwide comparison, therefore, Lufthansa ranks among those companies that take a leadership role with regard to the aspects of sustainability. As an industry leader, Lufthansa sets standards in the social dimension in particular. We received top scores in the areas of staff development, recruitment of highly qualified talents and employee retention. Lufthansa also received top marks for environmental criteria such as noise reduction and local air quality and was honored for its economic efficiency.



The DJSI is managed by Switzerland-based Sustainable Asset Management Indexes GmbH (SAM), which regularly analyzes the economic, ecological and social performance of more than 2,500 companies worldwide and selects the best of each industry for the index. At the same time, SAM listed Lufthansa again in its "Sustainability Yearbook 2010," the world's most comprehensive work of reference for assessing the sustainability performance of individual companies. As in the previous year, we received the honor of being ranked in the "SAM Gold Class." Lufthansa is also represented in the sustainability indices FTSE4Good, ASPI (Advanced Sustainable Performance Indices) and ESI (Ethibel Sustainability Index).



Sustainable purchasing

At the beginning of 2009, the Lufthansa Group launched the project "Procurement Leadership" to further professionalize the Group-wide purchasing processes. The focus is on the introduction of a strategic goods-category management, which is to help the purchasing departments contribute about 300 million euros to the operative result in a sustainable manner by 2011. The development of strategy is accompanied by intensive work on basic steps to secure this professionalization long-

term. Beyond new IT systems and diverse process changes, this includes a fundamental reorientation of the supplier management, reaffirming Lufthansa's commitment to sustainability both in its procurement organization and along the entire chain of suppliers.

As a "procurement leader," Lufthansa will in future not only demand decently through its Group companies that suppliers adhere to binding sustainability criteria. The company will also anchor these criteria Group-wide in all contracts and internal guidelines. Lufthansa orientates itself in relation to internationally recognized conventions on environmental protection and industrial safety, the legal regulations to fight corruption and the security guidelines concerning information processing. Companies that do not accept these clauses are not included in the pool of Lufthansa suppliers. The employees in procurement departments receive regular training to ensure that the high standards that Lufthansa sets for itself can also be asked of its worldwide suppliers. In a parallel move, Lufthansa will check from 2010 that "leadership" in procurement is also ascertained in terms of sustainability by means of standardized audits.



Stakeholder dialogue

Appreciative, open, solutions-oriented



Lufthansa actively seeks a dialogue with its stakeholder groups and faces up to the critical questions from shareholders and analysts, customers, employees and employee representatives as well as suppliers and contractual partners. For the Group, it is just as important to maintain intensive exchanges with neighbors and local communities, representatives from politics and public authorities, scientists and educators, employer associations, environmental associations and non-governmental organizations. Pursuing the goal of shaping a future guided by the principles of sustainability, the Group takes the demands of its stakeholders into account when developing new products and services: Their wishes, expectations and experiences are incorporated into Lufthansa's entrepreneurial activities.

An attentive ear for customer concerns

The long-term success of the company stands and falls with the trust that Lufthansa customers place in the Group. To secure this trust, Lufthansa regularly carries out customer surveys. These not only aim at finding out how the company's services and products are accepted. They also make it possible to identify and realize potentials for improvement. Lufthansa, for instance, uses this instrument worldwide and cooperates with renowned market research institutes for this purpose. These surveys also include questions concerning the company's environmental performance and social responsibility.

On the testbed every year: Customer satisfaction

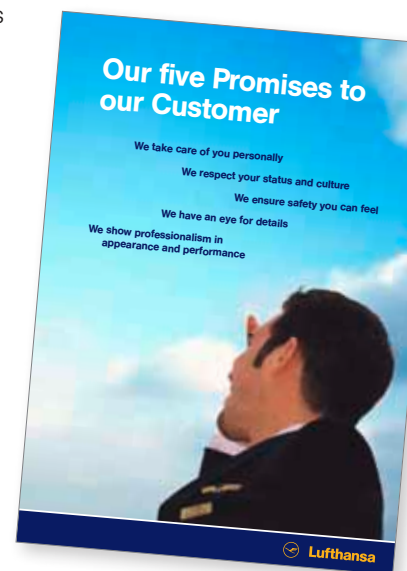
Lufthansa measures customer satisfaction continuously by means of the Customer Profile Index, which has been calculated since 2001. The Customer Profile Index is composed of customer evaluations along the entire service chain and calculates customer satisfaction in percentage points. A glance at the results shows that customer satisfaction has increased continuously over the past years. Following the record value of 7,619 points in 2008, it even reached 7,879 points at the end of 2009. This heartening development is in large measure due to the motivation and commitment of Lufthansa's employees.

The customer satisfaction surveys have also shown that Lufthansa customers take a lively interest in the issue of sustainability in air transport. Not only do they demand active measures to further reduce the emissions caused by the Group, but they also express their opinions on the topic of recycling. It is decisive against this background to inform employees comprehensively about the results of customer satisfaction research and thus increase their willingness to accept necessary changes and sustainability-related process adaptations.

In the service of optimization: The initiative Service Excellence

With the aim of clarifying for employees the essential importance of the factor customer orientation, Lufthansa launched the initiative Service Excellence in 2004. Events are organized regularly where the focal point is the exchange of opinions with Lufthansa status customers. One central result of this dialogue are the five service promises, which impart essential aspects of perfect Lufthansa service to cabin crews (see illustration).

To reflect upon these promises and make them concrete, Lufthansa set up the Service Excellence Lounge every two months in 2009 as well. These events are moderated by a presenter and guarantee an exchange of firsthand experiences as their participants are in each case three top international customers, 60 pursers and selected flight attendants and pilots. The results are channeled directly into the briefings of cabin crews and thus contribute to optimizing service.



The company is also active on a local level and regularly invites Lufthansa customers to participate in its Customer Advisory Boards. The goal of these meetings is to survey Lufthansa passengers concerning all aspects of the service chain and to discuss the chain's further development.

FlyerTalk: Frequent flyers ask – the Executive Board answers

To intensify the communication with frequent flyers in particular, the company invited members of the Internet forum → www.flyertalk.com to Frankfurt in November 2009: For four days, a total of 230 frequent flyers of Lufthansa and other airlines within the Star Alliance had the opportunity to look behind the scenes of the Group and its partners. On the program of this informational event were guided tours of the Lufthansa Flight Training Center (LFTC), the hangars of Lufthansa Technik and a tour of Frankfurt Airport. In addition, the FlyerTalkers tested new Lufthansa products and gave the developers their direct feedback. A highlight was the personal exchange with top managers from Lufthansa and other Star Alliance airlines at the Lufthansa Aviation Center – including Lufthansa CEO Wolfgang Mayrhuber. As a token of their appreciation, the FlyerTalk members from Germany, Europe, North America, Australia and New Zealand made a donation of 3,000 U.S. dollars for the benefit of a HelpAlliance project.

Guided tours with the Lufthansa Visitors' Service

A special kind of customer dialogue is made possible by the Lufthansa Visitors' Service. It offers guided tours at the locations Frankfurt and Hamburg focusing on one of a range of topics. This gives company representatives, dispatchers, university graduates, people living near airports and other target groups the possibility to gather

comprehensive information on the spot and to exchange opinions. In Frankfurt, a total of 550 such events with about 8,000 visitors took place in 2009; in Hamburg, there were 480 events with more than 11,000 participants.

Austrian Airlines also offers insights into the world of aviation and the company: Under the motto "Visit Austrian," members of professional associations, VIP Groups or participants in educational trips can gather comprehensive information. The emphasis is on events for schools, but tailor-made programs including specialized presentations are also possible.

Dialogue events with employees

Lufthansa is a service company and the quality of these services is inseparably linked to the people who provide them on a daily basis: the employees. To become better acquainted with the specific wishes, needs and expectations of cabin and cockpit crews, the Group relies on regular dialogue events.

Beyond that, individual Group companies conduct employee surveys at regular intervals to obtain information about commitment, involvement and other aspects of employee satisfaction (see also the article "Employee Feedback Management" on page 39).

The members of the Executive Board are in continuous contact with employees. Numerous Town Meetings serve the purpose of informing especially those employees at the decentral locations in a direct way.

Twitter & Co: Communication at today's beat

The expansion of communications activities to social networks in Web 2.0 proves that communications is not a one-way street for the Lufthansa Group. The company has not only set up several Twitter channels to respond to questions as swiftly as possible and to get feedback, but Lufthansa is also active on Facebook and work-related platforms such as XING.



Far-reaching insights into the Group: Experienced Lufthansa employees are there to answer all questions – here during a guided tour of the maintenance hangars of Lufthansa Technik at Frankfurt Airport.

“HubDay”: Being good neighbors

Lufthansa places great value on the dialogue with neighbors and local communities. In the context of “HubDay FRA” on September 1, 2009, Lufthansa and Fraport AG – the operator of Frankfurt Airport – jointly presented up-to-date information, plans and perspectives regarding the expansion of Germany’s largest air transport hub. The event’s focus was on the new pier A-Plus: Roland Koch, Prime Minister of Hesse; Dr. Stefan Schulte, Chairman of the Executive Board of Fraport AG; and Wolfgang Mayrhuber, Chairman of the Executive Board of Deutsche Lufthansa AG, together laid the foundation stone for the pier in the presence of 350 guests from business, politics and society. Following its completion in 2012, this new terminal area will be used exclusively by Lufthansa.

Furthermore, Lufthansa has participated since fall 2008 in the Forum Airport and Region, whose task is to inform interested citizens and to develop measures that contribute to active noise protection (see article “Active noise protection at Frankfurt Airport – The Forum Airport and Region” on page 63).

Founding member of the German Air Transport Initiative

German air transport companies have leading positions worldwide. And – like the air transport location Germany as a whole – they endeavor to strengthen their opportunities in global competition over the long term. These efforts can only succeed if the goals and intentions of all interested stakeholder groups are exchanged and mutual agreement is thus created. For this purpose, Deutsche Lufthansa AG has joined forces with DFS Deutsche Flugsicherung GmbH, Flughafen München GmbH and Fraport AG under the umbrella of the German Air Transport Initiative. Under the patronage of the Federal Minister for Transport, Building and Urban Development, this system partnership works together with politicians and ministries at the federal and state level to achieve the highest levels of quality and efficiency for Germany as an air transport location.

Maintaining a dialogue with shareholders and analysts

In 2009, Lufthansa informed shareholders and analysts about current and strategic developments at the Group in the context of 35 road shows and ten investor conferences. Additionally, members



of the Executive Board and representatives of the department Investor Relations conducted 400 individual and group discussions with institutional investors and analysts. Another building block in financial communications were the conferences (in person or by telephone) on quarterly results with the participation of the Executive Board. A further communications instrument was the Investor Info, which is published monthly and reports on subjects such as the current traffic development of the “flying” Group companies. Private investors also received the Shareholder Info several times a year with information about the Group. Beyond that, Lufthansa organized its annual Investors Day. Since 2009, the redesigned, barrier-free web page has offered unlimited access to numerous presentations and financial publications by the Group.

When completed, the pier A-Plus will be 790 meters long and offer parking positions for seven wide-body aircraft.

→ www.lufthansa.com/investor-relations

Profitability

Group initiative concluded successfully

In February 2010, Lufthansa successfully concluded its Group-wide initiative “Upgrade to Industry Leadership” after a two-and-a-half-year drive. The initiative’s goal was to improve the long-term profitability of all business segments by promoting learning from each other and increasingly cooperating with each other across segments. Examples are the realization of cost and revenue potentials, projects for the optimization of processes, and improvements in quality. “With ‘Upgrade to Industry Leadership’ we’ve embarked upon new paths and have built a solid foundation to achieve or secure a top position in as many areas as possible,” said Wolfgang Mayrhuber, Chairman of the Executive Board of Deutsche Lufthansa AG, taking stock of the initiative.

Upgrade^o
to Industry Leadership

In the framework of this initiative, Lufthansa has launched and in part already implemented about 140 projects involving all business segments. These will provide significant and above all sustainable contributions to the Group's result. An especially large share is contributed by projects in which several Group areas have bundled their potentials and jointly developed innovative approaches.

The spectrum of projects is wide. It ranges from the Electronic Flight Bag to Lean Management at LSG Sky Chefs and Lufthansa Technik to the Group-wide real-estate management and the multi-sector project Fuel Efficiency Leadership (see article "On our way to the top in fuel efficiency" on page 51). In financial terms, the largest project is Procurement Leadership, which aims at the further development of Group-wide purchasing (see also page 18). Since the middle of February 2010, the line organizations have continued the ongoing projects of this Group initiative. In part, the projects were also integrated into existing programs, such as "Climb 2011" at the Lufthansa Passenger Airlines, to secure the Group results.

Portfolio additions: New brands offer new perspectives

With the successful integration of SWISS into the Group, Lufthansa has gained valuable experiences for maintaining an active role in the consolidation process of the air transport industry – provided that this makes sense strategically and economically.

In 2009, with the acquisition of Austrian Airlines and bmi and the equity investment in Brussels Airlines, three new airlines were integrated into the Group network. The considerations behind these acquisitions aim at a long-term partnership and the realization of synergies, not at the generation of short-term profits. These new partners are supported in their efforts to increase their long-term profitability by means of the expert knowledge available within the Group.

As with the integration of SWISS, these companies retain their identities and their brands, and are managed as independent companies within the network (see *Balance*, issue 2009, pp. 22–25). Thus, the strengths of the respective airlines in their markets and their entrepreneurship are

"The new companies come with much specific knowledge about their markets and business systems and we, as the Lufthansa Group, can learn a lot from them."

Dr. Alexis von Hoensbroech
Vice President Integration Management Airlines



maintained. Nevertheless, numerous synergies can be realized (e.g. in sales, ground handling, product development) by means of an efficient network coordination and the integration of many processes (e.g. in procurement and hedging).



The integration into the Lufthansa Group is implemented with great appreciation, respect and safeguarding of the corporate cultures of the new network partners.

Organizationally, the integration processes are accompanied by a specially set-up project team, "Integration Management Airlines," whose task it is to coordinate, guide and monitor all partnership-relevant topics across the Group. "Integration is not a one-way street. The new companies come with much specific knowledge about their markets and business systems and we, as the Lufthansa Group, can learn a lot from them," explains Dr. Alexis von Hoensbroech, Vice President Integration Management Airlines. The project team regularly reports to the Group Executive Board.

Looking together into the future: Lufthansa and Austrian Airlines.

The Board also takes the entrepreneurial decisions. The Airline Development Board (ADB), chaired by the Chairman of the Executive Board of Deutsche Lufthansa AG, Wolfgang Mayrhofer, was specifically established for this purpose. Here the Group Executive Board and the CEOs of the newly integrated airlines jointly consult and decide on the strategic development of the airline network.

The successful implementation of the network strategy depends significantly on opening up the synergy potentials within the network and returning the new Group companies Austrian Airlines and bmi to profitability.

Securing competitiveness

Program Climb 2011

Weaker demand due to the economic downturn, the disproportionate decline in average revenues in passenger transport, and the record fall in revenues in the business segment Logistics caused a deterioration in the Group's business result in 2009, compared to the previous year.

Lufthansa recognized this development early on and initiated "Climb 2011," a program to secure its financial results and to counteract the negative development in its core business. The program's goal is to achieve a competitive cost basis for the Lufthansa Passenger Airlines. Concretely, the project aims to sustainably improve its result by 1 billion euros by the end of 2011. The implementation of measures began in the third quarter of 2009. Emphasis is being given to reducing costs perceptibly in the administrative areas, improving the internal and external relationships with suppliers and increasing the productivity of personnel. Beyond that, the company is assessing its existing pricing models, the sizing of its continental flight offers and the operational flexibility of its aircraft. Further positive effects are expected from the adjustment of delivery times for new aircraft from 2010.

The range of focus points demonstrates that the current economic crisis is not the sole cause for the worsened results compared to the previous



year. More exactly, it acts as a negative amplifier of structural changes. These are above all the migration of business travelers to lower booking classes and the intensified competition with no-frills airlines and the airlines based in the Persian Gulf region.

Lufthansa has great experience in tackling such challenges. Currently, a project team headed by Thomas Klüßer is working on the implementation of Climb 2011. The people responsible for the project place special value on including the employees. In the framework of several dialogue events, the background and goals of the project were explained in detail and the acute need for action was explicitly pointed out. It is essential to create the awareness that the familiar, classic savings measures are not sufficient to achieve the goals of Climb 2011.

Climb 2011 refers specifically to the Group's core business, the Lufthansa Passenger Airlines. As the interdependent links with other business segments within the Group are numerous, these segments are either directly or indirectly included in the program as well.



The Lufthansa Group fleet

An up-to-date and well-structured fleet is not only the basis for economic success at Lufthansa. But modern aircraft also contribute to keeping the environmental effects of flying to a minimum. Therefore, when acquiring new aircraft, the Group always ensures that their future operating costs as well as their fuel consumption and noise emissions are as low as possible.

Lufthansa is currently implementing the largest fleet modernization program in the company's history: Between 2010 and 2016, the Group will put a total of 146 new aircraft with a list value of about 13 billion euros into operation. In 2009, the "flying" Group companies have already received 50 new, fuel-efficient aircraft, which also serve to replace older models.

The Airbus A380 is set to take off

In 2010, a new dimension of flying is set to begin for Lufthansa passengers. With the introduction of the summer timetable, the new Lufthansa A380 will start operations. The new flagship of the Group fleet sets new benchmarks in aviation history with a consumption of only about 3 liters of kerosene per 100 passenger kilometers. The Boeing 747-8 Intercontinental, which Lufthansa will operate from 2011, will burn similarly low amounts of kerosene. Compared with the types of aircraft that have been typically operated on long-haul routes – the Boeing 747-400, Airbus A340-300, A340-600 and A330-300 – the specific fuel consumption per seat offered by the two new efficient wide-body aircraft is about 13 percent lower.

At the same time, the A380 sets new standards in passenger comfort by featuring the "quietest cabin in the sky." Modern aerodynamics and the latest engine technologies contribute to lowering the A380's noise level audibly for passengers and people near airports in particular. The noise contour of a Boeing 747-8 Intercontinental taking off will be about 30 percent smaller than that of a Boeing 747-400 (see article "Ever quieter in the air" on page 63).

Lufthansa receives its first four A380s in 2010. The first Lufthansa A380 bears the registration code D-AIMA and is named "Frankfurt am Main," the second (D-AIMB) is named "München."

Quiet and fuel-efficient – the Bombardier CSeries

In March 2009, the Lufthansa Supervisory Board approved the order for 30 short-haul aircraft for SWISS. Starting in 2014, aircraft of the CSeries from Bombardier will replace the airline's current Avro RJ100 regional jets. New engine technologies and more lightweight materials ensure that the CSeries will help SWISS reduce fuel consumption by significantly more than a quarter compared to the Avro fleet – and CO₂ emissions by about 90,000 tonnes per year. But that is not all: An aircraft of the CSeries is also by 10 to 15 decibels quieter than an Avro RJ100; to the human ear, the noise is thus reduced by about half.

Economically efficient and environmentally compatible – the Embraer 190 family

Another example of the modernization of the regional fleet within the Lufthansa Group is the acquisition of the aircraft types Embraer 190 and 195, which are now in operation at Lufthansa CityLine, Air Dolomiti and Augsburg Airways and have replaced older, less efficient models.

A new dimension of long-haul air travel: the Lufthansa Airbus A380.



By the end of 2011, the Brazilian manufacturer Embraer will have delivered a total of 30 aircraft of its 190 series to Lufthansa. These modern, highly economically efficient and environmentally compatible aircraft are characterized above all by an exceedingly low fuel burn for a regional aircraft – a maximum of 3.9 liters of kerosene per 100 passenger kilometers, depending on distance and load factor. In addition, this aircraft type gains points for low emissions values and less noise emission.

Lufthansa CityLine will receive eleven E-195s and nine E-190s between September 2009 and the beginning of 2011. At the same time, the Lufthansa

subsidiary is decommissioning 35 smaller and older aircraft. Air Dolomiti started operations with five Embraer 195s during the reporting year. Furthermore, Eurowings is to receive the latest version of the CRJ900, which also consumes only about 4 liters of kerosene per 100 passenger kilometers.

The Lufthansa fleet comprised 722 aircraft on December 31, 2009. This includes the aircraft of the Lufthansa Passenger Airline, SWISS, Austrian Airlines, bmi, the regional partners Lufthansa CityLine, Air Dolomiti, Eurowings as well as Germanwings and Lufthansa Cargo.

Left:
Investment in the European fleet: SWISS is to receive the fuel-efficient aircraft of the CSeries by Bombardier.

Right:
Modernization of the regional fleet: an Embraer 195 of Air Dolomiti.

- 1 Aircraft in the Group's possession.
- 2 Aircraft operated by the Group.

Group fleet

on 31.12.2009

(changes compared with 2008)

	in possession ¹	age ¹	in operation ²	age ²
Lufthansa Passenger Airline (incl. Lufthansa Italia)	317 (+35)	11.8 (-1.2)	255 (+4)	13.0 (-0.1)
Lufthansa CityLine	70 (-3)	9.6 (+1.0)	68 (-4)	8.6 (+0.1)
Air Dolomiti	14 (±0)	9.4 (+1.0)	23 (+4)	7.4 (-3.7)
Augsburg Airways	0 (±0)		15 (+4)	5.4 (-2.6)
Contact Air	0 (±0)		13 (+2)	13.3 (+4.8)
Eurowings	23 (-13)	12.6 (-0.2)	35 (±0)	8.0 (-4.1)
Germanwings	26 (+1)	5.1 (+0.4)	26 (+1)	5.1 (+0.4)
SWISS	84 (-1)	10.7 (+0.9)	76 (-2)	10.8 (+0.5)
Austrian Airlines	102 –	11.0 –	93 –	11.1 –
bmi	67 –	9.1 –	68 –	9.2 –
Business segment Passenger Airline Group	703 (+188)		672 (+170)	
Lufthansa Cargo	19 (±0)	12.0 (+1.0)	16 (-3)	11.0 (±0.0)
Business segment Logistics	19		16	
Group	722 (+188)	10.8 (-0.5)	688 (+167)	10.7 (+0.5)

The operative fleet of the Lufthansa Group

Lufthansa Passenger Airline including Lufthansa Italia



LH: 32 aircraft, 127 seats, 2,500 km range

Boeing 737-300



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

Boeing 737-500



LH: 26 aircraft, 132 seats, 3,500 km range

Airbus A319-100



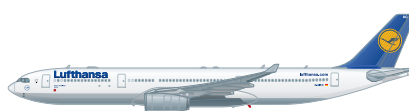
LH: 38 aircraft, 156 seats, 3,500 km range

Airbus A320-200



LH: 36 aircraft, 190 seats, 2,900/4,100 km range

Airbus A321-100/200



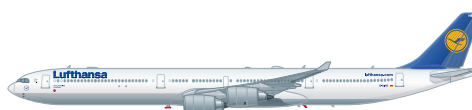
LH: 15 aircraft, 221 seats, 10,000 km range

Airbus A330-300



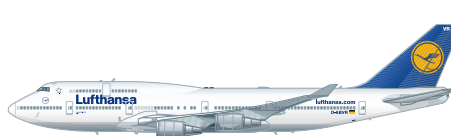
LH: 27 aircraft, 266/221 seats, 11,100/12,700 km range

Airbus A340-300



LH: 23 aircraft, 306 seats, 12,600 km range

Airbus A340-600



LH: 28 aircraft, 352 seats, 12,500 km range

Boeing 747-400

Lufthansa Regional



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

ATR42-500



C3: 1 aircraft, 68 seats, 900 km range
EN: 12 aircraft, 64 seats, 900 km range

ATR72-500



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

Avro RJ85

Legend

- 4U = Germanwings
- BD = bmi
- C3 = Contact Air
- CL = Lufthansa CityLine
- EN = Air Dolomiti
- EW = Eurowings
- IQ = Augsburg Airways
- LH = Lufthansa Passenger Airline,
Lufthansa Cargo
- LX = SWISS
- NG = Lauda Air
- OS = Austrian Airlines

Number of aircraft in operation on 31.12.2009.

Range indicated in general with maximum number of passengers or payload, respectively.

* maximum number of seats, different versions in operation.



EW: 2 aircraft, 92 seats, 1,600 km range

BAe 146-200



EW: 4 aircraft, 98 seats, 1,800 km range

BAe 146-300



CL: 13 aircraft, 50 seats, 2,000 km range
EW: 18 aircraft, 50 seats, 2,000 km range

CRJ200



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

CRJ700



CL: 12 aircraft, 86 seats, 2,000 km range
EW: 9 aircraft, 86 seats, 2,000 km range

CRJ900



IQ: 9 aircraft, 72 seats, 1,200 km range

DHC8-400



C3: 7 aircraft, 100 seats, 2,000 km range

Fokker 100



CL: 1 aircraft, 100 seats, 3,330 km range
IQ: 1 aircraft, 100 seats, 3,330 km range

Embraer 190



CL: 4 aircraft, 116 seats, 3,300 km range
EN: 5 aircraft, 116 seats, 3,300 km range
IQ: 5 aircraft, 116 seats, 3,300 km range

Embraer 195

SWISS



LX: 20 aircraft, 97 seats, 3,000 km range

Avro RJ100



LX: 7 aircraft, 138* seats, 3,000 km range

Airbus A319-100



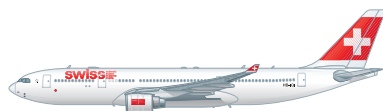
LX: 20 aircraft, 168* seats, 3,650 km range

Airbus A320-200



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

Airbus A321-100



LX: 5 aircraft, 230* seats, 8,400 km range

Airbus A330-200



LX: 4 aircraft, 236 seats, 8,400 km range

Airbus A330-300



LX: 14 aircraft, 228 seats, 10,500 km range

Airbus A340-300

Austrian Airlines



OS: 10 aircraft, 50 seats, 2,060 km range

CRJ200



OS: 9 aircraft, 50 seats, 1,085 km range

DHC8-300



OS: 11 aircraft, 72 seats, 1,630 km range

DHC8-400



OS: 9 aircraft, 80 seats, 2,085 km range

Fokker 70



OS: 15 aircraft, 100 seats, 2,000 km range

Fokker 100



OS: 1 aircraft, 111 seats, 2,220 km range

Boeing 737-600



NG: 1 aircraft, 132 seats, 4,440 km range
OS: 1 aircraft, 132 seats, 4,440 km range

Boeing 737-700



NG: 7 aircraft, 184 seats, 4,680 km range

Boeing 737-800



OS: 7 aircraft, 132 seats, 4,500 km range

Airbus A319-100



OS: 7 aircraft, 159* seats, 4,300 km range

Airbus A320-200



OS: 5 aircraft, 193 seats, 2,360/3,500 km range

Airbus A321-100/200



OS: 6 aircraft, 240* seats, 9,800 km range

Boeing 767-300



OS: 4 aircraft, 309* seats, 11,500 km range

Boeing 777-200

bmi



BD: 4 aircraft, 37 seats, 2,200 km range

Embraer RJ 135



BD: 13 aircraft, 49 seats, 2,800 km range

Embraer RJ 145



BD: 14 aircraft, 148 seats, 4,050 km range

Boeing 737-300



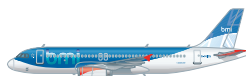
BD: 3 aircraft, 131 seats, 4,350 km range

Boeing 737-500



BD: 11 aircraft, 144* seats, 3,380 km range

Airbus A319-100



BD: 10 aircraft, 156* seats, 4,400 km range

Airbus A320-200



BD: 9 aircraft, 195* seats, 4,300 km range

Airbus A321-200



BD: 1 aircraft, 160 seats, 5,490 km range

Boeing 757-200



BD: 3 aircraft, 218 seats, 9,250 km range

Airbus A330-200

Germanwings



4U: 26 aircraft, 144* seats, 3,500 km range

Airbus A319-100

Lufthansa Cargo



LH: 16 aircraft, 516 m³/89,4t, 7,000 km range

Boeing MD-11F

Panorama

Personnel

Graduates in economics vote Lufthansa “most popular employer”

Lufthansa's attraction for university graduates in economics continues unabated: The aviation company managed to jump to first place in the “German Graduates Barometer 2009,” after taking fifth place on this popularity scale the year before. To gather these statistics, the Berlin-based consulting institute Trendence surveyed 18,000 students of economics or engineering science at 109 universities, shortly before they took their final exams. From a list of more than 100 companies, they were asked to select the ten employers they found most attractive or to add the names of other companies if they wished. Among future engineers, Lufthansa Technik achieved an excellent ninth place.



Personnel



Ten years of women flight captains at Lufthansa

At Lufthansa, women occupy leading positions not only on the ground but also in the air: For ten years now, women flight captains have assumed the responsibility for passengers. In 2000, Nicola Lisy became the first female flight captain to successfully make her way to the left-hand seat in the cockpit. She had already written company history in 1988 when she became Lufthansa's first female copilot. Today, 27 female pilots hold a captain's license and are thus authorized to command civil aircraft. Lufthansa supports its female pilots with a range of part-time work models to ensure the compatibility of work and family.

Society

Emergency relief for the earthquake victims in Haiti

The Lufthansa Group actively supported the international aid activities for the earthquake victims in Haiti: On January 25, 2010, Lufthansa Cargo sent an MD-11 freighter aircraft to the Caribbean. It carried 80 tonnes of aid supplies – primarily medication, food and technical equipment. Two further special flights operated at cost and carrying supplies donated by the METRO Group, followed in February and March. Moreover, the Lufthansa Executive Board, the Group's works council and the Joint Representation of Flying Personnel called upon all Lufthansa employees to donate working hours or money for Haiti. In addition to a total of 4,174 working hours, valued at about 100,000 euros, Lufthansa employees donated about 120,000 euros for emergency relief. And just like after the tsunami in southeast Asia in December 2004, the Group doubled the value of each working hour and each euro donated. All funds were passed on to the HelpAlliance, the help organization founded by Lufthansa employees.

Catering/Environment

Development of lightweight trolleys: LSG Sky Chefs Catering Logistics cooperates with Canadian specialist

The heavier an aircraft's weight, the higher its kerosene consumption and related CO₂ emissions. Therefore, LSG Sky Chefs Catering Logistics (LCL) consistently seizes any opportunity to reduce the weight of the trolleys used for the meal and beverage service on board by employing more lightweight materials. For this purpose, the company belonging to LSG Lufthansa Service Holding AG signed a cooperative agreement in May 2009 with the Canadian composite-materials specialist Nordduyn. The focus of this cooperation will be the development and marketing of lightweight trolleys, which weigh 40 percent less than the models currently in use. The advantage: By equipping a fully-loaded Boeing 747-400 with trolleys constructed with lightweight materials, a total of about 850 kilos can be saved.

Logistics/Environment

Dialogue and recognition play an important role at Lufthansa Cargo

On February 26, 2009 more than 160 guests participated in the first “Cargo Climate Care Conference” organized by Lufthansa Cargo in Frankfurt. Customers and employees of Lufthansa and Lufthansa Cargo together with representatives from science, business and politics discussed technical options, sustainable perspectives and optimization potentials in the logistics industry. Among the speakers were experts from the IATA, the DLR, the companies Kühne+Nagel, Nokia and Air BP, as well as Germany's Federal Ministry of the Environment and Deutsche Umwelthilfe. “With this environmental conference, we have proven that even in economically difficult times environmental and climate protection are not mere lip service but rather living corporate culture at Lufthansa Cargo,” said Karl-Heinz Köpfle, the Board member responsible for Operations at Lufthansa Cargo. In the framework of the environmental conference, the logistics company presented the “Cargo Climate Care Awards” to customers, employees, university students and promising young researchers, all of whom are particularly committed to environmental care. “This initiative is meant not only to advance our industry's efforts to protect the climate but also to generate new impulses and fresh ideas to reduce emissions,” explained Carsten Spohr, CEO and Chairman of Lufthansa Cargo. The next conference and award presentation are planned for 2011.



Social responsibility

Employees

Employee Feedback Management

Equal opportunities

Diversity

Ideas management

Work-life balance

Training and continuing education

Employee safety and health protection

Employment policy based on partnership

HR management

Diversity

Diversity is increasing – opportunities are rising

Diversity at the Lufthansa Group continues to grow – not least due to the acquisition of additional international airlines. This increases the demands on the cultural competencies of employees and on HR management in equal measure. Owing to many years of experience, this accumulated heterogeneity increases the opportunities for innovations and thus the optimum customer advantage.

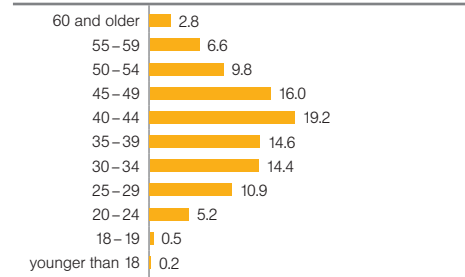
Companies with a diverse employee structure are better able to manage the increasing individualization of products, heterogeneity of customers, and demands of globalization. In addition, not only do the continuing shifts in demographics require new human resource concepts. It is also necessary to adhere to legal guidelines, which differ in part from region to region.

Distinguishing characteristics such as gender, age, skin color, religion, sexual orientation and disability do not play a role in the personnel selection process. Such decisions are based exclusively on professional and social aptitude.

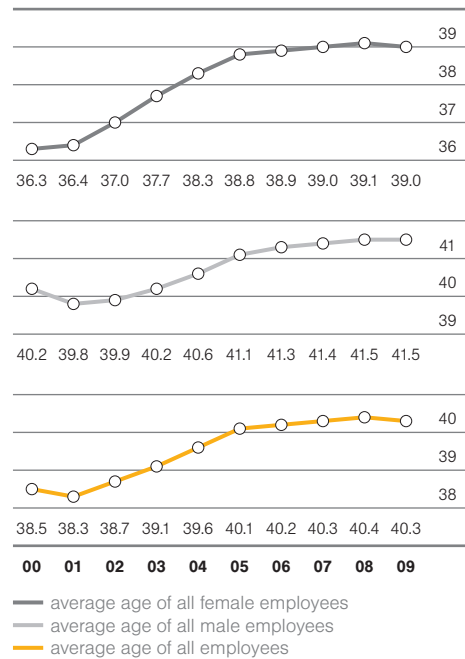
Demographic management

Lufthansa began adapting to the effects of demographic change early on. The company has tackled the challenges that differ by business segment and country in a decentralized manner, developed concepts for solutions and already implemented

Age structure at the Lufthansa Group¹
2009, distribution in percent



Average age at the Lufthansa Group¹
in years



¹ Scope of consolidation partly excluding LSG outside Germany, Lufthansa Malta Holding Ltd., Lufthansa Malta Aircraft Leasing, Lufthansa Technik North America Holding Corp., Lufthansa Technik Airmotive Ireland Ltd., BizJet International Sales & Support Inc., Hawker Pacific Aerospace Inc. (USA), Hawker Pacific Aerospace Ltd. (GB), Lufthansa Technik Philippines Inc., Shannon Aerospace Ltd., AirLiance Materials LLC, AirPlus Air Travel Card Vertriebsgesellschaft mbH, Lufthansa Malta Finance plc.

these in large part. With a nearly unchanged average age of 40.3 years across the Group since 2008, the action areas Qualification and Health Care Management remain focal points of demographic management. All the activities for qualification – whether they are operationally necessary or multi-disciplinary – are designed to maintain employability. It is especially important that long-serving employees remain part of the learning process.

With regard to health care, it makes sense to differentiate according to type of professional burden, which is why the individual business segments and areas set varying accents here as well. The Group's health-care managers regularly exchange

“Including all employees with their entire potential is perfectly natural for Lufthansa and now more important than ever, especially given the increasing level of internationality due to the newly-consolidated airlines.”



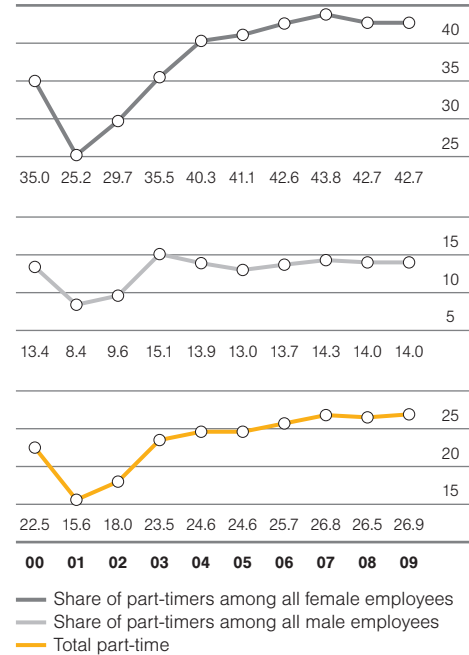
Monika Rühl
Director Change Management and Diversity at Lufthansa

information about their activities and about new insights. Supported by the company's specific offers, health campaign days or weeks for relevant groups of employees nurture a growing awareness of the need to take responsibility for one's own health.

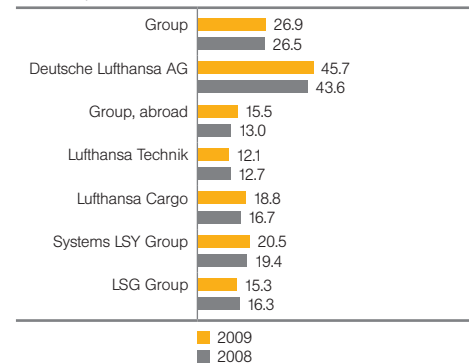
Work-life balance

Lufthansa promotes numerous measures aimed at maintaining qualifications despite parenthood and supporting the private desire to found or enlarge a family. A broad range of working time formats, involving the duration and the time of day of working hours, helps accommodate the care of children as well as of older relatives in need of support. Whenever adapting working hours is not a sufficient solution, there is the option to organize care with help from the Family Service or other service providers. Child care at short notice at 12 German locations, various vacation offers and a growing number of company-supported day nurseries (currently in Frankfurt and Wiesbaden) allow an earlier return to work for mothers and fathers following parental leave.

Part-time employment at the Lufthansa Group
in percent



Part-time work by Group companies
2009, in percent



The balance between work and private life also includes activities that are designed to counter-balance professional activities. In this area, the preferences are highly individual and therefore cannot all be covered by company offers. For the athletically inclined, there are Lufthansa associations for 62 different sports. A total of about 11,000 Lufthansa employees, retirees and external members are active in 15 associations. But there are also other options for exercise, such as the initiatives “Lufthanseaten laufen!” (Lufthansa employees run), “Bike2FRA” and “by bicycle to HAM.”

Gender

Executive personnel at Lufthansa include both managerial employees assigned to defined management levels and also those employees below this level who assume responsibility for staff. Among executive personnel (managerial employees), the share of women is 14.7 percent. Among corporate managers with staff responsibility, the share of women is 41.5 percent. Among all employees, the total share of women is 45.1 percent. To further increase these shares, the company has participated in a cross-mentoring program that was initiated by Lufthansa in 1998. The company also promotes the expansion of internal social networks. To make girls and young women more

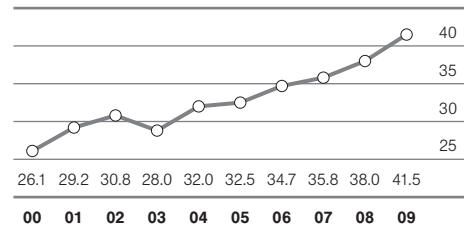
familiar with classic "male professions," the Group is committed to the annual German-wide "Girls' Day."

→ www.girls-day.de

Among pilots, the fundamental trend toward an increasing share of women remains unchanged. However, the relative share for 2009 declined slightly from the previous year, from 4.9 to 4.7 percent. This is due to changes in the basis of calculation (the Group's scope of consolidation) as new airlines have been integrated. It is therefore a statistical effect.

With regard to remuneration, there have been no gender-based distinctions at Lufthansa since the early 1970s. For employees covered by collective bargaining, the respective agreements ensure equal pay for equal work. While remuneration is individually negotiated for employees outside of collective bargaining agreements, Lufthansa closely monitors that the only differentiation parameters are experience and the scope of responsibility with regard to number of employees, budget and task relevance. Gender, age and cultural background are irrelevant for remuneration.

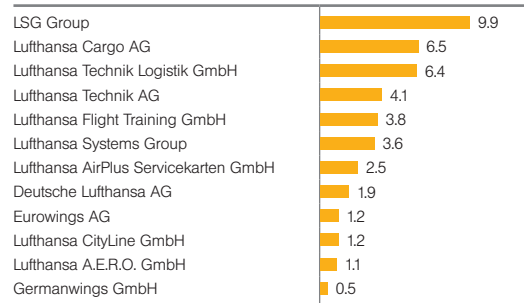
Women in management positions with staff responsibility at the Lufthansa Group¹
in percent



Women in management positions at the Lufthansa Group²
in percent



Disabled people at the Lufthansa Group in Germany³
2009, distribution in percent



Integration of people with disabilities

Deutsche Lufthansa AG offers numerous jobs for people with physical disabilities. Currently, 3.4 percent of all employees in Germany have a disability. Disabilities do not equate with a reduced ability to perform when compared with other employees. Often they do not play a role in a concrete job setting, and there are even cases where a limitation produces particular strengths that can be put to use for the company. To give young people with disabilities positive professional perspectives, Lufthansa organizes an Integration Day once a year. It takes place on the occasion of the "International Day of People with Disabilities" and informs participants about training options and job openings at the Lufthansa Group. In December 2009, 36 pupils of the Weißfrauenschule in Frankfurt visited Lufthansa and gained insights into different areas of the Group.

¹ Scope of consolidation excluding Lufthansa CityLine, Lufthansa Technik AERO Alzey GmbH, Lufthansa AirPlus Servicekarten GmbH, LSG outside of Germany, Lufthansa Systems AS GmbH, Eurowings Luftverkehrs AG, Germanwings GmbH, Air Dolomiti S.p.A., Swiss International Air Lines AG, Austrian Airlines AG, Tyrolean Airways Tiroler Luftfahrt GmbH, Lauda Air Luftfahrt GmbH, TRAVIAUSTRIA Datenservice für Reise und Touristik Gesellschaft m.b.H. & Co NFG. KG, Lufthansa Flight Training Berlin GmbH, Miles & More International GmbH, British Midland Airways Ltd., Lufthansa Italia S.p.A., Lufthansa Technik Switzerland GmbH.
² Only Deutsche Lufthansa AG, Lufthansa Cargo AG, Lufthansa Technik AG, Lufthansa Systems AG, Lufthansa Flight Training GmbH, LSG Sky Chefs, Lufthansa CityLine.
³ Share of people with significant disabilities at the consolidated companies in Germany: estimated values, based on analyses as per 31.12.2009. Final figures will be determined by Landschaftsverband Rheinland in fall 2010.

HR management

In a large, highly diversified and decentralized group such as Lufthansa, there are a number of top-priority personnel issues that must be handled and coordinated jointly. Depending on the scope of responsibility, various forums exist expressly for this purpose.

Within the Lufthansa Group, HR management is represented by Stefan Lauer. He is a member of the Executive Board and is the Chief Officer Group Airlines and Corporate Human Resources. He is also the Labor Relations Director at Deutsche Lufthansa AG.

The legally independent business segments each have their own respective labor relations directors. The consolidated airlines with headquarters abroad have representatives responsible for personnel in accordance with the legal requirements of their home countries. For the Lufthansa Passenger Airlines, the HR function is headed by the Executive Board member in charge of Finance and Human Resources.

The discussion of general HR issues takes place in the HR Board. Meeting at regular intervals, this coordination round also includes the highest-ranking HR managers at the Group airlines.

The coordination of HR topics such as policies concerning staff, management or collective bargaining agreements for the employees mostly working in Germany takes place at shorter intervals in the framework of the HR Management Day (HMD), which meets every six weeks. Beyond the HMD, the personnel managers of foreign organizational units and those managers in Germany responsible for international personnel issues meet twice a year within the HR Management Circle International (HMCI). This offers specific opportunities for communication and coordination of topics that are relevant for locations abroad. Beyond this, all HR managers have the opportunity several times a year to examine all operative issues in the context of the HR Management Forum (HMF).

The exchange of information between personnel managers increasingly takes place virtually, using Lufthansa's internal Web-2.0 technologies.

In addition, the individual Group companies have their own HR forums to coordinate the specific issues that are relevant for them. These structures are determined by the respective requirements.

Corporate Executive Development

At the Lufthansa Group, leadership competency and continuous education of managerial staff have great importance. Transparency, credibility and fairness are the center of gravity in all management models.

Sustainability in management is an important concern for Lufthansa. This is understood as long-term oriented ways of thinking and acting with the goal of recruiting, developing and retaining employees in ways that simultaneously balance social responsibility and economic soundness.

HR management platforms across business segments to coordinate personnel-relevant topics at the Lufthansa Group

HR Board

Chairman: Chief Officer Group Airlines and Corporate Human Resources
Labor Relations Directors/Members of Executive Boards in charge of personnel within Group and HR heads of corporate functions

HMD – HR Management Day

Chairman: Senior Vice President Executive Personnel, Head of Corporate Executives and Chairman of the Aviation Employers' Association.

Heads of Personnel of Lufthansa business segments and selected corporate functions

HMCI – HR Management Circle International

Chairman: Director Corporate Principles Personnel Policy

HR heads of all Lufthansa companies abroad and HR corporate functions concerning issues relevant abroad

HMF – HR Management Forum

Chairman: Director Corporate Principles Personnel Policy

HR heads of all Lufthansa companies and HR corporate functions

HMX – HR Management Experts

Chairman: manager responsible for respective issue

Diverse topic-related forums that include affected Group companies; e.g. worktime, education, demographics, health-care management, personnel development, etc.

Providing leadership for employees is one of the essential tasks of any supervisor, regardless of his or her hierarchical level. The interaction between manager and employees is one of the decisive levers in the process of achieving the company's goals.

With the extension of the portfolio of the Lufthansa Group to include additional international airlines, the Lufthansa Leadership Compass (LLC) was replaced by an advanced development, the Aviation Leadership Compass (ALC). This competence model comprises the following dimensions: Entrepreneurial Leadership, Problem Solving, Communication and Persuasion, Leading People, Attitude and Drive, and Functional Competence.

The ALC is the basis for many processes and instruments of managerial staff development. Depending on the target group and the context, the criteria are translated into the 360-degree feedback, the management diagnostics or the Corporate Management Grading (CMG) for executives.

Every year, managerial staff are evaluated by their supervisors, using the CMG to assess their performance and their potential. Recommendations for the next development steps are derived from this. They include possible rotations, "job families" and appropriate managerial levels.

The CMG also identifies employees with outstanding performance and potential, who can then choose to follow a development path, the Development Center Track, culminating in an aptitude test and assessment for a managerial assignment.

Interlinking these instruments closely generates sustainability and consistent orientation in leadership tasks. At the beginning of the year, all managerial staff formulate a goal agreement with their supervisors that must be fulfilled by year-end. The variable remuneration components depend not only on the achievement of individual goals but also on the annual results of the company and business segment. In management, one goal always refers to the leadership or development of the employees.

Moreover, the variable remuneration system for managerial staff is long-term oriented and dependent on the company's added cash value and the development of its share price – also in compari-

son with selected competitors. Against the background of social responsibility, Lufthansa offers all employees a comprehensive package of insurance and retirement benefits, which are differentiated according to country-specific conditions and regulations.

Employment policy based on partnership

Tried-and-tested crisis management

In terms of human resources the year 2009 was also defined by the integration of the new Group airlines and the effects of the global financial crisis. The initiatives underway in all Group companies to safeguard against these effects also meant cut-backs in areas affecting staff.

Social responsibility even in times of crisis

The latest world economic crisis has demonstrated impressively the kind of problems entrepreneurial activities can cause when they are guided by short-term and one-sided goals. Sustainable business activities would have produced different results. Considering the long-term, social and ecological effects in business life is not some sort of romantic cover, but an essential part of a company's work and its success.

Lufthansa has always considered these activities as an integral part of its entrepreneurial tasks. This is evidenced not only by our ecological efforts but also by our manifold initiatives in the social environment. Numerous activities illustrate this commitment, including the traditional Lufthansa staff support organization, the child-care options developed over the past years, the aid provided by the HelpAlliance or the broad range of interdisciplinary educational offers within the Group. Pure "business" issues and other subjects are always mutually conditional in this context. Socially responsible efforts at Lufthansa always make sense business-wise as well; by extension, they are naturally viable only in the context of our company's success. This ensures their long-range perspective, which also makes them sustainable in the narrower sense.

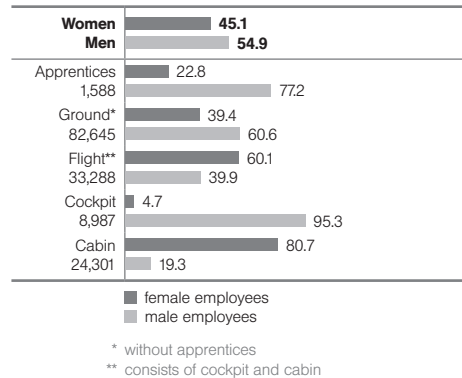


Dr. Martin Schmitt, Senior Vice President Executive Personnel at Lufthansa

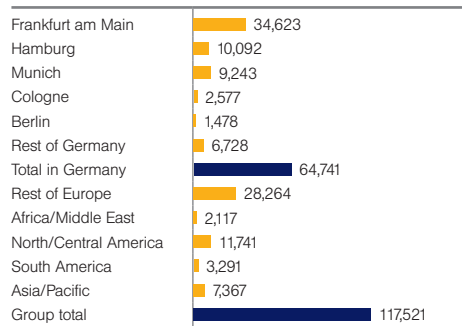
Distribution of employees within the Lufthansa Group
as at 31.12. respectively, changes in percent

	2009	2008	change
Group employees	117,521	107,800	+ 9.0
of which Passenger Airline Group ¹	58,083	46,350	+25.3
of which Logistics	4,488	4,655	-3.6
of which MRO	19,796	19,804	±0.0
of which IT Services	3,027	3,033	-0.2
of which Catering	28,390	30,273	-6.2
of which Other ¹	3,737	3,685	+ 1.4

Employees by group and gender
2009, in percent



Lufthansa Group: Jobs around the world
2009



Restructurings due to operational needs cannot always be avoided. To make their effects as socially tolerable as possible for the employees affected, Lufthansa has used the placement service “JobChange” for many years in Germany. It addresses colleagues who are looking for a new professional perspective within the Group following such structural changes. “JobChange” is characterized by straightforward control processes and a high degree of flexibility in finding a new, adequate job.

Should workforce adaptations be necessary for operational reasons, Lufthansa follows the tried-and-tested principle of limiting the negative effects on employees as much as possible. In addition to a general hiring freeze, measures that help in coping with a crisis include increasing the share of part-time work, offering unpaid special leave, and using the instruments of partial early retirement and the flexible internal job market (“JobChange”). The latter measure has proved especially successful owing to the cyclical differences between business segments, which enable employees to remain with the Group. This approach was applied effectively in the crisis years 1992/1993, 2001 and 2003/2004. Unfortunately, it was not entirely possible in 2009 to avoid layoffs due to operational requirements. However, the effects of these layoffs were moderated by applying the respective framework of legal conditions, such as redundancy schemes.

Lufthansa is aware of the responsibility it bears not only for its customers, the environment and society but also to a high degree for the people who have entrusted their professional capacities to the company. Our employees, in particular, are important pillars of the company’s culture and thus decisive for its success.

¹ Group functions have been transferred from the Passenger Airline Group to Other (IFRS 8). Value of previous year adapted.

Information, consultation and participation in company decisions

It is tried-and-tested company policy to clarify divergent interests between management and employee representations in an open and transparent manner. A fair way of getting along together in all areas creates the necessary balance to advance the Lufthansa Group's position in the market. The increasing plurality of opinions and opinion leadership – analogous to developments in society as a whole – presents an increasing challenge for all parties concerned. The main guidelines for shared efforts are flexibility and the ability to react in the marketplace.

Partnership in collective bargaining in Germany

Lufthansa employs its staff under conditions that provide them with social and material security not only during their professional lives but also afterwards. The basis for this are the collective agreements which the company negotiates with its union partners Vereinte Dienstleistungsgewerkschaft (ver.di), Vereinigung Cockpit (VC) and Unabhängige Flugbegleiter Organisation e. V. (UFO). The goal is to treat all employee groups across the Group fairly and justly – a standard that is faced with a challenging framework of conditions owing to the plurality of unions within the company. For example, it was possible only after

several warning strikes in spring 2009 to conclude equivalent collective agreements on pay and working conditions for cabin crews with the unions UFO and ver.di. This ensured that all cabin employees work under the same conditions and that equal treatment vis-à-vis other employee groups is guaranteed. To date, it has always been possible to bring even difficult pay disputes to a compromise solution.

Active pay and social policies abroad as well

Internationalization and globalization offer numerous opportunities for the business and personnel processes within the Group. As a company with international activities, Lufthansa orients its pay and social policies toward the prevailing conditions in the individual countries. The primary consideration is the long-term definition of employment conditions, which is geared to employee needs, operational requirements and the local employment market. This includes remuneration rules, working conditions and social benefit systems.

By signing the UN Global Compact, Lufthansa has documented that it upholds the freedom of association and recognizes the right to collective bargaining for all its employees worldwide. Employees can organize themselves within the legal frame-

Human rights according to the UN Charter of 1948

With its memberships in the UN Global Compact (since 2002), in the International Chamber of Commerce (since 1955), in Transparency International (since 1999), in Deutsches Netzwerk Wirtschaftsethik (since 1998) and in institutions that work for individual aspects of human rights, Lufthansa explicitly affirms adherence to respective norms and thus also to human rights. Lufthansa's home country, Germany, signed the adherence to the ILO norms in 1951, thereby making these regulations – which are self-evident for our Group – binding for Lufthansa as well.

In countries where the acceptance of human rights does not appear self-evident, Lufthansa tries to set accents that contribute to a positive development in the respective countries by exercising exemplary conduct vis-à-vis its own employees. While the realization of the human rights formulated in the UN Charter is a task of national and thus country-specific norms, Lufthansa contributes to the following rights by treating its employees in an exemplary fashion:

- the rights to freedom of association and to collective bargaining
- the right to social security
- the rights to work, to free choice of occupation, to just and favorable working conditions, to equal pay for equal work, to legal justice, and to form trade unions
- the right to rest and leisure, including periodic holidays with pay
- the right to a standard of living that helps maintain health
- the right to education and to free choice of type of education

Working, holiday and remuneration conditions are defined for the most part collectively and always transparently by adhering to all national and legal requirements. Corporate leadership and employee orientation are reflected in the company's excellent worldwide reputation as an employer. Thus, the Group helps its employees to lead a life in the sense of the norms defined by the UN Charter concerning employment relationships.

work of any country where Lufthansa companies are active and thus participate in shaping their working conditions.

Employee Feedback Management

Individual Group companies conduct employee surveys at regular intervals in order to gain insights into commitment, engagement and other aspects of employee satisfaction. The last survey at the Lufthansa Passenger Airlines including the corporate functions, the Employee Feedback Management (EFM), took place in 2008. Six different questionnaires, which were adapted to the requirements and special circumstances of the job groups involved, were employed. They covered the basic aspects "Job and working environment," "Information and communication," "Learning and innovation," "Cooperation and leadership," "Corporate leadership" and "Error and learning culture at Lufthansa." One of the survey's goals is to give supervisors with five or more subordinates detailed feedback on how their staff evaluate their leadership performance. This feedback serves as the basis for the dialogue within the company.

Participation in the survey is voluntary and anonymous. An external institute is responsible for analyzing the questionnaires. As the employees of the Lufthansa Passenger Airlines were surveyed for the sixth time, deviations from the previous survey allowed conclusions to be drawn particularly regarding those areas in need of action. As a result, the latest survey generated a store of more than 600 measures for improvements. This makes the EFM more than merely a barometer of prevailing moods. It is also an instrument that serves to initiate changes and improvement in the company and to support the steady development of quality.

Overall, satisfaction had increased since the previous survey. Potentials for improvements were shown in a number of specific areas, including "Communication and information" and "Cooperation." Consequently, these are to be strengthened through target measures. For example, at Lufthansa Passenger Airlines, the division with the highest number of employees, a new dialogue series called "Service Dialogue" now takes place between management representatives and employees. Twice a month, about one hundred employees discuss the company's economic situation with management representatives in an open and informative manner. The goal is to

Lufthansa Aviation Center at Frankfurt Airport: A large part of the working areas are team or group rooms.



develop a shared understanding of the challenges that must be coped with. The motto here is to talk to, not about each other.

Further measures included supporting employees in specific areas through work shadowing. In the subject area "Error and learning culture," measures such as workshops on improving cooperation, regular feedback rounds and coachings were initiated. Within the operating units, these show a positive effect on the "kaizen" programs, in which joint efforts for quality improvements are bundled. The first improvements in areas such as punctuality and baggage handling have become visible.



Training and continuing education

Rapidly changing market conditions and demographic shifts in society place ever-increasing demands on corporate training and continuing education. To ensure that employees and managers are able to keep up with this tempo, Lufthansa offers numerous options for obtaining qualifications and continuing education.

There are three pillars in the area of education, each with a different responsibility: apprenticeships, operations-stipulated qualifications and continuing education. The latter can take place (in part) during working hours when initiated by the company or as part of voluntary continuing education.

The apprentices at the Lufthansa Group can be assigned to one of two training models: the classic dual apprenticeship and the combined work-study degree courses. Last year, Lufthansa counted 1,227 apprentices in the classic apprenticeship model in Germany, while there were 307 students in the bachelor program at the Lufthansa Group. Even after an apprenticeship has been completed, the Group offers its employees a wide range of options for obtaining further qualifications. An example is the study support program “destinationBACHELOR” at Lufthansa Technik. It offers apprentices with superior achievements stipends to cover tuition at selected universities and part-time contracts that make it possible to combine work and university study.

Operations-stipulated qualifications range as broadly as the professions and activities throughout the company. Many of these qualifications are obtained decentrally at the respec-

tive Group companies. Learning contents include knowledge to obtain licenses (e.g. for cabin staff and technicians), current professional knowledge and legal requirements. In addition, certain parts of competency extension, such as communication behavior (e.g. “human-factor” training for pilots), are carried out by attending courses during working hours.

Interdisciplinary trainings, especially those involving “soft-skills” content, take place as part of both operations-stipulated and voluntary continuing education. Employees participate in these by investing their time and sometimes a small amount of money as well. In 2009, one area of emphasis in voluntary continuing education were health-related trainings, workshops and informational events covering healthy nutrition, ergonomics on the job, work-life balance, yoga and much more.

Further topics in the area of interdisciplinary learning were leadership, business administration, aviation, change management, intercultural competence, IT, conflict management, communication, human resources management, personal development, project management, law, social and media competence, foreign languages and knowledge transfer.

The Lufthansa School of Business organizes and carries out a large part of the global, high-priority qualification measures, for junior, senior and executive employees within the Group.

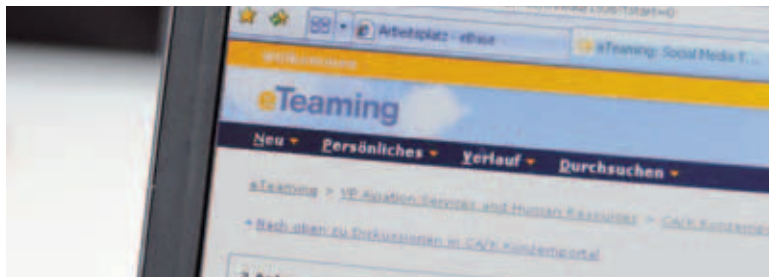
For management qualifications, Lufthansa relies strongly on its cooperation with selected partners: renowned business schools with international rankings. The School of Business sees to it that these programs correspond equally to the strategic needs of the company and the professional development needs of its managers and employees.

Increasingly, eTraining and online training complement attended courses. Not only do they allow individual time management and learning speed, but they also contribute to the economic efficiency of the investment in education. In this way, subjects such as data projection, job safety, compliance, discrimination avoidance and human rights can be made accessible to a broad range of employees.

→ www.Be-Lufthansa.com

Lufthansa continues to spend significant amounts on qualification measures. In 2009, comprehensive training measures were carried out, despite the world economic crisis. Overall, the internal education budget declined by a mere 7 percent to 99 million euros.

Participation in qualification measures is determined exclusively by operational and professional criteria. Age, gender, cultural background, disability and sexual orientation do not play a role in selecting participants.



eTeaming – The internal Lufthansa Web-2.0 application

With eTeaming, a Group-wide platform for communication and cooperation has existed since 2009. It allows a more efficient way of planning, coordinating and discussing topics. This application offers worldwide discussion forums as well as blogs that keep employees and managers up to date. In addition, employees at different locations can work together on the same documents, and surveys can be carried out quickly and easily to generate a snapshot of opinion. Moreover, experts can get in touch with each other by means of profiles and a contact function.

Lufthansa employees also have the possibility of using eTeaming to address the issues or solve the challenges of everyday life (e.g. sports, child care, etc.). After just a short introductory phase, there are already 690 groups who exchange information via this platform. The topics concern both professional and private interests, such as exchanges of roster assignments, worldwide project cooperation or vacation tips.

Ideas management

“Lufthansa Impulse”: Always good for a new idea

To unearth the treasures hiding in the heads of our employees – that is the declared goal of the Group-wide ideas management platform “Lufthansa Impulse.” In 2009, the influx of suggestions for improvement continued unabated: Just under 4,500 employees submitted about 3,500 ideas, thus significantly exceeding the good result of 2,916 the year before. “Because so many of our employees participated in ideas and innovation management, we were able to realize cost savings of 8.5 million euros,” says Wolfgang Servay, Head of Corporate Idea and Innovation Management. As in previous years, the overwhelming majority of these employees used the intranet in 2009 to submit their ideas; compared with the previous year, the online ratio increased from 88 to 92.1 percent.

The employees’ imaginativeness produced valuable ideas not only for improving procedures concerning the maintenance and overhaul of aircraft but also for protecting the environment: This included a suggestion to modify the on-board loading of catering on Airbus A320s and A321s so that the in-flight meals take up less space and weigh less. The employees of Lufthansa Technik once again contributed the highest number of ideas.

Targeted idea campaigns, which aim to develop solutions for concrete problems in cooperation with specific departments, did not take place in 2009. The reason: “The increase in suggestions for improvements was such that the departments had enough ‘material’ to advance the development of their products and processes,” explains Servay. Accordingly, his department was able to focus on supporting the departments in this task by optimizing the intranet-supported idea portal, reporting and monitoring.

Separate Internet platform for “Impulse International”

Pursuing the goal of including employees outside of Germany in the Group’s ideas and innovation management as well, Lufthansa set up “Impulse International” in 2008. The company gained initial experiences in the area of station management in Chicago, the distribution organization in England and at the stations in Spain and Portugal. These pilot regions provided important insights for the further qualitative development of this strategic instrument. As a result, the English-language offshoot of “Impulse” has been online since April 2009 with its own Internet platform, specifically designed for employees at Lufthansa’s organizations abroad. “Impulse International” forms the basis by which the new Group companies can also include their employees actively in a process of continuous improvement without having to set up their own resources. This tool thus makes an important contribution to the expansion of the Group’s networking abilities. In the spirit of “open innovation,” these companies are to exchange new ideas among themselves as well. In this way, the innovation potential available within the Group can be tapped comprehensively. “I’m convinced that we can learn just as much from the ‘new ones’ as they can from us,” adds Servay.

Giving credit where credit is due: The Lufthansa Innovation Award

Good ideas help to secure the future of the Lufthansa Group. To honor the authors and supporters of such flashes of inspiration appropriately, the Group presented the Lufthansa Innovation Award for the third time in November 2009. The prize was presented in Hamburg in the context

of “Impulse Expert Events” for three categories: “Particularly high utility,” “Best idea elaboration” and “Best idea factory.” The prize for best idea factory went to the department VIP & Executive Jet Solutions at Lufthansa Technik AG, which has advanced the topic of ideas management the furthest in its area.

Employee safety and health protection

Protecting the health of all employees within the Lufthansa Group is of particular importance. Prevention and processes based on hazard analyses contribute significantly toward achieving this goal. The prerequisite for sustainable success is above all work processes that are designed in a thought-out, safe and hazard-free fashion and that allow each employee the necessary scope for ambitious improvements to the products and services in his or her sphere of influence. On the other hand, Lufthansa is careful not to overly strain the permanently disposable commitment and flexibility of its employees.

In Germany, Lufthansa maintains its own Medical Service, which looks after the occupational, aviation and tropical medical care at the locations in Frankfurt, Hamburg and Munich. A separate branch looks after occupational safety. Employees working abroad and flight crew members can use the services of contract physicians worldwide. These contract physicians meet once every four years on average to exchange their experiences.

Regular special events such as vaccination days, skin screening, cardiovascular campaigns and much more offer employees the opportunity to take an active part in prevention. In addition, managerial staff and other employees paid outside of collective pay agreements can have a “manager’s checkup” every two years.





The year 2009 was characterized among other things by the threat of an H1N1 pandemic, which meant that the Group in general and the airlines in particular had to adapt to this situation. In such a case, hygiene aboard aircraft plays a decisive role. Occupational Safety, Occupational Medicine and several other departments investigated and optimized the hygienic conditions aboard aircraft. Additionally, flight attendants had the opportunity for a week in January to familiarize themselves under expert guidance at a product stand with the topics of hand hygiene, hygiene in the context of passengers and hygiene in service. As part of the improvements made in this area, a new chapter exclusively dedicated to hygiene-related topics will be published in the Cabin Service Manual.

In Germany, there is an exchange of information on general and specific health issues between the health-care managers within the Group. Even if the burden on different occupational groups varies, preventative practices at one company can still be transposed to another one. Most Group companies carry out special health days or weeks at annual or even shorter intervals. These serve above all to augment the employees' awareness that they are responsible for their own health. This is true for regular checkups, ergonomically correct work positions, exercise and nutrition. The Lufthansa cafeterias not only offer meals with a variety of tastes but also feature one or two

nutritious, low-calorie menus in addition to an extensive salad bar for health- and calorie-conscious diners.

Exercise plays an important role for Lufthansa employees. Beyond the Lufthansa sports associations, there are also special campaigns to make sports more attractive as a means to compensate for sedentary work. As the "Airline of Sports," Lufthansa is not only committed externally to large-scale sports events. Through its internal initiative "Lufthanseaten laufen!" the company also aims at inciting as many of its staff as possible to start exercising and to begin by running.

Launch of the campaign "Lufthanseaten laufen!"

Lufthansa supports not only top-level sports (see article "Lufthansa – Airline of Sports" on page 79) but also its employees' penchant for running. As a contribution to maintaining staff health, the company launched the campaign "Lufthanseaten laufen!" (Lufthansa employees run) in 2009: Enthusiasts and would-be enthusiasts of running sports received comprehensive information about possibilities and prerequisites for a smart way of getting into running on March 26, 2009 at the Lufthansa Aviation Center in Frankfurt. The campaign's success was demonstrated not least by the record participation in the intercompany run "JP Morgan Chase Corporate Challenge" in Frankfurt: 1,285 Lufthansa employees were at the starting line on June 17, 2009 – more than ever before.



Should employees be sick for more than six weeks within a 12-month period, they can participate in an internal, voluntary reinsertment management at German locations. It aims at reestablishing or maintaining health. Among other things, it is suited to finding a (new) assignment matching the employees' qualifications. At foreign locations as well, prevention enjoys great importance and is adapted to local customs.

In the area of work safety, the regular inspections of the workplace offer an opportunity to identify and eliminate sources of hazards early on. Depending on the depth of legal regulations – and often exceeding these – Lufthansa assumes responsibility for the physical safety of its employees. Consequently, accidents occur only rarely, and most of those on the way to or from work – off company premises.

Excellent quality: LZ-Catering receives "JOB&FIT" certificate

On August 21, 2009, LZ-Catering GmbH received the "JOB&FIT" certificate of Deutsche Gesellschaft für Ernährung (DGE, German Society for Nutrition). This gives the wholly-owned Lufthansa subsidiary written proof that the company restaurant it runs at the Lufthansa administration building inaugurated at the end of 2007 in Cologne meets exemplary quality standards. DGE awards the "JOB&FIT" logo to honor those companies that meet the guidelines for nutritionally balanced food offers and careful meal preparation and that inform their employees in detail about healthy nutrition. The award was presented by Ilse Aigner, Federal Minister for Food, Agriculture and Consumer Protection. Another certificate was awarded to the employee restaurant at Lufthansa Technik in Norderstedt, also operated by LZ-Catering.

Facts 2009 and outlook 2010 (selection)

Area	Facts 2009	Outlook 2010
Training	Training programs continued despite difficult economic situation, dual courses of study implemented at additional locations. New apprenticeship positions offered. Growth plan not implemented due to economic crisis, few hirings in operations-related occupations (above all passenger services and flight attendants) from the external market. In 2009, 400 ground employees (check-in) switched to the cabin.	Offer openings for apprentices in 2010 as well, despite the economic crisis. Continue to develop training offers according to current requirements. New hirings of flight attendants likely to operate the A380.
Continuing education	Continuing education offer maintained at high level.	Cover "industry change" in continuing education. Continue integration of employees at network partners in LHSB programs. Optimize curricula.
Employability	Lifelong learning anchored more deeply in corporate culture.	Expand offers in open programs. Strengthen further learning platforms.
Employee safety and health protection	M.O.B.I.L.I.S. introduced, health weeks organized, sports associations supported. Work safety maintained at high level and developed further.	Increase awareness of individual responsibility among employees. Carry out health programs. Maintain work safety programs.
Demographic change	Health as a focal topic covered in continuing education. Group companies implement business-specific measures.	Continue to accompany issue.
Diversity	Integration day for young people with disabilities carried out. Share of women in management positions again slightly increased. Additional care infrastructure for children of employees offered.	Promote more women to managerial positions. Further develop age neutrality. Further increase intercultural competencies. Increase understanding for cultural differences at new Group airlines.
Dialogue with employees	Employee dialogues (Town Meetings, etc.) carried out. Results of Employee Management Feedback partially implemented.	Expand the network and dialogue forums. Intensify employee dialogue. Use proactive communications.
Dialogue with social partners	Local and global dialogue with social partners continued to increase understanding of respective positions. Not only at the EU level, but also worldwide in about 75 countries (including Nigeria, Ghana, Ethiopia, Mexico, Asia).	Continue dialogue with social partners. Defuse distribution conflicts induced by competition through intensive dialogue and constructive solutions. Ensure smooth elections for employee representations in Germany; promote the ability to work and qualifications of new employees. Shape operations-related requirements for change jointly and in socially compatible ways.

The Lufthansa Group

Social responsibility

Environment

Corporate citizenship

Glossary

Environment

Alternative fuels

Kerosene and emissions

Environmental management

Energy monitoring

Environmental goals

Strategic Environmental Program

Fuel efficiency

Four-pillar strategy

Climate research

Research and development

Emissions trading

Eco-efficiency

Kerosene and emissions

Civil aviation sets course for CO₂-neutral growth

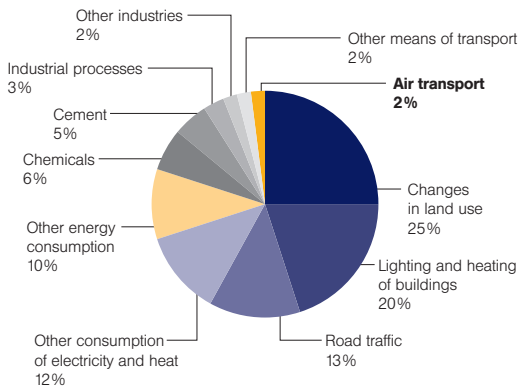
Civil aviation has accomplished much over the past 40 years when it comes to conserving fuel and avoiding emissions. Moreover, the industry set itself further far-reaching goals in June 2009 and agreed upon a strategy for future CO₂-neutral growth. Accordingly, the Lufthansa Group works constantly to improve the long-term environmental compatibility of its passenger and freight flights and to fully capitalize on all available saving potentials in the area of kerosene consumption.

Since 1970, the air transport industry has successfully cut kerosene consumption – and consequently CO₂ emissions per passenger and kilometer – by about 70 percent through technical innovations. In the 1970s, an aircraft consumed 12 liters of kerosene on average to carry one passenger over a distance of 100 kilometers; nowadays, a Lufthansa long-haul aircraft needs only about 3.7 liters on average to do the same. At the same time, the industry has decoupled transport performance and fuel consumption (see graph on page 51). Today, global air transport contributes about 2 percent to the total CO₂ emissions caused by human beings.

Air transport – a worldwide trailblazer in fuel efficiency

Currently, the air transport industry is feeling keenly the effects of the global economic and financial crisis. The International Air Transport Association (IATA) estimates that airlines worldwide will suffer losses of about 9.4 billion U.S. dollars in 2009 and expects further deficits of about 2.8 billion U.S. dollars in 2010. Nevertheless, the experts are convinced that air transport will remain a growth industry. And despite the current difficulties, the companies joined under the umbrella of the IATA continue to rely on sustainable economic principles: The 230 IATA member

Global CO₂ emissions, by source area
in percent (source: IPCC/WRI 2007)



Lufthansa Group: Strategic Environmental Program

Our goal: to reduce the specific CO₂ emissions of our aircraft by 25 percent compared to 2006 levels by 2020.

Additionally, we intend to blend synthetic fuel based on biomass with conventional kerosene at 5 to 10 percent of the total by 2020.

A detailed description of the Strategic Environmental Program is available on the Internet at:
→ www.lufthansa.com/responsibility

In addition, we support the climate protection goals of the International Air Transport Association IATA:

- Average improvement in fuel efficiency of 1.5 percent per year to 2020
- A cap on aviation CO₂ emissions from 2020: carbon-neutral growth
- Reduction of CO₂ emissions of 50 percent by 2050 compared to 2005

airlines unanimously passed a policy paper in June 2009 concerning a significant reduction of CO₂ emissions. This ambitious concept is also supported by the Airports Council International (ACI), the Civil Air Navigation Services Organization (CANSO) and the International Coordinating Council of Aerospace Industries Associations (ICCAIA).

“Air transport is the first industry with worldwide operations to have presented such a comprehensive and global approach,” underlines Thomas Kropp, Senior Vice President and Head of Corporate International Relations and Government Affairs at Lufthansa. In this way, the industry has set itself the goal of improving fuel efficiency by an average of 1.5 percent per year to 2020.¹ From that point on, air transport’s further growth is to be realized in a CO₂-neutral manner, which means that emissions will not increase even if traffic volumes rise. Furthermore, the airline association aims at reducing CO₂ emissions from fossil fuels by 50 percent compared to 2005 by 2050.¹ Lufthansa not only supports these IATA climate protection goals but also actively contributed to the development of this strategy.

To implement this climate-neutral growth from 2020, the air transport industry is counting on its established four-pillar climate protection strategy. Accordingly, the IATA airlines are expected to invest up to 1.6 trillion U.S. dollars¹, of which 1.5 trillion U.S. dollars¹ are to be spent by 2020 for the purchase of new aircraft alone. This move will allow CO₂ emissions to be reduced by as much as 21 percent¹ compared to a scenario without fleet modernization. Further saving potentials can

“Based on our Environmental Guidelines, we have developed an internationally recognized four-pillar climate-protection strategy for the air transport industry.”

Dr. Karlheinz Haag
Head of Group Environmental Issues at Lufthansa



be tapped into via measures concerning operating procedures, infrastructure, technology and the use of alternative fuels. Should these activities not suffice, the employment of economic instruments, such as the introduction of a global trade of emissions rights in air transport, is planned as the next level of measures. The air transport industry is fully aware that systematic cooperation between airlines, airports, manufacturers, air traffic control services and governmental bodies is necessary to implement these measures and to reach these ambitious goals. Lufthansa is prepared to do its part.

Lufthansa: 25 percent lower specific CO₂ emissions by 2020

Lufthansa has set itself the goal of reducing the specific CO₂ emissions of its aircraft by 25 percent compared to 2006 by 2020. Yet this is but one aspect of the Strategic Environmental Program the company presented at the beginning of 2008, which provides the basic framework for its sustainable development. “We face up to our responsibility and work continuously to reduce greenhouse-gas emissions. Based on our Environmental Guidelines, we have developed an internationally recognized four-pillar climate-protection strategy for the air transport industry,” explains Dr. Karlheinz Haag, Head of Group Environmental Issues at Lufthansa. This approach comprises the entire spectrum of climate protection measures that can be implemented and is an integral part of everyday operations.

¹ See IATA: “Aviation and Climate Change – Pathway to carbon-neutral growth in 2020,” July 2009, page 2.

1 Technological progress

- Innovation in aircraft and engine technologies.
- Alternative fuels.

2 Improved infrastructure

- Improved use of air space.
- Airport infrastructures adapted to needs.

3 Operational measures

- More efficient aircraft sizes.
- Optimal flight routes and speeds.
- Optimized processes on the ground.

4 Economic measures

- Global emissions trading to complement the other three pillars.

Four pillars for climate protection

Currently, the Lufthansa Group is in the midst of the largest fleet modernization program of its history. In the next six years, a total of 146 new aircraft worth more than 13 billion euros according to list prices will be put into operation. In 2009, Lufthansa already took delivery of 50 new, fuel-efficient aircraft to replace older models. Additionally, the Group is intensifying its activities in the area of alternative fuels and has launched the initiative "Fuel Efficiency Leadership." From Lufthansa's perspective, saving kerosene creates an ideal link between economic necessities and ecological benefits. "For us, the most effective lever to reduce emissions is the use of new technologies – whether they be fuel-efficient aircraft like the A380, low-emissions engines or sustainable alternative fuels," emphasizes Haag.

Specific fuel consumption falls to 4.30 liters per 100 passenger kilometers

In 2009, the specific fuel consumption within the Lufthansa Group declined to 4.30 liters of kerosene per 100 passenger kilometers. This is the lowest value in the company's history. In 2008, it still stood at 4.34 liters of kerosene per passenger and 100 kilometers. The overview on page 49 shows separately the specific consumption values achieved by the airlines Lufthansa, SWISS, Austrian Airlines and bmi.

Fuel consumption¹

2009 (in tonnes)

	Passengers	freight	total	share
Scheduled flights^{2,3}				
Lufthansa	4,471,488	1,613,822	6,085,310	(77.4%)
SWISS	859,263	294,907	1,154,170	(14.7%)
Austrian Airlines	186,575	31,408	217,983	(2.8%)
bmi	206,874	16,371	223,245	(2.8%)
			7,680,708	(97.7%)
Third parties ⁴	108,470	58,151	166,621	(2.1%)
Other flights⁵			11,612	(0.1%)
All flights			7,858,941	(100.0%)

Emissions^{3, 6}

2009 (in tonnes)

	Passengers	±2008	freight	±2008	total	±2008
CO₂	18,031,228	(+3.8%)	6,163,001	(-9.4%)	24,194,229	(+0.1%)
NO_x	83,216	(+3.6%)	29,428	(-9.4%)	112,645	(-0.1%)
CO	14,119	(+5.0%)	3,257	(-10.7%)	17,376	(+1.7%)
UHC	1,516	(-0.2%)	466	(-15.1%)	1,982	(-4.2%)

Share of third parties⁴

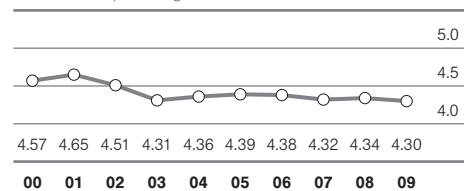
2009

Flights	3.1%
Passengers	2.2%
Tonne kilometers transported, TKT⁷	1.6%
Fuel consumption	2.1%
Carbon dioxide emissions	2.1%

Specific fuel consumption

Passenger transportation

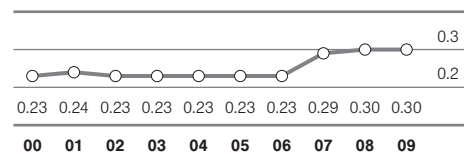
in liters/100 passenger kilometers



Specific fuel consumption

Freight transportation⁸

in liters/tonne kilometer



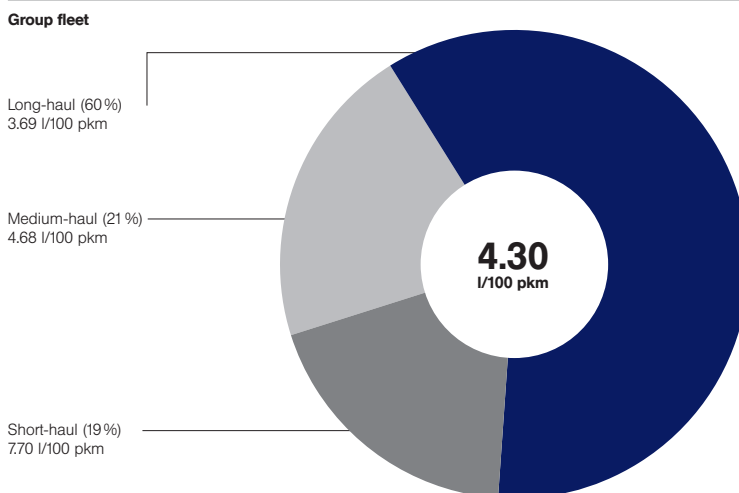
- 1 Actual fuel consumption in tonnes from flight operations, based on all flight events. Recorded are consumption values from gate to gate, i.e. including taxiing on the ground and holding patterns and detours in the air.
- 2 Scheduled flights, charter flights.
- 3 The following companies are included for the reporting year 2009: Lufthansa Passenger Airlines (Lufthansa Passenger Airline, Lufthansa Italia and Lufthansa Regional: Lufthansa CityLine, Air Dolomiti, Eurowings, Contact Air, Augsburg Airways), Lufthansa Cargo, SWISS, Austrian Airlines (from September 2009) and bmi (from July 2009). Excluding the services of third parties, as it is not possible to influence their performance or the flight equipment they operate.
- 4 Includes flights operated by airlines that do not belong to the Group, which carry out services on Lufthansa's behalf at short notice, e.g. in the event of capacity bottlenecks.
- 5 Ferry flights, special flights, training flights, test flights, aborted flights.
- 6 Absolute emissions in tonnes resulting from flight operations (all scheduled and charter flights). Recorded are emission values from gate to gate, i.e. including taxiing on the ground and holding patterns and detours in the air. See also "About this report -> Methodology of calculations" on page 5.
- 7 Excludes road feeder service and partial capacity chartered by Lufthansa Cargo, as no fuel consumption and emissions values are available for this performance.
- 8 On the basis of freight tonne kilometers transported (FTKT), on both cargo and passenger aircraft.

Specific fuel consumption, passenger transportation

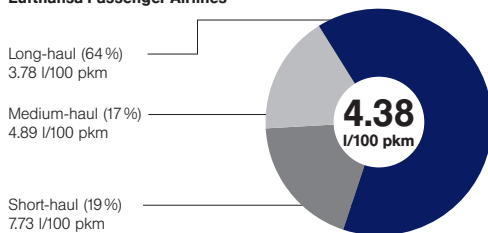
2009

Average specific fuel consumption in l/100 pkm (center of circle) and shares of different traffic areas (segments) in total fuel consumption for passenger transportation, active fleet 2009.

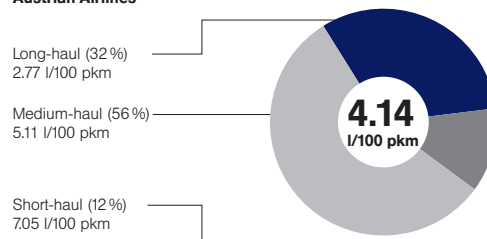
Definitions of traffic areas:
 Long-haul more than 2,500 km
 Medium-haul 800 to 2,500 km
 Short-haul less than 800 km



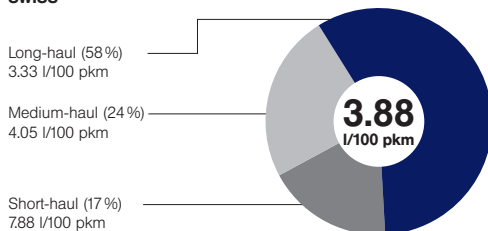
Lufthansa Passenger Airlines



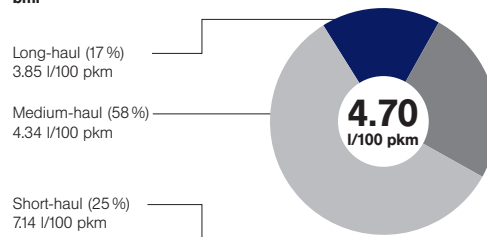
Austrian Airlines



SWISS



bmi



Specific CO₂ emissions, passenger transportation

active fleet in 2009, in kg/100 pkm

	Group fleet	Lufthansa Passenger Airlines	SWISS	Austrian Airlines	bmi
■ Long-haul	9.29	9.53	8.39	6.99	9.71
■ Medium-haul	11.78	12.31	10.20	12.88	10.94
■ Short-haul	19.41	19.47	19.86	17.76	18.00
Total averages	10.84	11.04	9.78	10.44	11.83

The absolute kerosene consumption of regular flights, which means scheduled and charter flights, increased slightly from 7.67 million to 7.68 million tonnes (see overview on page 48). This was primarily because of the growth in transport performance resulting from changes in the scope of consolidation (new Group companies bmi and Austrian Airlines).

By contrast, the Lufthansa Passenger Airlines, SWISS and Lufthansa Cargo recorded lower absolute fuel consumption in 2009. This improvement was due to more than the lower levels of transport performance in the wake of the current economic crisis. It was also achieved by long-term factors including the continuous modernization of the fleet and the implementation of fuel-saving measures,

such as reducing weight, improving load factors, flying at variable speeds and optimizing flight routings (see page 54–55). The Lufthansa Group has bundled all its efforts in this area under the umbrella of the new initiative “Fuel Efficiency Leadership” to stimulate further development (see section “On our way to the top in fuel efficiency” on page 51).

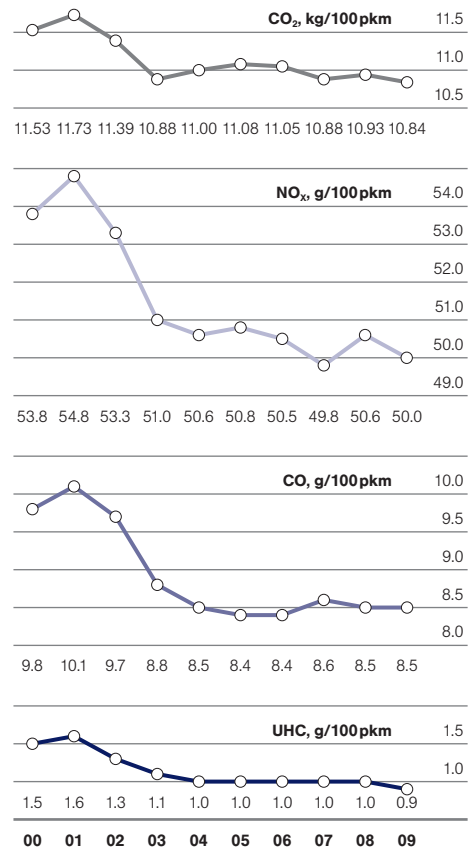
Over the past years, the Group has been able to continuously decouple its transport performance from its environmental effects. From 1991 to 2008, transport performance increased by 257 percent, while kerosene consumption and CO₂ emissions rose by only 145 percent. In 2009, the growth rate of fuel consumption remained constant at 145 percent compared to 1991, while the growth rate of transport performance declined slightly to 252 percent. This was primarily due to the continuing economic crisis and the consolidation of new subsidiary companies.

An important step towards a Single European Sky

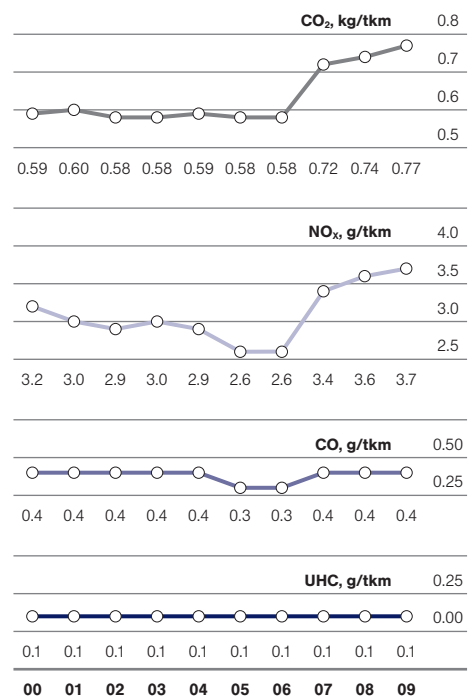
Lufthansa shoulders its responsibilities and works continuously to reduce its kerosene consumption and greenhouse-gas emissions. In addition, infrastructure improvements on the ground and in the air can open up significant CO₂ savings potentials. In 2009, Germany’s Federal Government and the Upper House of the German Parliament restructured the country’s air traffic control system and thus created the prerequisites for a unified European airspace. Earlier, the European Parliament had advocated the swift introduction of the Single European Sky (SES). A joint air traffic control system that replaces the current fragmented air space control could help reduce the emissions from air transport by up to 12 percent.

Just as urgent as the measures taken in the air is the demand-driven expansion of airport capacities. Frankfurt Airport, for example, is one of the most important hubs in Europe. The construction of its new Northwest Runway will help avoid much fuel-intensive flying in holding patterns in future. In this context, it is also important to pursue coordinated airport planning that strengthens locations with high levels of demand and prevents a proliferation of small airports. As before, small airports far from traffic flows are being kept alive artificially to the detriment of a highly productive and efficient airport infrastructure – as well as at the cost of sustainable business principles.

Specific emissions, passenger transportation
in kilograms, grams/100 passenger kilometers



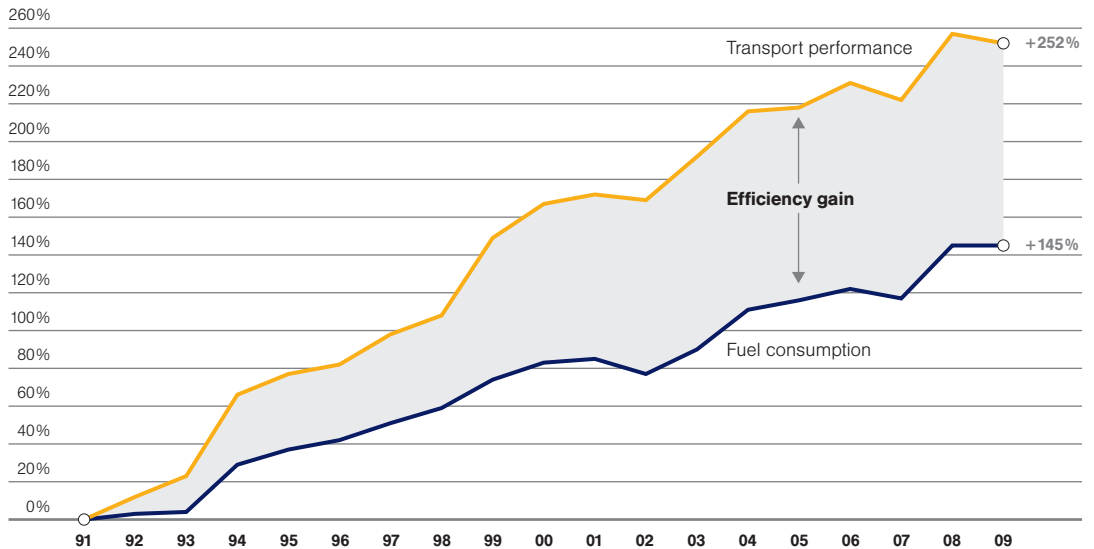
Specific emissions, freight transportation¹
in kilograms, grams/tonne kilometer



¹ On the basis of freight tonne kilometers transported (FTKT), on both cargo and passenger aircraft.

Decoupling of transport performance and fuel consumption

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



Fuel Dumps: Safety comes first

To ensure the safety of passengers and crews, fuel dumps under exceptional circumstances cannot 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.

Fuel Dumps 2009		changes compared to 2008
Events, total	27	-4
Quantity, total	716 tonnes	-26.6%
Medical reasons	17	+5
Technical reasons	9	-9
Other reasons	1	±0

On our way to the top in fuel efficiency

When it comes to conserving kerosene, every drop counts for Lufthansa – and every kilo, as reducing overall weight by even one kilo reduces fuel burn and thus CO₂ emissions. For this reason, Lufthansa constantly works on reducing the weight of its aircraft. Measures taken in this area include installing lighter seats, using lighter ovens in

galley and introducing the “Electronic Flight Bag,” which represents an important step in the direction of paperless cockpits.

For the airlines within the Group, however, conserving kerosene is not only an ecological necessity but also an economic one – as a glance at the related costs demonstrates. At currently about 14.7 percent of the Lufthansa Group’s operating expenses, fuel represents a significant cost factor. Another key consideration is that the price of oil fluctuates considerably due to many factors, and it is set to rise further over the long term as oil, a commodity in demand globally, becomes ever more scarce.

This is why Lufthansa launched the project “Fuel Efficiency Leadership” in fall 2009 as part of the Group initiative “Upgrade to Industry Leadership.” All Group airlines participate in this project which covers all business segments. Additional input comes from employees working in many other areas, such as environmental policies at Lufthansa Technik, fleet strategy, fuel purchasing, flight planning and cockpit crews.

The project’s two primary goals are to reduce fuel consumption in a sustainable fashion and to give the Lufthansa Group a top position in the industry with regard to specific fuel consumption.



Regular "Fuel Days" provide opportunities for know-how to be transferred between the experts at the Group's individual business segments and companies.

The project team has thus created a structural framework, identified synergy potentials within the Group and further developed the competency network "Fuel," which brings together experts from across the Group. "From flight routing optimization systems at Lufthansa Systems to catering at LSG to engine washes at Lufthansa Technik – many areas across the Lufthansa Group make their contribution to further reducing fuel consumption," explains Monika Wiederhold, manager of this initiative.

Group-wide exchange of knowledge

A comprehensive transfer of know-how between the individual companies and the joint development of further fuel-saving measures take place in the framework of "Fuel Efficiency Leadership." In 2009, these experts designed a control system based on the key performance indicators (KPI) in order to analyze conservation activities and ensure comparability between the different Group companies.

During three "Fuel Days," participants had an opportunity to personally exchange their expert knowledge on the subject of fuel. Moreover, workshops on specific subjects allowed them to delve together more deeply into important details. Beyond this, about 90 fuel experts have also used the internal Web-2.0 platform "eTeaming" regularly since 2009 to coordinate measures with their colleagues. This communication platform also serves as a central store of knowledge.

Four areas play an important role in fuel efficiency: Kerosene can chiefly be saved by lowering aircraft weight, implementing more efficient processes

on the ground, developing technical improvements and optimizing flight procedures and air space management. "We're working intensively on numerous projects within the airlines to move all four levers. This is necessary to achieve our ambitious goal of reducing specific CO₂ emissions to 25 percent below 2006 levels by 2020," says Wiederhold. Beyond this, there is a need for further activities over which Lufthansa has only an indirect influence, the most important being the introduction of the Single European Sky, the unified European air space.

Since the successful completion of the Group initiative "Upgrade to Industry Leadership" on February 15, 2010, the project "Fuel Efficiency Leadership" has been continued at the Group level by the departments Group Strategy and Group Environmental Issues. Their primary task for 2010 is to implement step-by-step a methodology based on performance indicators for the analysis of kerosene-saving measures. "It is decisive in this context to continue the implementation of campaigns already begun within the individual airlines to conserve kerosene," underlines Dr. Karlheinz Haag, Head of Group Environmental Issues at Lufthansa. For example, the Lufthansa Passenger Airlines currently pursue 56 new measures to reduce fuel consumption. This includes the exact calculation of the fastest flight routing, complete with precise fuel calculations and optimized fresh-water provisions, a measure that helps avoid more than 8,000 tonnes of CO₂ emissions per year.

Developing alternative fuels

The topic of alternative fuels has great significance for Lufthansa: The Group has set itself the goal of blending a 5 to 10 percent share of synthetic fuels produced from renewable raw materials with conventional kerosene by 2020. But before an alternative type of fuel can be used, it must first be ascertained that it is suitable for air transport and available in sufficient quantities. Another key requirement is an acceptable price. For Lufthansa it is also of great importance that such an alternative fuel is not in competition with food production and that it provides a proven advantage for the environment.

From today's perspective, synthetic fuel produced from biomass continues to be the best option. "Alternative fuels allow us to pursue three goals: They secure supplies, create price stability and contribute to climate protection. Synthetic fuels from biomass are especially attractive because they contribute simultaneously to all three goals," explains Dr. Karlheinz Haag, Head of Group Environmental Issues at Lufthansa. While fuels that are produced from plant-based raw materials cause CO₂ emissions during the combustion process, they release only the quantity of CO₂ the plant used to grow – a closed ecological circuit. Hopes are being pinned on algae and "energy crops" such as jatropha which are used to feed neither humans nor livestock. "The subject of algae must be seen from a long-term perspective and is just at the beginning of its development today. No significant quantities of fuel can be expected from this raw material over the next ten years," says Dr. Andreas Waibel, Manager Group Environmental Issues at Lufthansa.

Lufthansa expands its activities

In 2009, Lufthansa significantly expanded its activities in the area of aviation fuels. It joined the Sustainable Aviation Fuel Users Group, in which airlines, aircraft manufacturers and refinery-technology companies work together on developing sustainable fuels for the air transport industry. Lufthansa also applied for membership in the European Algae Biomass Association (EABA). This cross-industry organization concentrates on advancing the production of energy on the basis of biomass from algae. Internally, Lufthansa has set up the project organization Aviation Biofuel, headed by Joachim Buse. "The availability and economic viability of environmentally friendly fuels

"The availability and economic viability of environmentally friendly fuels are important requirements for using renewable sources of energy in air transport."

Joachim Buse
Vice President Aviation Biofuel at Lufthansa



are important requirements for using renewable sources of energy in air transport," underscores Buse. This project aims to ensure an early influence on the availability of raw materials and on the production and logistics processes for alternative fuels in order to represent the long-term interests of air transport in the emerging markets for these fuels and to develop an optimum procurement strategy for Lufthansa. The new project organization is part of the Group Strategy; the topic is thus under the direct supervision of the Group's Executive Board.

Sustainable Aviation Fuel Users Group

The airlines, aircraft manufacturers and refinery technology companies joined in the Sustainable Aviation Fuel Users Group (SAFUG) have set themselves the goal of accelerating the development and commercialization of sustainable fuels for the air transport industry. While these alternative fuels must offer performance at least equal to that of kerosene, they must also feature lower CO₂ emissions and be produced from renewable sources of energy. The founding of SAFUG in September 2008 was supported by leading global environmental organizations, such as the Natural Resources Defense Council and the Roundtable for Sustainable Biofuels (RSB). Besides Lufthansa, SAFUG counts airlines including Air France/KLM, British Airways, Japan Airlines and SAS among its members. Further members are Boeing and the refinery technology specialist UOP.

→ www.safug.org

European Algae Biomass Association

The European Algae Biomass Association (EABA) promotes the exchange of expertise and cooperation in the production and use of biomass gained from algae. Its aim is to create links between science and industry in order to advance research, technologies and industrial capacities in the area of biomass from algae. Another task is to represent the interests of its members vis-à-vis the authorities in individual states as well as institutions such as the European Union. Among EABA's roughly 70 members are industrial companies, research centers and universities.

→ www.eaba-association.eu

Lufthansa's measures to improve the Group's eco-efficiency



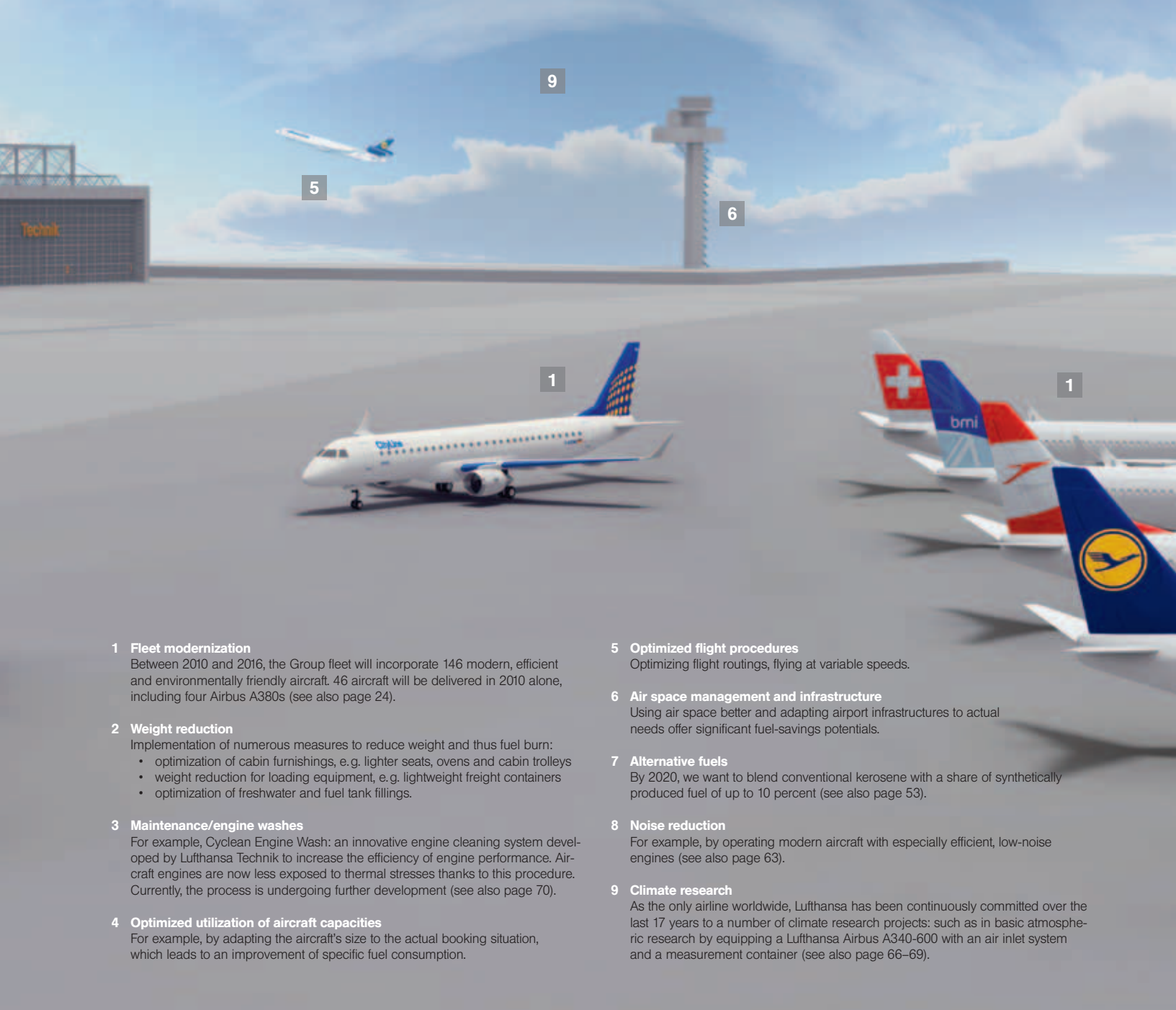
1 The Lufthansa Airbus A380 can carry 40 percent more passengers than a Boeing 747-400. The highly efficient Rolls-Royce Trent 900 engines result in not only lower fuel consumption but also lower noise emissions. Modern composite materials make the A380 appreciably more lightweight. And less weight means lower fuel consumption.

Lufthansa plans to expand its cooperation in the framework of the respective international organizations in 2010. Only if politicians, researchers, aircraft manufacturers, fuel producers and airlines all pull in the same direction can alternative aviation fuels become viable on the market in the long run.

Emissions trading – better globally than regionally

At the beginning of 2009, the European Union decided to include air transport in the EU emissions trade. Consequently, from January 1, 2012 airlines must present appropriate CO₂ certificates

for all flights taking off and landing in the EU. The EU member states are responsible for the implementation of this measure in their respective countries. The airlines will receive from the member states a previously determined allocation of certificates, whose total quantity for the first year of trading corresponds to 97 percent of the average emissions from 2004 to 2006. For the period from 2013 to 2020, this level is set to decline to 95 percent. From 2012 onward, airlines will also need to make bids to the member states for 15 percent of the annually allocated emissions rights. The system is only “half-open,” meaning that airlines may purchase additional certificates from the entire EU emissions trade but may not sell them



1 Fleet modernization

Between 2010 and 2016, the Group fleet will incorporate 146 modern, efficient and environmentally friendly aircraft. 46 aircraft will be delivered in 2010 alone, including four Airbus A380s (see also page 24).

2 Weight reduction

Implementation of numerous measures to reduce weight and thus fuel burn:

- optimization of cabin furnishings, e.g. lighter seats, ovens and cabin trolleys
- weight reduction for loading equipment, e.g. lightweight freight containers
- optimization of freshwater and fuel tank fillings.

3 Maintenance/engine washes

For example, Cyclean Engine Wash: an innovative engine cleaning system developed by Lufthansa Technik to increase the efficiency of engine performance. Aircraft engines are now less exposed to thermal stresses thanks to this procedure. Currently, the process is undergoing further development (see also page 70).

4 Optimized utilization of aircraft capacities

For example, by adapting the aircraft's size to the actual booking situation, which leads to an improvement of specific fuel consumption.

5 Optimized flight procedures

Optimizing flight routings, flying at variable speeds.

6 Air space management and infrastructure

Using air space better and adapting airport infrastructures to actual needs offer significant fuel-savings potentials.

7 Alternative fuels

By 2020, we want to blend conventional kerosene with a share of synthetically produced fuel of up to 10 percent (see also page 53).

8 Noise reduction

For example, by operating modern aircraft with especially efficient, low-noise engines (see also page 63).

9 Climate research

As the only airline worldwide, Lufthansa has been continuously committed over the last 17 years to a number of climate research projects: such as in basic atmospheric research by equipping a Lufthansa Airbus A340-600 with an air inlet system and a measurement container (see also page 66–69).

throughout the entire system; sales are only allowed within their own sector, air transport.

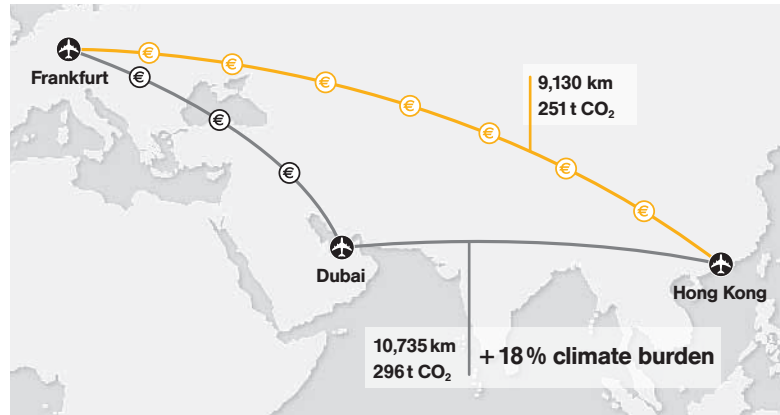
All airlines within the Lufthansa Group submitted their monitoring concepts by the deadline of August 31, 2009 to the appropriate national authorities. These plans are the prerequisite for the allocation of free-of-charge certificates. By contrast, the EU Commission has repeatedly been either unable to meet its own deadlines concerning the publication of further detailed regulations or presented only incomplete draft versions. Additionally, hardly any EU member states managed to implement the EU directive as national law by the planned deadline of February 2, 2010. In Germany,

the corresponding bill is expected to be presented in the second half of 2010. The resulting uncertainties make it more difficult for the affected airlines to plan reliably for the future and increase the effort needed for implementation, including at Lufthansa.

Not least, an emissions trading system for air transport that is limited to the EU causes competitive distortions which systematically disadvantage European airlines. For flights from the USA to Asia, for example, charges due to emissions trading are to be paid if the routing involves a European hub – but not if flights are routed through airports outside of Europe. Therefore, Lufthansa hopes that the German Federal Government will be guided by

€ EU emissions certificates must be acquired from January 1, 2012 on these routes.

Calculation on the following basis: type of aircraft A340-600, seat-load factor 88 percent.



the Coalition Agreement of fall 2009, which states: “When introducing emissions trading for air transport, we wish to ensure competitive neutrality.”

An example: For a nonstop flight from Frankfurt to Hong Kong, Lufthansa will have to buy certificates for the entire distance. By contrast, a Gulf-based airline flying from Frankfurt via Dubai to Hong Kong will only have to cover the segment Frankfurt-Dubai. In addition to competitive disadvantages, there is also a threat of providing the wrong incentive with regard to climate policy, as such transfer connections are often longer than direct connections (see illustration). On the one hand, fuel consumption and CO₂ emissions increase. On the other, unilateral supplementary financial burdens reduce the very capital that is necessary for investments in fuel-efficient aircraft.

To compensate for these disadvantages, a worldwide system for emissions reduction is required. Climate change is a global problem that can only be countered with global solutions. Yet following the UN Climate Change Conference in Copenhagen in December 2009, this variant, which would include all states and airlines in a carbon emissions trading system, is still nowhere to be seen.

A way out of this dilemma is offered by the concept for a worldwide sector-based approach to reducing emissions developed by the International Air Transport Association (IATA) and supported by the entire global air transport industry. This concept ensures that all airlines active in a given market are treated in the same manner and that the air transport industry’s ambitious goals are reached (see also section “Civil aviation sets course for CO₂-neutral growth” on page 46). So far, no other industry has presented such a comprehensive and global approach.

An important point in this concept is that the revenues from trading emissions rights would prima-

riarily serve to research and develop further climate protection measures in air transport. This task-oriented use of funds to improve technologies, advance infrastructure and develop sustainable alternative fuels would also help to implement the four-pillar strategy for climate protection elaborated by the aviation industry.

CO₂-compensation program expanded

Lufthansa and SWISS have offered their customers expanded programs for the voluntary compensation of CO₂ emissions since fall 2009. These schemes allow passengers to offset their individual CO₂ emissions resulting from a flight by using premium miles from the frequent flyer program Miles & More. Additionally, Lufthansa passengers have had the possibility since the beginning of 2010 to deduct the amount paid for their voluntary CO₂ compensation from their taxes. For this purpose, the renowned Swiss nonprofit foundation “myclimate – The Climate Protection Partnership” issues donation receipts accepted by the tax authorities to private individuals residing in Germany. Lufthansa and SWISS cooperate closely with myclimate in offering voluntary climate protection donations.

Since September 2007, both airlines have given their passengers the option of actively contributing to climate protection when booking a flight on → www.lufthansa.com and → www.swiss.com. Once a booking has been completed, passengers can use the emissions calculator to determine the actual CO₂ emissions for a given journey and then offset these accordingly. The partnership with myclimate ensures that the donated amount flows directly into climate protection projects that fulfill the highest standards and – besides reducing CO₂ emissions – contribute to sustainable development. You will find additional information on the Internet pages.



→ <http://lufthansa.myclimate.org>

In the area of offsetting CO₂ emissions, the new Lufthansa Group company Austrian Airlines cooperates with the climate protection initiative Climate Austria. The principle is the same as at the other two Group companies: When purchasing tickets, passengers can use a dedicated CO₂ calculator on the Internet page → www.aua.com to determine the CO₂ emissions caused by their journeys and compensate for them on a voluntary basis. Since winter 2008, Vienna Airport has also featured three "Climate Corners," where passengers can use dedicated terminals to not only access information about Climate Austria and climate protection but also compensate the emissions of their flights. Climate Austria supports both national and international climate protection projects aiming at CO₂ reduction that fulfill audited standards. You will find further information about this initiative on the Internet page → www.climateaustria.at

Environmental management

Lufthansa expands its environmental management further

For decades, sustainability and environmental care have enjoyed great importance at Lufthansa. Environmental management is an important means to monitor and control environmental effects. At the same time, it often leads to improved environmental performance and increased efficiency within the Group, thereby linking ecological and economic advantages. The best example here is the conservation of kerosene at a time of rising oil prices.

Over the past years, the Group's environmental experts have implemented more than 130 measures in their quest to achieve Lufthansa's environmental goals (see our Internet pages for an overview of goals and measures). These measures include installing more lightweight seats aboard aircraft, introducing new flight procedures for approach and departure, optimizing flight routings, offering attractively priced tickets for employees who commute by public transport at Lufthansa's larger locations,

→ www.lufthansa.com/responsibility

and reducing environmental effects along the procurement chain. The path into the future is outlined by the current Strategic Environmental Program, whose perspectives stretch to the year 2020. Specific goals are to continue decoupling growth in transport performance from increases in emissions and to reduce specific CO₂ emissions by 25 percent compared to 2006 by 2020. Furthermore, Lufthansa intends to systematically expand and strengthen its environmental management at the Group level and within the individual companies.

Diverse requirements on environmental management

As a Group with more than 400 subsidiary and associated companies worldwide, Lufthansa places special emphasis on expanding its environmental management in ways that are decentralized as well as specific to each business segment. The different business segments, which range from catering to aircraft maintenance to the flight-operating companies, place quite diverse requirements on an environmental management system. The airlines give top priority to the reduction of kerosene consumption, while LSG Sky Chefs is primarily concerned with reducing electricity and water consumption.

All larger companies and business segments across the Lufthansa Group have an environmental department or at least an environmental commissioner. The Group currently counts a total of about 35 contact partners for environmental issues.

The Group Executive Board accepts overall responsibility for Lufthansa's adherence to its Environmental Guidelines, which were adopted company-wide in 1996 and exceed legal requirements. Reporting directly to the Executive Board, the Head of Group Environmental Issues and his team coordinate the Group-wide goals, strategies and measures concerning the environment. The necessary processes are implemented independently by the business segments and companies. The environmental contact partners meet twice a year at the Environmental Forum to discuss current issues and to coordinate measures and processes. Additionally, the internal Web-2.0 platform "eTeaming" offers the competency network "Environmental Forum," which all environmental experts across the Group use to maintain contacts, coordinate projects and continuously exchange knowledge.



The Environmental Forum: A platform for the environmental experts across the Lufthansa Group.

Group companies successfully recertified

Since 1999, the environmental management system at **Lufthansa CityLine** has been certified according to the internationally acknowledged environmental standard ISO 14001 and the European eco-audit regulation EMAS. In July 2009, the airline received recertification according to ISO 14001 and revalidation according to EMAS. Lufthansa CityLine simultaneously published its fourth Environmental Report, which can be accessed at → www.lufthansacityline.com on the Internet.

The new Lufthansa subsidiary **Austrian Airlines** has set itself the goal of continuously improving its environmental performance. Since 2006, the airline has participated in the "Ökobusinessplan Wien," the environmental service package of the City of Vienna. Furthermore, through the "Öko-profit-Programm," the company has at its disposal the most important aspects of an environmental management system. As an ecological project for integrated environmental technology, "Ökoprofit" is a cooperation between Austrian city administrations and local businesses which aims at lowering operating costs while conserving natural resources. Long-term, Austrian Airlines plans to introduce an environmental management system on the basis of EMAS or ISO 14001.

At **SWISS**, environmental management is the responsibility of top management. Sustainability is one of the airline's 15 strategic building blocks and has been part of its corporate culture for many years. At the end of 2009, SWISS formed an environmental project group representing all company areas and reporting directly to the airline's Environment Board. This team has already identified more than 30 projects to protect the environment, which it plans to implement in the years ahead.

The airline **SunExpress**, in which Lufthansa holds a 50-percent share, was also successfully recertified according to ISO 14001 in 2009.

Lufthansa Technik adopted medium-term strategic environmental goals in the first half of 2009. These include a plan to reduce the CO₂ emissions from the areas of infrastructure and production by 30 percent compared to 2006 levels by 2012. "Overall, we want to optimize our internal processes from an ecological-economic perspective and to realize projects that are meaningful in this context," explains Ralf Wunderlich, Head of Environmental Management at Lufthansa Technik in Hamburg. This includes expanding energy management, assessing alternative sources of energy and introducing the first electric cars in the company's vehicle fleet. Another important goal is to further improve customer benefits. "We're redoubling our efforts to develop new products and processes by which airlines can conserve kerosene," reports Wunderlich.

Lufthansa Technik is the first company in the MRO industry to operate an integrated, process-oriented and certified quality management system which comprises the areas of aviation law, quality, environment, international standards and job safety. Since 2009, the company has been concentrating on certification according to the environmental management standard ISO 14001 and will not continue its certification according to EMAS. "EMAS is a European system and not as well known as ISO 14001 outside the EU. Our customers are international airlines that demand ISO 14001 and not EMAS. Besides, we don't have any internal advantages through the double certification," says Wunderlich, explaining this step. In November 2009, Lufthansa Technik was recertified according to ISO 14001, the job-safety specification OHSAS 18001 and the quality-related norm EN 9110.

A number of European affiliated companies within the Lufthansa Technik Group already operate certified environmental management systems. In November 2009, the Lufthansa Technik location in Sofia received certifications according to ISO 14001 and OHSAS 18001 for the first time. "These certifications within the group will be continued. For 2010, we're planning the certification of our location in Budapest according to ISO and OHSAS," Wunderlich announced. "Internationally

uniform standards regarding environmental and quality aspects have long since become an established element in generating customer loyalty. In addition, consistent rules for environmental protection give our group companies the opportunity to learn from each other and implement tried-and-tested processes."

Lufthansa Cargo has also had an ISO-14001 certified environmental management system since 2008. In November 2009, this system was recertified at the Frankfurt location and certification was successfully extended to the Leipzig location. The certification audit report 2008 was the first of its kind for the company and therefore contained various improvement and observation points, all of which Lufthansa Cargo was able to implement in 2009. The external auditors were convinced by the optimized documentation for the environmentally-relevant installations and by the newly-developed waste management concept. One observation point, for example, addressed the need to inform apprentices about environmental protection. The auditors' valuable suggestions were taken into account and have meant that the topic of the environment is even more deeply rooted within the company.

Offering no further suggestions for improvements, the monitoring audit report 2009 contained only a few observation points, such as the recommendation to intensify the communication of information about the environmental management system at the station level. "These points are not a hurdle for us. We will put them into effect in the course of 2010. The auditors confirm with their report that they are highly satisfied with the established environmental management system at the Frankfurt and Leipzig locations," says Harald Zielinski, who is responsible for safety and environmental protection at Lufthansa Cargo AG.

LSG Sky Chefs has introduced an approach to environmental management that allows it to monitor and compare the central production and environmental parameters "energy consumption" and "water consumption" worldwide. The system also enables the company to improve these parameters continuously.

Lufthansa Global Tele Sales, which has been a fixed component in the Group's service center network since September 2000, decided in November 2009 to implement an environmental management system. The goal is to have this system validated according to EMAS in June 2010.

LSG Sky Chefs: 31 countries – one approach to environmental management

In December 2007, the fully-owned Lufthansa subsidiary company LSG Sky Chefs introduced one worldwide approach to environmental management, which was further expanded in 2008 and 2009. Not only does it contribute to conserving resources, but it also takes customer needs into consideration. "Each time we participate in a tender, we get similar questions: Does LSG Sky Chefs have an environmental management program? What are your environmental goals? Is there an environmental report?," explains Walter Vreden, Senior Manager Resources & Environment at LSG Sky Chefs. "Today, we can give a clear answer to any and all of these questions and thus improve our competitive position."

The environmental management of LSG Sky Chefs is a function of its Executive Board. The board determines target indicators for each of the company's six operating regions concerning their specific energy and water consumption for the three years ahead. These call for a 1-percent reduction in energy consumption (per m²) and water consumption (per meal) compared to the figures from 2008 to 2010, and a 6-percent reduction overall by 2012. In 2009, a total of 125 locations in 31 countries participated in the environmental reporting system of LSG Sky Chefs. The path the company's six operating regions – Germany, Europe, North America, Latin America, Asia/Pacific and Emerging Markets – choose to reach this goal is left to their own discretion. This depends primarily on the specific environmental possibilities and problems in each region.

The regional environmental managers coordinate all measures aimed at reducing energy and water consumption and report all environmentally relevant statistics in standard format via the Internet to headquarters in Germany. Additionally, they document their most effective methods and procedures for conserving resources in a "best practice" database, so that other regions can benefit from their experiences.

Should LSG Sky Chefs decide at some time in the future to have its global environmental management certified, the company is well prepared. The reason: It already fulfills a number of criteria met by certified companies. In 2010, another of these will be added with the publication of the company's first environmental report.

Managing waste materials on board and on the ground

As handling waste and recyclable materials is regulated everywhere by national laws and local directives, LSG Sky Chefs no longer formulates its own targets in these areas. Nevertheless, the company strives to surpass the legal requirements and to keep the volumes of food leftovers, cans, tetrapaks, newspapers and magazines as low as possible. Accordingly, the airline caterer systematically sees to it that purchased and stocked quantities correspond to actual needs. And the company systematically feeds materials into recycling facilities whenever possible.

Energy and resource management

Every kilowatt-hour counts: Energy management at Lufthansa

Lufthansa has worked intensively to reduce its energy consumption for many years. Having set itself further ambitious goals for the future, the company anchored these in a new Strategic Environmental Program in 2008. Its key points provide, among other measures, that Deutsche Lufthansa AG will take the latest energy-saving and resource-conserving technologies into consideration whenever buildings are planned, constructed or renovated. This implies not only that the company continuously identifies and realizes the energy-saving potentials of existing buildings. But the Group also aims at putting up new buildings according to the principles of ecological construction and operating them in such a way as to save resources. A further goal is to convince the employees of an even thriftier use of energy. The annual Energy Forum serves as a platform for the exchange of information between those responsible for infrastructure throughout the Group.

Green Building: The Lufthansa Aviation Center in Frankfurt

Over the past few years, Lufthansa has realized a number of new construction projects that underscore the company's leading role in the area of energy-efficient buildings. These include the Lufthansa Aviation Center (LAC), the administration building in Frankfurt, into which the company moved in July 2006. The building's energy efficiency rests on a mix of thermoactive exposed-concrete ceilings, a highly insulated facade and sensitive automatic shading mechanisms. As the LAC's annual consumption of heating energy falls 58 percent below the Energy Savings Directive of 2007, the EU Commission named Lufthansa a partner of the European "GreenBuilding" program in February 2009.

Future-oriented: Lufthansa's geothermal facility in Seeheim

Future-oriented technologies pay off not only ecologically but also economically. This is proven by the Lufthansa Training & Conference Center

The Lufthansa Aviation Center at Frankfurt Airport.



(LTCC) in Seeheim, which was newly opened in February 2009. The LTCC's energy centerpiece is a geothermal facility with 63 earth probes. These are connected to two newly-developed heat pumps, which can provide both heating and cooling energy. They absorb the ambient heat stored in the probes and pump it electrically to the higher temperature level of the heating system. During warmer periods of the year, cooling also functions with the temperature difference between the soil and the outside air. The facility's energy balance sheet speaks for itself: It produces 100 percent of heating performance with only 25 percent of outside energy. Other positive side-effects are a significant reduction in CO₂ emissions and an annual savings in the five-digit euro range.

Thorough: Energy monitoring optimizes facility operation

With the goal of proving the efficiency of the combined system of geothermal facility and heat pump, Lufthansa launched the project "Efficient Energy Use in Seeheim" in March 2009 together with "i-volution," the technology sector of the Bilfinger Berger construction group. A chair at the Rheinisch-Westfälische Technische Hochschule Aachen (RWTH Aachen) will conduct comprehensive energy monitoring to the end of 2011. This monitoring is supervised by the Lufthansa department "New Construction Projects" and the planning firm "Enco," which also supervised the LTCC's planning and construction phases. One of the questions the experts are seeking to answer is to what degree weather conditions influence the thermal performance of the earth-probe system. Beyond that, they continuously observe the opera-



tional performance of the geothermal facility and the heat pumps to adapt and optimize the system so that it corresponds to the building's actual energy needs. They also determine the gas, electricity and water consumption per visitor and develop indicators from these observations that can serve as the basis for performance comparisons using simulations.

Consistent: Ten million kilowatt-hours of eco-electricity per year

Environmental criteria also played an important role in the new construction of Lufthansa's corporate headquarters in Cologne, put into operation in November 2007. To keep the building's energy consumption as low as possible, it was equipped with a thermoactive building component system, a mechanical ventilation system and a heat recovery unit. Conclusive energy consumption data are not yet available. Moreover, Lufthansa signed a contract with an energy supply company in 2008 to have electricity from renewable sources supplied to its headquarters in Cologne and its training center in Seeheim from 2009 to 2011. During this period, the Group will receive a total of about ten million kilowatt-hours of eco-electricity for the two buildings.

Energy-based building management at Lufthansa CityLine

Lufthansa CityLine, a wholly-owned subsidiary company of Deutsche Lufthansa AG, has operated an energy-based building management since its administration moved into a different office building on the site of Cologne/Bonn Airport in 2009. In the context of this renovation work, the regional



airline took numerous steps to optimize the building's energy consumption. One of these was creating the possibility of heating, cooling and ventilating the operations center – staffed around the clock – independently from the rest of the building. A central heat exchanger also allows for year-round control of incoming and outgoing air, which helps conserve an appreciable amount of energy. But that is not all: In 2010, Lufthansa CityLine intends to assess and implement a number of more modern, more energy-efficient lighting concepts.

Resource-conserving technology and materials

Ecological interests also guided the renovation of the Lufthansa subsidiary in East Meadow, New York, in 2009. The company took advantage of a wide range of environmentally friendly technologies and materials, such as state-of-the-art lighting with significantly lower consumption figures and motion detectors in place of light switches. Moreover, environmentally friendly wall paint and recyclable carpets were used exclusively.

A clean solution was also selected by AMECO Beijing, a joint venture of Lufthansa Technik and Air China. In November 2009, the largest aircraft maintenance company in Beijing put an environmentally friendly gas-powered heating plant into operation. The new plant's goal is to increase thermal efficiency by 10 percent and to simultaneously decrease CO₂ emissions by 50 percent. The project received support from the Chinese government.

Lufthansa Training & Conference Center in Seeheim.



Instructive: Energy conservation tips for employees

It is an important concern for Lufthansa to make the employees at all Group companies even more aware of energy-saving behavior in the future. For example, the Group continuously provides energy conservation tips for everyday situations in office work – not only on the intranet and in internal brochures but also through campaign weeks such as “Energiecheck@LHT,” an information effort at Lufthansa Technik which focused on “right” ways of heating and socket strips that can be switched off. Furthermore, the company pays careful attention to buying and using exclusively energy-efficient office equipment, operational equipment and lighting devices.

Interactive: Information exchange at the Energy Forum

The department Facility Management set up the Energy Forum as early as 2004 to provide those who are responsible for infrastructure within the Group with a regular platform for the exchange of opinions and experiences. Enhanced by presentations by external speakers, this Group-wide, one-day event last took place in November 2009 under the threefold banner of “Energy Efficiency. Environmental Protection. Sustainability.”

Steadily rising share of sustainable paper products

Treating natural resources in responsible ways – this commitment is firmly anchored in Lufthansa’s Environmental Guidelines and is also applied to paper as a recyclable material. To reduce paper consumption continuously, the Group has consistently promoted the use of communication means that are low in paper content over the past years. Additionally, Lufthansa is active in the Initiative Pro Recycling Papier, which it co-founded in 2000. The member companies of this cross-industry business alliance promote the increased acceptance of recycling paper. They benefit not only from exchanging expertise with other members but also from the environmental and cost advantages that using recycling paper provides.



→ www.papiernetz.de

At Lufthansa, recycling paper has an average share in total paper consumption of about 85 percent. Paper produced from fresh fibers is only used in exceptional cases, such as for Group stationery. In this case – as for the Lufthansa Annual Report – a 100-percent FSC-certified product is used. The FSC seal – the acronym stands for Forest Stewardship Council – guarantees the equal consideration of social, ecological and economic aspects in the exploitation of forests.

Switching to recycling paper with the “Blue Angel” certificate also promises an ecological dividend: Since early 2008, the external publications “Lufthansa Magazine” and “Lufthansa Exclusive” have been printed on recycling paper certified by the oldest and most demanding German environmental seal for especially environmentally friendly products. Such paper has been used for *Balance* since 2005.

Noise emissions

Ever quieter in the air

Reducing aircraft noise and lessening the burden on people living near airports are important concerns for Lufthansa. All but three of the aircraft operated by the Lufthansa Group fulfill the important “minus 10 EPNdB” criterion (Effective Perceived Noise dB) of the strict Chapter-4 noise standard formulated by the International Civil Aviation Organization (ICAO; see illustration on page 65). Further audible achievements for people near airports will result from the billions of euros invested in new aircraft: The Airbus A380 and the Boeing 747-8 Intercontinental produce noise footprints that are about 30-percent smaller than those produced by their predecessors. This significant improvement is above all achieved by major progress in engine technology. For example, the Trent 900 engine on the A380 is especially quiet because the muffler placed directly in front of the fan is now manufactured from a single piece of material. On the B 747-8 Intercontinental, the chevron-shaped nozzle trailing edges of the new GEnx-2B67 engines ensure an appreciable reduction of noise (see page 64).

In addition, noise reduction is a basic part of pilot training: Lufthansa trains its cockpit crews specifically for low-noise takeoffs and landings. Wherever airports around the world permit such procedures, Lufthansa pilots use them. In Frankfurt and Munich in particular, they practice the “Continuous Descent Approach” (CDA) for audibly lower noise emissions. At the Frankfurt location, the airline also cooperates with experts from aviation, the state government of Hesse and surrounding city administrations in the Forum Airport and Region. The goal here is to develop further active noise protection measures, such as low-noise flight procedures (see article at right).

Since 1999, Lufthansa has also been active in the research network “Quiet Traffic.” This initiative was launched by the German Aerospace Center (DLR) and counts on the interdisciplinary cooperation of industry, research and transport. It examines specific issues related to road, rail and aircraft noise. The partners in the working group “Aircraft Noise” designed and executed a number of research projects between 2003 and 2008 with the support of the Federal Ministry of Economics and Tech-

nology. The examination of individual noise sources and flight procedures at different air speeds, engine thrust settings and landing gear positions has provided decisive insights for further successes in the fight against noise.

Assessing active noise protection measures more precisely

One decisive aspect in noise research is the use of aircraft noise simulation programs. They help to assess more precisely what effect noise reduction measures at a noise source or during flight pro-



Active noise protection at Frankfurt Airport – The Forum Airport and Region

The Forum Airport and Region is an important platform for the dialogue between the aviation industry and the airport's neighbors. Its task is to inform interested citizens and to develop measures to be used in active noise protection. The government of the state of Hesse appointed Lufthansa to the forum in fall 2008. “Since the beginning of the discussions about the expansion of Frankfurt Airport, we have actively participated in the talks and maintained a continuous dialogue with all players and participants,” emphasizes Dr. Karl-Rudolf Rupprecht, Senior Vice President Hub Management Frankfurt at Lufthansa.

In the Forum Airport and Region, the airline is active in several committees and working groups. Special emphasis lies on its work in the “Expert Committee Active Noise Protection,” which consists of representatives from the aviation industry, the neighboring communities and the State of Hesse as well as independent experts. The committee's goal is to achieve a reduction of noise burdens by means of a bundle of intelligent measures and thus to lower the number of people affected by aircraft noise. Two examples: Turning later to align the aircraft with the final approach line can make it possible to fly over less densely populated areas when landing at night. And using the Continuous Descent Approach, pilots can reduce the aircraft's noise emissions by lowering the engines' thrust. The expert committee is also planning to use a newly-developed aircraft noise index to transparently depict the noise burden reduction that can be achieved by implementing the entire package of measures.

By applying its know-how, Lufthansa has contributed significantly to the development of noise-reducing measures. As all approach and departure procedures must fulfill civil aviation's strict safety requirements, Lufthansa pilots in particular play a decisive role in developing, evaluating and testing these flight procedures. This involves safety assessments in the air or tests in the flight simulators of Lufthansa Flight Training.

With partners such as the German Aerospace Center (DLR), Lufthansa has also researched the generation of aircraft noise for many years. Using elaborate flyover measurement and noise measurements on engine testbeds, the experts have examined options for curbing noise generation. “Today, we can build on these years of basic research in our work within the Forum Airport and Region,” says Rupprecht.



The chevron-shaped nozzle trailing edges on the Boeing 747-8 Intercontinental's GEnx-2B67 engines produce a significant reduction of jet noise.

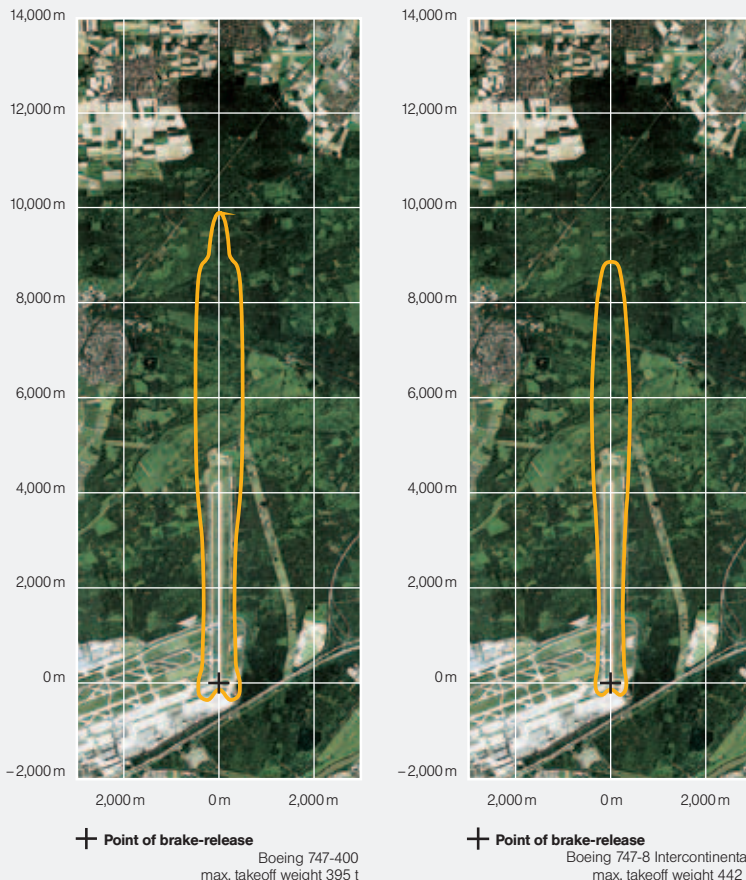
cedures might have on the ground. The methods currently available are too limited and too imprecise to be able to do this. "These programs have to be developed further so that the effect of active noise protection measures on the noise levels can be examined and evaluated in more detail," says Dr. Gerd Saueressig, Manager Group Environmental Issues at Lufthansa. For this purpose, more accurate models of the individual noise sources on aircraft are needed. By making targeted measurements with highly complex microphone systems, the experts are able to track and measure noise sources in flight. The data on source intensity and directional characteristics generated in this way are later fed into noise source models.

Fleet modernization results in audible achievements

The noise footprint of a Boeing 747-8 Intercontinental taking off will be about 30 percent smaller than that of a Boeing 747-400, despite a maximum takeoff weight that is about 10 percent higher. Lufthansa has ordered 20 of these Boeing 747-8 Intercontinentals.

Shown below are the 85-dB maximum level contours for a departure following Lufthansa's standard departure procedure (modATA) and with the indicated takeoff weight.

Within the respective contours, the maximum noise level of 85 dB(A) is reached or exceeded. For comparison: A maximum noise level of 85 dB(A) is produced by truck passing by in city traffic at a distance of 5 meters.



Source: Boeing

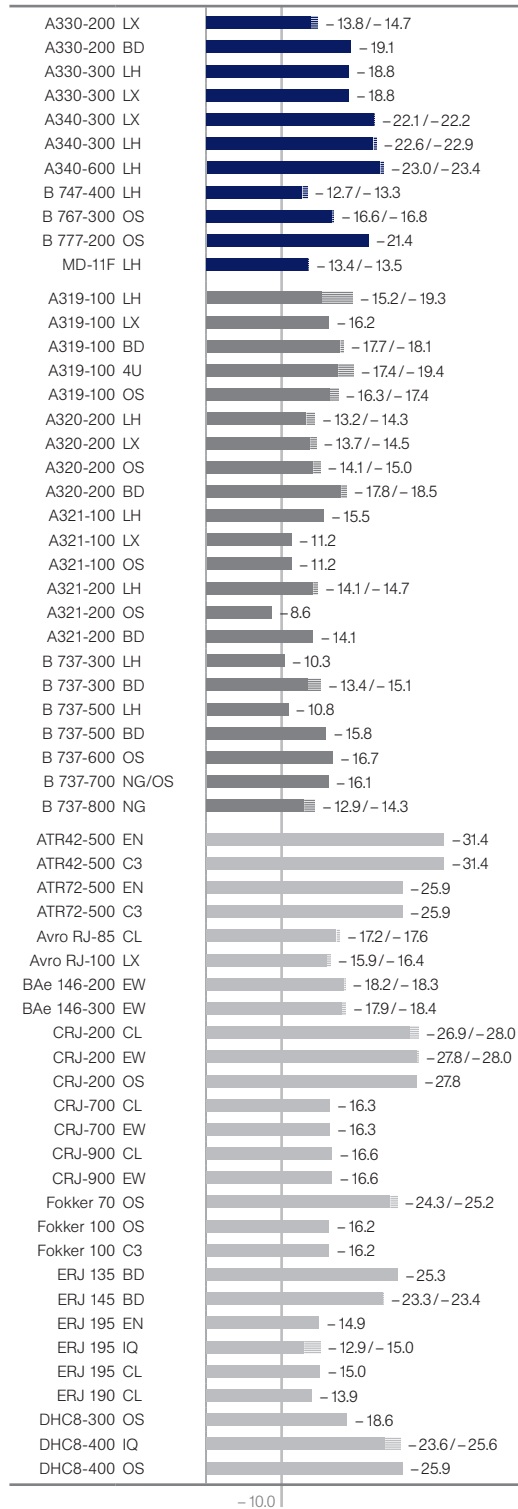
By carrying out numerous flyover measurements in cooperation with the DLR, Lufthansa contributed significant data to the development of the aircraft noise simulation program SIMUL for the Airbus 320. An important next step would be to extend this simulation program to other aircraft, particularly to wide-body jets such as the Boeing 747-400. The required measurement data are already available, as they were gathered in the framework of the research-and-development project FREQUENZ (see *Balance*, issue 2009, article "Research for quieter flying," p. 73). However, there is currently no follow-up project to analyze the data and further develop the noise simulation program. Parallel to developing a model of noise sources, data analysis has another goal: deciphering how noise is actually generated by the previously identified noise sources. This is the only approach for experts to be able to develop targeted countermeasures later on.

Calculating noise even more exactly

Additionally, future noise calculation programs should be capable of taking into account different types of aircraft and noise-reducing modifications, such as landing gear coverings. They should also be able to incorporate changes in approach and departure procedures. Current calculation programs are not yet able to provide such information. The reason: Noise calculations according to the German aircraft noise protection act (so-called AzB method) are designed for administrative needs. However, they are only of very limited use for comparative analyses of measures as they are currently being discussed by experts and interested members of the public at several airport locations. Therefore, technical improvements on individual types of aircraft or modifications in flight

Margins below the noise limit of ICAO chapter 3*

Lufthansa Group fleet (active fleet on 31.12.2009)
in EPNdB



Grouping of aircraft types according to MTOW:
 ■ under 50 t ■ 50 to 150 t ■ above 150 t

This division ordinarily corresponds to a grouping of intercontinental, continental and regional aircraft.

* New ICAO-Chapter-4 limit, which has been effective for new aircraft since 2006: - 10.0 EPNdB when compared to Chapter 3.

procedures cannot later be incorporated – or only at great effort – and are in part only imprecisely taken into consideration.

Against this background, it is necessary from Lufthansa’s perspective to push forward the development of SIMUL, the DLR’s high-resolution aircraft noise simulation tool for individual flights. The task is to refine partial noise source models that are capable of modeling the effects of changes to the engine and the aerodynamic configuration. At the same time, it is of fundamental importance to extend the database of the high-value flight simulation tool to include at least the essential noise-significant aircraft models. A decisive step would be the integration of the above-mentioned data from the flyover measurements on a Boeing 747-400 into SIMUL. Experts could then use this expanded simulation tool to analyze in more detail the noise emissions from the two most important aircraft groups (A320/B 737 and B 747) primarily determining the noise contours at German airports.

Moreover, it is necessary to interlink the more exact observations of individual flight events with improved calculations from airport traffic scenarios. In this way, the effects of noise reduction measures at airports could be evaluated and

The bar chart at left indicates the sum of the differences between the measured value and the threshold value at the three measuring points by type of aircraft (cumulated margin). Where necessary, the values based on the reduced maximum takeoff weight prevailing in flight operations are indicated. To allow a more transparent depiction, an improved method of analysis was developed which includes the individual noise certificate data of all Group aircraft for the first time. Different versions of an aircraft model and its engines by year of construction are thus better taken into account. While the conservative approach used in the past meant that only the values of the sub-fleet with the lowest cumulated margin were reported to describe an aircraft fleet, the new analytical method means that the value ranges from the lowest to the highest cumulated margin are now indicated for many fleets. In addition, many aircraft were recertified according to the new, more stringent ICAO Chapter-4 standard. The new noise certificates also take into account any modifications to aircraft or engines that have been made in the meantime, thereby leading to modified noise data and cumulated margins in certain cases.

- 4U = Germanwings
- BD = bmi
- C3 = Contact Air
- CL = Lufthansa CityLine
- EN = Air Dolomiti
- EW = Eurowings
- IQ = Augsburg Airways
- LH = Lufthansa Passenger Airline, Lufthansa Cargo
- LX = SWISS
- NG = Lauda Air
- OS = Austrian Airlines

assessed more reliably. Currently available airport traffic scenarios, however, cannot sufficiently incorporate the results of individual analyses. For this reason, the noise calculations used in these scenarios (for example, the AzB method according to the German aircraft noise protection act) should be improved and made more flexible. The DLR and other partners have already launched a Lufthansa-supported initiative to establish such a program as a DIN standard.

New thrust for noise research is needed

That final analysis of the measurement data from flyovers with a Boeing 747-400 has not yet been possible illustrates the need in Germany for further action in the areas of aircraft noise simulation, flight procedures and aircraft noise calculation – a need that unfortunately cannot be met for the moment. “Since the end of the interdisciplinary research project LAnAb in 2007, there has been no systematic support of research activities in the area of aircraft noise analysis, as other problem areas have taken centerstage owing to climate change concerns,” explains Saueressig.

Yet to be able to limit aircraft noise long-term, more accurate analytical tools are needed to assess flight procedures and indications from noise effect research. This is the prerequisite for experts in technical aircraft noise research to be able to move forward in a targeted manner. Simulation tools also have to be refined, both for individual flights and for airport traffic scenarios. This is the only way to evaluate noise reduction measures accurately. In summary, this means that new thrust is needed for noise research in Germany in order to find adequate solutions for the issues at hand.

Research at Lufthansa

Clarity for climate protection

As the only airline worldwide, Lufthansa has been committed continuously over the past 17 years to various climate research projects. Only target-oriented research allows an objective evaluation of the effects air transport has on our environment. This is why the airline supports a number of scientific projects, whose results form the basis of the

“We have been active in atmospheric research for 17 years – with visible accomplishments in weather forecasting and the validation of climate models.”

Dr. Andreas Waibel
Manager Group Environmental Issues at Lufthansa



Group's environmental care activities. In climate research, Lufthansa cooperates Germany-wide and Europe-wide with renowned scientific institutes.

Sulfur I and Sulfur II

In the context of the Sulfur I and II experiments carried out in 1996 and 1998, a Lufthansa Boeing 737-300 flew ahead of the Falcon research aircraft operated by the German Aerospace Center (DLR). The Boeing's tanks were filled with two different types of kerosene, one with a higher and the other with a lower sulfur content. The measuring aircraft traced the exhaust trail of the Lufthansa aircraft to examine the effect of sulfur in fuel on the generation of condensation trails. The researchers' data analysis showed that the combustion of fuel with a higher sulfur content led to a slightly earlier formation of contrails featuring a deeper hue. The sulfur research program was launched by the DLR in 1996 with support from the Federal Government and was ended in 1997. Kerosene contains very small quantities of sulfur (typically 0.03 percent). Three percent of this generates sulfuric acid, which can be measured as a cloud of many small droplets (a few nanometers in size) in the exhaust trail. These droplets may act as condensation cores and thus alter cloud patterns. Overall, it was demonstrated, however, that sulfur in fuel has much less of an effect on climate and ozone distribution than previously assumed.

Contrail

The Contrail experiments carried out in 1999 were designed to examine the effect of old and new engines on the generation of condensation trails. A Lufthansa Airbus A340-300 and a German Air Force Boeing 707 flew in formation – closely followed by the DLR Falcon research aircraft. The different types of contrail generation which were observed during the joint slow climb from warm into cold air masses started at an altitude 100 meters lower for the A340-300. Modern engines release less combustion heat into the exhaust due to their higher efficiency. The exhaust temperature is lower; as a result, contrails form earlier than is the case for older engines. However, as modern engines burn less fuel, they are more climate friendly.

Concert

The purpose of the Concert experiments in 2008 was to examine the influence of an aircraft's size on the physical properties of condensation trails, which in turn influence the atmosphere's radiation balance. Given the different wingspans, differences in the generation and composition of contrails are conceivable. The measurements showed that the physical size of contrails does indeed depend greatly on the aircraft. The larger and heavier an aircraft, the wider its contrails. Furthermore, different types of engines can lead to different types of soot emissions. In turn, soot particles determine the number and the size of ice particles in contrails. The fewer ice particles that form, the larger they become. Larger ice particles fall faster. Less soot, therefore, means more short-lived condensation trails.

MOZAIC

Through the EU research project MOZAIC (Measurement of ozone, water vapor, carbon monoxide and nitrogen oxides aboard Airbus in-service aircraft) Lufthansa has participated in the long-term observation of the atmosphere since 1993. In this project, scientists from Germany and France work closely with European airlines and aircraft manufacturers: They developed measuring instruments that have been in continuous operation on Airbus A340-300s for more than 15 years now, thus allowing a quasi global observation of the atmosphere at altitudes between zero and 12 kilometers. In 2009, two Lufthansa aircraft were in daily service for this project. Sensors on the aircraft's fuselage collect data on the atmospheric content of ozone, water vapor, carbon monoxide and nitrogen oxides, which then serve as the basis for making

global climate models more accurate. More than 32,000 measuring flights have been completed since the beginning of this long-term project. Using the resulting data, scientists have been able to validate and improve global climate models. Observations from MOZAIC have also led to a better understanding of cloud generation – and to more exact weather models and weather forecasts. A total of more than 150 scientific publications have been based on results from MOZAIC, while over 120 research groups worldwide work with the MOZAIC data pool. This has led to a number of surprising insights, which weather and climate models had either been unable or only partially able to predict. This includes the supersaturation of the upper troposphere with water vapor, which is decisive for understanding the generation of condensation trails and cirrus clouds. Other aspects are the often-observed extreme concentrations of ozone precursors (carbon monoxide and nitrogen oxides) in the upper troposphere, which are caused by forest fires and thunderstorms. The latest analysis of MOZAIC data appeared in the January 2010 issue of the renowned scientific magazine "Nature" and demonstrated impressively that the ozone levels above the United States are decisively influenced by precursor substances emitted in the Asian region. This thwarts local efforts in the U.S. to lower ozone concentrations.

→ <http://mozaic.aero.obs-mip.fr/web>

AMDAR

Through the weather-related project AMDAR (Aircraft Meteorological Data Relay) Lufthansa supports the World Meteorological Organization (WMO) and the German Weather Service. On all their flights, about 295 Lufthansa aircraft capture air temperatures, wind speeds and wind directions according to specific optimization criteria on behalf of the meteorological services. Since December 2006, some of these aircraft have also measured the atmosphere's humidity. The more data meteorologists have at their disposal, the more precisely they can forecast weather. These weather observations are available worldwide to all national meteorological services and flow directly into the calculations of weather and severe weather forecasts. Civil aviation also benefits, as accurate knowledge of weather conditions helps to calculate fuel-conserving flight routings and enables pilots to fly around zones of bad weather with greater precision.

→ www.wmo.int/amdar

CARIBIC

In the context of the EU research project CARIBIC (Civil Aircraft for the Regular Investigation of the atmosphere Based on an Instrument Container), Lufthansa has been committed to basic atmospheric research for many years. Participants in this long-term joint project include 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 Association) as well as two further partners in Germany and six in five other European countries. The project's goal is the investigation of the complex chemical and physical processes in the atmosphere – and thus our weather and climatic events.

Unique worldwide, this project based on a measurement container has made use of the Lufthansa Airbus A340-600 "Leverkusen" since December 2004 on intercontinental routes from Frankfurt. Once a month, the aircraft transports a fully-automated measuring laboratory weighing 1.6 tonnes in its cargo hold. Via its air inlet system, the container lab measures data on not only a number of trace elements and greenhouse gases but also the concentration and spatial distribution of aerosols. In

addition, the flying observatory takes photographs of clouds by means of an integrated camera.

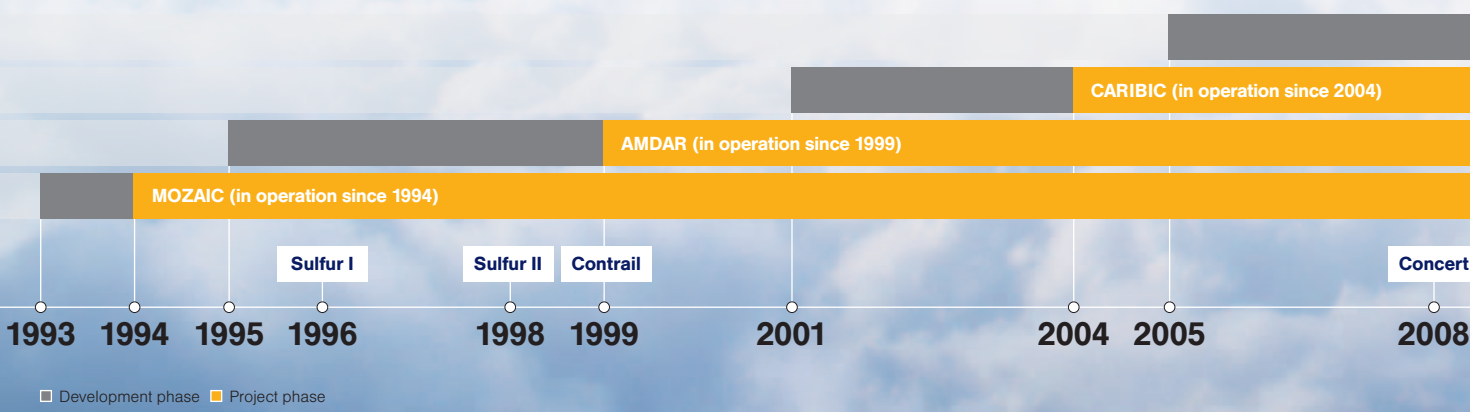
One area of emphasis for research is the comprehension of the cycles of greenhouse gases between their reservoirs – the oceans, land masses and biomass. Every year, enormous quantities of substances are exchanged between these stores. These substance cycles, and in particular the quantification of individual absorption and release processes, continue to pose many questions. The CARIBIC measurements have made it possible to add a piece to the puzzle. Researchers were able to quantify the absorption of CO₂ by vegetation during the monsoon period in the southern Asian region at 50 million tonnes of CO₂ per month. Beyond that, they calculated monthly absorption of methane at 1.5 million tonnes and of nitrous oxide (laughing gas) at 70,000 tonnes.

→ www.caribic-atmospheric.com

IAGOS

The project IAGOS (Integration of routine Aircraft measurements into a Global Observing System) is a further development of MOZAIC. The goal of this follow-up project is to create the long-term operating and financial conditions to continue the mea-

For almost two decades, Lufthansa has been actively involved in numerous climate research projects



IAGOS, the latest airborne climate research project, has been installed on a Lufthansa Airbus A340-300 since November 2009.



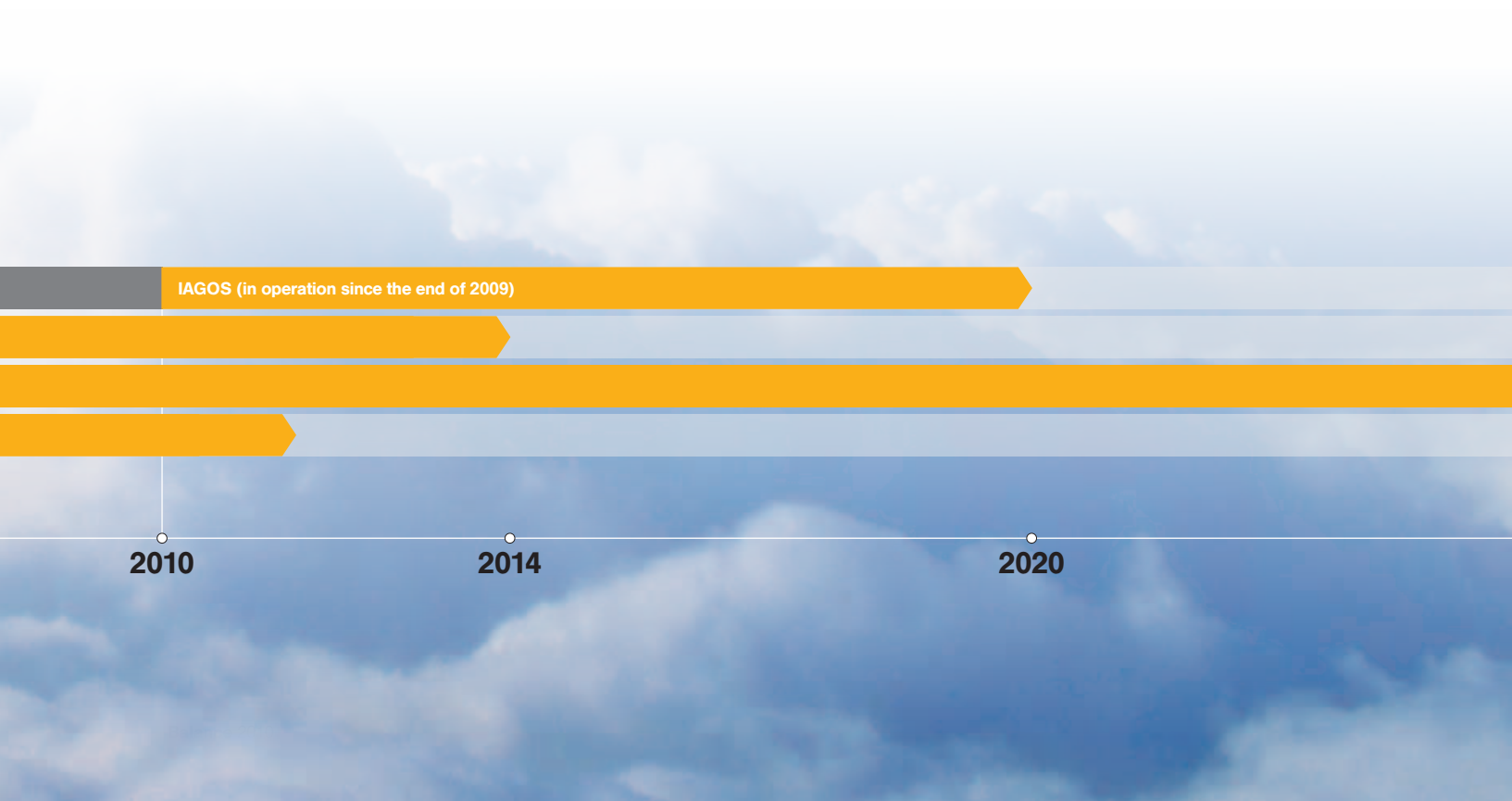
Monitoring series successfully begun in the context of MOZAIC over the long term and on a global scale. During a five-year development phase from 2005 to 2009, the partners from research and industry developed a new instrument package that is more lightweight, more robust and nearly maintenance-free. Since December 2009, this new measuring technology has been tested aboard a Lufthansa Airbus A340-300. Lufthansa and its project partners pursue the goal of jointly creating a worldwide measurement infrastructure that would allow the global observation of the Earth's atmosphere by means of civil aviation. Accordingly, the measurement devices serve to routinely capture atmospheric trace substances (and in future aero-

sols and cloud particles) while in flight – around the world and on a broad basis. The data generated by IAGOS are of central importance for climate research and numerical systems of weather forecasting.

→ www.iagos.org

→ www.fz-juelich.de/icg/icg-2/iagos

Beyond that, Lufthansa participates actively in a further range of research projects that aim to limit aircraft noise and improve engine performance. These include the EU research projects TBCplus, ERAT and SEFA; the EU network AERONET; and the research network "Quiet Traffic" with its projects LEXMOS, NASGeT, FREQUENZ and LAnAb.





Cycleclean Engine Wash: It takes small effort and very little time to mount the engine-cleaning mechanism and thus rid the turbine of pollution.

Lufthansa Technik intensifies research and development

Lufthansa Technik set up the department Technological Projects in April 2009 to bundle and intensify its numerous activities in the area of Research and Development (R&D). The new organization coordinates all research projects within the company that are supported by public authorities and ministries. Furthermore, the department serves as a contact partner for companies, universities and research institutions. "At the moment we're looking after about 25 projects, usually linked to at least one university institute," reports Dr. Franz-Josef Kirschfink, Director of the Technology Projects department. The spectrum of research projects varies widely, as the following examples show:

In the framework of the project CO₂ Dry Ice, Lufthansa Technik is working on the further development of Cycleclean Engine Wash, its efficient process for cleaning aircraft engines (see *Balance*, issue 2009, page 60). In future, using dry ice will allow independence from the ambient temperature and an even more thorough cleaning of turbines – and thus lower kerosene consumption.

The goal of the project LOTUSARP is to cut back kerosene consumption and emissions by optimizing the compressor index. To achieve this goal, experts at Lufthansa Technik are developing a 3D flow simulation that takes all influences into

account. In this way, the best possible combination of potential measures involving repair and refinement of compressor components can be determined at all times.

In the project Digital Cabin Model, Lufthansa Technik depicts an entire cabin in a VR model (virtual reality). This gives the experts the possibility of examining an individual component digitally for its accuracy of fit before it is manufactured. As a result, repeated manufacturing steps or total reconstructions can be avoided and thus the realization period considerably shortened.

In the context of the project CompoSEAT, Lufthansa Technik is developing a modular VIP and First Class seating concept using high-performance composite-fiber materials to lower overall seat weight considerably. It is expected that this concept can be applied to seats in Business and Economy Class later on.

Beyond that, Lufthansa Technik is committed to fuel cell research and supports the German Aerospace Center (DLR) in two important projects: In the framework of ANTARES, the DLR's experts are testing the options of using fuel cells under real-life conditions. Using a fuel cell, a manned motor glider took off, flew and landed for the first time under its own power on July 7, 2009 in Hamburg. Further test flights are to be conducted from the site of Lufthansa Technik. And in the project ELBASYS, Lufthansa Technik supports the DLR in the deployment of a fuel cell aboard an Airbus A320 to provide the energy supply during flight and more.

Together with the City of Hamburg and Airbus, Lufthansa Technik founded the Center for Applied Aviation Research (ZAL) in July 2009. One area of emphasis pursued by this institution is fuel cell research for aircraft.

The Lufthansa Group

Social responsibility

Environment

Corporate citizenship

Glossary

Corporate citizenship

Environmental Sponsorship Program

Education

Biodiversity

Cargo Human Care

Rainforestation farming

Species protection

Living Lakes

HelpAlliance

Miles to Help

Airline of sports

Lufthansa Festival of Baroque Music

Corporate citizenship

Acting sustainably for people, environment and culture

In 2009, Lufthansa again supported a multitude of projects and thus assumed its social responsibility. In taking an active part in society, the Group has committed itself to five areas: culture, social issues, education, sports, and environmental sponsorship. To ensure that this commitment produces the desired effects, the company bundles its resources into selected projects which allow comprehensive management control.

Culture

Anniversary: 25 years of the Lufthansa Festival of Baroque Music in London – the “indispensable festival”

1984, London, Piccadilly. Lufthansa maintains a representative city office just off Piccadilly Circus. Directly across the street is an architectural masterpiece by Sir Christopher Wren, the baroque church of St. James's, built in 1684. The church's

“Director of Music” is the young harpsichord player and conductor Ivor Bolton, whose wife is the Cambridge musicologist Tess Knighton.

At the suggestion of the vicar, Reverend Reeves, the congregation attempts to generate enthusiasm for the idea of organizing concerts at this wonderful church with exceptional acoustics among the neighboring shops and company offices. Not a simple proposition, but Lufthansa takes up the idea because it sees a good opportunity for inviting its best customers to a cultural event of a special kind. Supported by the expertise of Ivor Bolton and Tess Knighton, a convincing start from the



Lufthansa Festival of Baroque Music 2009: Ivor Bolton conducted the Concerto Köln and the Balthasar Neumann Choir in Händel's oratorium “Athalia.” Coloratura soprano Simone Kermes sang the title role.

word go was made with a small series of concerts featuring baroque music, played according to historical performing practices. The foundations for the Lufthansa Festival of Baroque Music were laid.

In May 2009, the festival celebrated the 25th anniversary of its founding. Many things have changed since then: The Lufthansa office has moved to a new location, Reverend Reeves has long since taken his much deserved retirement, and the artistic direction has passed from Tess Knighton first to Kate Bolton and then to Lindsay Kemp. In addition, the concert venues have expanded to St. John's Smith Square and Westminster Abbey, and the festival has grown to ten to twelve concerts each year. Other things have not changed: Ivor Bolton is still the Musical Director, the consistent commitment to historical performance practices is still applied, and the Festival still attracts outstanding performers. Every year, the best in their field delight the very demanding London public, which always includes Lufthansa status customers. But the concertgoers are not the only members of the festival's "congregation": The BBC broadcasts on Radio 3 reach about 800,000 listeners around the world. This media partnership is just as valuable as the partnership with business partner Rolls-Royce plc. It very convincingly represents a joint corporate citizenship, as here two companies committed to the highest levels of quality complement each other excellently in an topflight cultural involvement.

The jubilee program: Under the motto "1659 –1759: Hundred Years of English Genius," the festival's focus was on Henry Purcell and Georg Friedrich Händel. The artistically glorious time between Henry Purcell's birth year (1659) and Georg Friedrich Händel's death year (1759) was illuminated musically. The results: An enthusiastic audience and an equally delighted press in the jubilee year as well. And when The Daily Telegraph describes the Lufthansa Festival of Baroque Music as "indispensable," this fills us with great pleasure. As a premium carrier, Lufthansa loves competition. If we are able to compete successfully even in the demanding music metropolis of London, this confirms the acceptance of our consistent orientation toward quality.

In 2010, the 26th Lufthansa Festival of Baroque Music is using the 400th anniversary of the creation of Monteverdi's Vespers as an occasion to draw attention to the pioneering work of the Italian

composers of the 17th century and their influence on the development of Western music. The motto is "Fountain of the Baroque." And the performers include La Venexiana, Paolo Pandolfo, the Gabrieli Consort, the European Union Baroque Orchestra and several newcomers, such as Baroque Fever from Denmark.

→ www.lufthansafestival.org.uk

Lufthansa New Year's Concert: Festive atmosphere in Berlin

For the 13th time, Lufthansa invited guests to its traditional New Year's Concert in Berlin. On January 18, 2010, about 1,200 guests accepted the invitation. In addition to Lufthansa status customers, the list included celebrities from business, politics, diplomacy and culture, heads of companies and associations, and executives from the aviation industry. From the podium of Berlin's



Konzerthaus am Gendarmenmarkt, the RIAS Youth Orchestra delighted the audience with a virtuoso performance of works by Wagner, Rachmaninoff and Sibelius.

Social projects

The HelpAlliance in its tenth year: more donations, more support, more ideas



On September 22, 2009, the HelpAlliance celebrated its tenth year of existence. About 450 Group employees, supporters and friends met for an anniversary celebration at the Lufthansa Training & Conference Center in Seeheim to look back together over a decade of successful charitable work. Sabine Weber, spouse of the Chairman of the Supervisory Board, Jürgen Weber, and long-time patroness of the association, took the evening as an occasion for a generational change and passed the staff of her patronage to Bettina Lauer, spouse of the Chief Officer Group Airlines and Corporate Human Resources, Stefan Lauer.

Group expands support

Lufthansa has firmly supported the HelpAlliance since its founding in 1999. For instance, the Group promotes the involvement of the employee organization with full-time special leave for two employees – including First Chairwoman Rita Diop – and with part-time special leave for a colleague from flight operations. In addition, it provides free-of-charge office space including communications



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

While the donation volume from the on-board collection program “Small Change – It’s a Big Help” continued to decline in 2009, the massive downward trend could be stopped. This positive signal is a result above all of the numerous HelpAlliance activities during its anniversary year. The on-board collection program allows Lufthansa and Condor passengers on long-haul flights back to Germany with coins and bank notes in foreign currency to donate this money for a good cause. This option has been offered since May 2001. There are small sealable envelopes for this purpose in the seat pockets; the cabin crews collect and forward these to the HelpAlliance. Donations can also be inserted in the special pillars in the employee areas and Lufthansa lounges at German airports and in the public areas of the Frankfurt and Munich hubs.

infrastructure at Frankfurt Airport as well as transport capacities. The internal and external Lufthansa media support the association’s communications efforts and reporting by publishing editorial contributions. During the anniversary year Lufthansa again expanded its support. The Group sponsored a full-page advertisement in Lufthansa’s European timetable, displayed the HelpAlliance logo on advertising space on the ground and in the air, and financed a press trip to India, where journalists spent a week gathering information on site about the HelpAlliance project “Patenschaftskreis Indien e.V.” And in Thailand Rita Diop accepted a cheque for 20,000 euros from Thierry Antinori, Member of the Lufthansa German Airlines Board responsible for Marketing and Sales. This donation went to benefit an orphanage in Pattaya, a long-term HelpAlliance project.

Information offer expanded

The HelpAlliance intensified its communications activities significantly during the anniversary year. One important building block was expanding the information it offers on the intranet and Internet. The website was also given a fresh design and a new technical base. To give Lufthansa employees an opportunity to get information directly from the project managers about the efforts they support on location, a campaign week took place at the Lufthansa Aviation Center in Frankfurt. And in March, the starting signal was given for a ten-part HelpAlliance quiz on the intranet and in the staff newspaper Lufthanset. The goal here was to further increase awareness of the HelpAlliance across the Group.

Rise in donations despite economic crisis

The broad attention granted to the HelpAlliance during its anniversary year did not fail to have an effect. “Even though 2009 was marked by the world economic crisis, we were able to increase the donation volume by almost 100,000 euros

On-board collection program

Development of donation volumes

2001	€ 207,175
2002	€ 203,692
2003	€ 216,539
2004	€ 238,023
2005	€ 294,870
2006	€ 279,575
2007	€ 260,939
2008	€ 230,433
2009	€ 224,053

Start of Condor’s participation: October 2003

All figures quoted in this article for 2009 are preliminary, as the final figures were not available by the copy deadline.





Township project
iThemba School
Capricorn: Preschool
children are delighted
by the opening of their
new schoolhouse.

over the previous year's figure, to a total of 735,000 euros," reports Rita Diop. The number of Supporting Members also developed positively: In 2009 alone, 200 people decided in favor of a Supporting Membership – twice as many as the year before.

Core projects during the anniversary year

Special attention was given during the anniversary year to a township project in the South African metropolis of Cape Town. On the vacant lot of the iThemba School Capricorn, the HelpAlliance was able to finance the construction of a preschool building made of prefabricated elements, featuring three classrooms, a kitchen, an office and a playground. Since January 2010, 50 boys and girls up to the age of six have learned subjects such as English there, thereby improving their chances for education and participation in society. The foundation stone was laid by a donation from the soccer branch of the Lufthansa Sports Association in Cologne. This was followed by a call for project-dedicated donations from Miles to Help – with an overwhelming response. "Originally, the miles were only intended to finance the furniture. But thanks to the generously donated award miles from Lufthansa customers, we were able to pay for the construction of a complete building," confirms the First Chairwoman. Miles to Help offers participants in the frequent flyer program Miles & More the opportunity to donate their award miles for charitable causes.

A short profile – The HelpAlliance

The aid organization "HelpAlliance e.V. – Employees lend a helping hand" was founded in September 1999 by socially committed employees from all parts of the Lufthansa Group. On December 31, 2009, the association counted 13 full members and 1,346 Supporting Members; in addition, there is a worldwide network of internal and external volunteer helpers. The members come from all company areas and get involved personally, voluntarily and globally to support business startups, street-kid projects, educational institutions, orphanages and bush hospitals. Since its foundation, the humanitarian community initiative has successfully supported more than 60 projects. The emphasis is on the areas of education, health and nutrition and consistently follows the guiding principle of "helping others to help themselves." The projects are divided into long-term HelpAlliance projects, short-term event-related supported projects and emergency aid. Most geographical areas of involvement are located on the southern half of the globe, especially in Africa, Asia and South America.

→ www.help-alliance.com

Another area of emphasis in 2009 was emergency aid. One of the events that called for the involvement of the HelpAlliance was in the Central American nation of El Salvador, where tropical storm "Ida" caused severe devastation and more than 120 deaths in November. The help organization also provided humanitarian emergency aid in the Philippines. There, tropical storm "Ketsana" caused the heaviest flooding in 40 years in September, killing almost 280 people and leaving half a million without shelter. Moreover, the HelpAlliance is currently searching for suitable partners in Indonesia to be able to provide long-term aid there as well, following a series of strong earthquakes in fall 2009.

Difficult to do without it: The Ideas Pool

The Ideas Pool has evolved into an indispensable pillar of fundraising – the third alongside the on-board-collection program "Small Change – It's a Big Help" (see text box on page 74) and Miles to Help. Creative Lufthansa employees generated several ten thousands of euros for the HelpAlliance during the reporting year alone, by organizing flea markets, baking cakes, or drumming up support for the employee organization's causes at department festivities. That this much enthusiasm also radiates to other Group companies was proven in April 2009 by the cabin crews at Eurowings with their donation to a project in Brazil that supports undernourished and malnourished children.

Cargo Human Care expands its involvement

Basic medical care for the people in many African countries still remains the exception – as is the case in Kenya. To help sick people in that country's capital, Nairobi, quickly and unbureaucratically, employees at Lufthansa Cargo joined forces with German physicians in 2004 to set up Cargo Human Care e.V. (CHC). At the center of this aid project are two institutions: the Medical Center at the SOS Children's Village in Buru Buru and the Mothers' Mercy Home (MMH) in Kianjogu,



north of Nairobi. The Lufthansa Cargo management has supported the humanitarian project from the start (see insert on this page).

Three more specialist consultation hours

In February 2009, the CHC inaugurated a medical ward in the newly constructed orphanage on the site of the Mothers' Mercy Home. The Medical Center opened its doors for business on April 1. Eight full-time employees have since then looked after patients in two treatment rooms and by means of an onsite pharmacy. In 2009, they received support from 32 German physicians, including gynecologists, ear-nose-and-throat specialists, dentists, pediatricians, ophthalmologists and general practitioners. A contract signed in April 2009 with the nearby Nazareth Hospital allows hospitalization, treatment and operations for seriously ill patients. During the reporting year, the

A short profile – Cargo Human Care e.V.

The idea to found Cargo Human Care (CHC) can be attributed to Fokko Doyen, Chief Pilot MD-11F at Lufthansa Cargo and CHC's First Chairman. After he had discovered by chance the AIDS orphanage Mothers' Mercy Home on the outskirts of Nairobi, he decided to help. Cargo Human Care is recognized as a charitable aid organization and finances itself exclusively from donations. The CHC board includes seven members in addition to Fokko Doyen. At the end of 2009, the association counted 215 members. Lufthansa Cargo has supported CHC since its foundation in 2004 with free tickets for the physicians. They fly to Africa three times a month for three days each to treat above all acute, but also chronic illnesses on a volunteer basis. Additionally, the company provides sufficient transport capacities aboard its MD-11 freighter aircraft. This guarantees that medical instruments and other urgently needed relief supplies get to their destination in the fastest way possible. Lufthansa Cargo also assumes the costs for one employee serving a Voluntary Social Year. This person not only coordinates the public relations work for Cargo Human Care but also looks after the numerous administrative tasks, leaving the board members free for other work.

→ www.cargohumancare.de

CHC expanded the Medical Center's range of activities by three more specialist consultation hours: Since then, the Center not only offers inoculations and medical checkups for expectant mothers but also supports those who seek advice on all questions of family planning.

Planned for 2010: An addition to the Medical Center

"The Medical Center at Mothers' Mercy Home has evolved into an important place to go for many poor and sick Nairobians," says Fokko Doyen, Chief Pilot MD-11F at Lufthansa Cargo and founder of Cargo Human Care, assessing the situation. "Every month we treat 800 to 1,000 people for whom basic medical care was unaffordable until now." Between April and November 2009, the Center treated a total of 7,473 patients, including 4,975 women and 2,498 men; beyond that, 287 patients were sent to the Nazareth Hospital for inpatient treatment.

Given the great demand, the Medical Center reached the limits of its capacity just a few months after its opening. For this reason, Cargo Human Care is planning to construct an addition in the course of 2010. It is to provide more space for the pharmacy and offer more – and above all more spacious – treatment rooms.

Help for street kids in Ghana

Since 2009, Cargo Human Care has expressed its solidarity with the people of Africa also in the West African country of Ghana. There, the humanitarian aid organization helped finance the construction of a home for orphans and street kids initiated by the association Nima e.V. Since October 2009, the "One Love Children's Home" has offered a new home to 20 children, who used to live on their own in the streets but are now looked after lovingly by four female caregivers. The health of the boys and girls, who now receive regular meals and attend either a day-care center or a school, has improved significantly after just a few months. The building complex is set up for 24 children.

A home for every child: SWISS strengthens SOS Children's Villages

Poverty, armed conflicts, violence and abuse hit children especially hard. This is why the management, employees and customers of SWISS have supported the SOS Children's Villages for many years. The independent international children's aid organization gives a new home to abandoned children worldwide and strengthens the position of poor families. The passengers of SWISS, which has been part of the Lufthansa Group since July 1, 2007, donate about 200,000 Swiss francs per year for the benefit of the development aid organization. Additionally, the passengers' willingness to make donations made it possible to build the "SWISS House" in Dar es Salaam, the 13th family house of this SOS Children's Village in Tanzania. The life necessities of the orphans housed there are provided by the "Foundation Children's Aid of SWISS Personnel," which is financed by voluntary contributions from the company's employees. Additionally, they regularly collect money to benefit SOS Children's Villages by means of raffles at employee festivities and get personally involved in smaller projects in many countries. The SOS Children's Villages also receive support from Miles to Help, which gives participants in the frequent flyer program Miles & More the option to donate their mileage credits for charitable purposes.

→ www.sos-kinderdoerfer.de

Education

"Experience Knowledge": The Lufthansa educational DVD appreciated worldwide

With the aid of the interactive educational DVD "Experience Knowledge," students in grades 8 to 10 have explored the fascinating world of aviation since May 2008. Lufthansa developed this educational initiative – which is guided by the curricula in biology, physics, chemistry, geography, work science, politics and economics – jointly with the Ministry of Education and Cultural Affairs of the state of Hesse. Demand for this multimedia teaching material continued unabated in 2009. "Almost two years after the DVD's launch, we still get new requests every day. And more and more often they come from all around the world," reports Sabine Heß from Public Relations at



Lufthansa's educational DVD "Experience Knowledge"

Lufthansa. The reason: This innovative educational offer provides not only captivating insights into the world of knowledge surrounding aviation but also valuable support in learning German as a foreign language. For this reason, Lufthansa has made the educational DVD available free of charge to all Goethe Institutes worldwide. In this way, it now enlivens German lessons at times and is also available in the Institutes' libraries.

→ www.lufthansa.com/erlebnis-wissen

Consistent educational concept: business@school

Most school curricula do not sufficiently cover the teaching of economic contexts. To remedy this shortcoming and to awaken the enthusiasm for economic subjects in students in grades 10 to 13, the consulting firm Boston Consulting Group founded business@school in 1998. Lufthansa has supported this educational initiative – in which over 70 high schools in Germany, Austria, Switzerland, Singapore, Italy and Norway participate – since 2002.



For the school year 2009/2010, a total of 36 Lufthansa employees have agreed to take on a school sponsorship and exchange their office for a classroom for four to six days. During this time, these volunteer teachers impart valuable competencies such as team work or time management and pass on some of their own professional experience. Furthermore, they support the high-school students in developing their own business ideas. The best ideas are presented at the regional and then the European finals, and awarded prizes by a jury composed of renowned representatives from business.

In the previous project year 2008/2009, executives from the Lufthansa Passenger Airlines also participated as jury members. Additionally, the Group sponsored attractive prizes, such as participation in the training “A successful start in professional life,” which Lufthansa designed specifically for the participants in the regional finals in the state of Hesse. The winning team enjoyed a full-day look behind the scenes of Lufthansa’s activities at Munich Airport. → www.business-at-school.de

School’s in for equal opportunity: “Teach First Deutschland”

Lufthansa has supported the charitable initiative “Teach First Deutschland” since 2008, as the first DAX-30 company to get involved in this project. Teach First aims at creating better educational opportunities for all children and young people with unfavorable starting conditions. By enabling additional, competent teaching staff (fellows) to become active for two years at challenged schools in socially troubled areas, Teach First Deutschland supports the schools and thus advances the students.

Since the start of the school year 2009/2010, the first-year fellows have been active at schools in Berlin, Hamburg and North-Rhine/Westphalia. About 70 personally and academically high-achieving university graduates are on assignment there. The Lufthansa School of Business supports this involvement with free seminars for these new teachers. In addition, the staff of Teach First and the fellows have the option of using Lufthansa’s 360-degree feedback tool.

→ www.teachfirst.de

Supporting the school-to-work transition: Hamburg’s “Hauptschulmodell”

Graduates of Germany’s “Hauptschulen” (secondary schools) often have great difficulties in finding vocational training positions. To make their search easier and to provide them with a perspective for the future, Lufthansa Technical Training – a wholly-owned subsidiary of Lufthansa Technik – has participated since 2005 in the Hamburg model for vocational secondary schools. This initiative was founded in 2000. Its goal is to place young people who leave school after completing the 9th grade in a vocational training position that corresponds to their abilities and interests. The Hamburg model for secondary schools is based on a three-tiered concept in which schools, job agencies and partner companies cooperate closely.

In the framework of this initiative, the young people are first accepted for a six-month course at Lufthansa Technik’s training workshop. During this time, they also attend a vocational school one day a week. This is followed by three months of practical training. Only then is it decided whether they are to be accepted for an apprenticeship. So far, 75 large companies, numerous small companies and almost 100 secondary and comprehensive schools have joined this initiative. Success proves the Hamburg model a winner: Since its start in 2001, the ratio of students who found a vocational training position directly after graduating from vocational secondary school has tripled from 6.7 percent to 18.8 percent (as per February 2009).

→ www.arbeitsstiftung.de



In the presence of DOSB President Thomas Bach, Thierry Antinori, Member of the Lufthansa German Airlines Board responsible for Marketing and Sales, bids farewell to the athletes of the German Olympic team before their flight to Vancouver.

Sports

Lufthansa – The “Airline of Sports”

Without financial support from the state and business, high-performance sport is often not possible. For this reason, Lufthansa has been an active partner of sports for many years and has supported among others the German Sports Aid Foundation (GSAF) since 2007 as its first “National Sponsor.” To complement this commitment, Lufthansa increased the number of its sponsorships within the GSAF’s patronage program for highly talented young athletes from five to ten in 2008. With an eye on the 2010 Winter Olympic Games in Vancouver, Lufthansa accompanied three young athletes competing in disciplines including Nordic combination, Alpine skiing and biathlon on their way to the summit in sports. All three were able to crown their participation by winning a medal. The patronage program is in addition to the basic support of the GSAF and thus allows an intensive preparation for the Olympic Games and other international competitions. In addition, Lufthansa regularly supports GSAF-organized events, including the “Golden Sports Pyramid,” the “Sports Ball,” the “Festival of Encounter” and the “Elite Forum” in Liebenberg. The GSAF campaign launched in January 2010 with the slogan “Your name for Germany” also receives broad support from Lufthansa employees, passengers and customers in its aim to generate additional funds for high-performance sports.

Beyond its social commitment to the German Sports Aid Foundation, Lufthansa has supported both Olympic and Paralympic athletes for many years. In 2008, Lufthansa extended its contracts

with the German Olympic Sports Confederation (DOSB) and the German Paralympic Sports Confederation (DBS) and thus accompanied the German teams to the Winter Games 2010 in Vancouver. Since January 2010, Lufthansa has also been a National Sponsor of the organization bidding for the Winter Games 2018 in Munich.

As the “Airline of Sports,” Lufthansa supports associations, clubs and teams traveling to international sports events and also participates in selected world and European championships held in Germany.

The different facets of Lufthansa’s commitment to sports are described in the current brochure “Lufthansa – Airline des Sports” (available in German only).

→ www.lufthansa.com/verantwortung

In addition, Lufthansa has compiled everything sports fans might want to know about sports events on its Internet page.

→ www.lufthansa.com/fanflug

Environmental Sponsorship Program

Lufthansa cooperates with over ten national and international nature conservation and environmental protection associations in numerous projects that aim at preserving biological diversity. In the foreground are activities concerning species protection, especially for migrating animal species and their threatened habitats.

Tea that creates jobs

In western China, there is an herbal remedy against the cultivation of opium: the tea tree. *Camellia sinensis*, as the shrub growing to a height of up to 20 meters is called botanically, is at the center of a project that the Foundation NatureLife-International has supported since 2007 with aid from the Lufthansa Environmental Sponsorship Program. The goal is to establish a sustainable agricultural system in areas of western China bordering with Laos and Myanmar, and thus



Traditional picker: All types of black and green tea trace back to the tea which originated in the Bulang Mountains.

to lessen the effects of years of overcultivation. Due to decades of cultivated monocultures of rubber trees and the now-forbidden opium poppies, many primeval rain forests have disappeared, along with most of the ancient tea trees.

The Bulang Mountains: Cradle of all varieties of black tea

In the context of this project, NatureLife-International is primarily involved with the Tian Zi Biodiversity Research and Development Center in the Bulang Mountains. Together with the Bulang Heritage Foundation, the organization is working first to renature an area of six square kilometers that contains remnants of primeval forests of tea trees. An ethnic minority, the Bulang, cares for the trees, some of which are more than 100 years old, scattered in the remains of oak and laurel tree forests at altitudes above 1,500 meters. All of today's varieties of black and green tea trace back to these trees. According to legend, the Bulang people were the first, more than 3,000 years ago, to brew a tasty tea from the freshly picked camellia leaves.

Tried-and-tested method: Rainforestation Farming

In the process of reforestation, the existing remnants of forests are supplemented and transformed into species-rich secondary forests, each hectare of which binds between 250 and 300 tonnes of carbon dioxide over a period of ten years. The area's renaturing is achieved on the basis of Rainforestation Farming. In a pilot project coordinated by NatureLife-International, Hohenheim University and the Visayas State University, this method was developed on the island of Leyte in the Philippines with support from Lufthansa. The special feature of Rainforestation Farming is that it combines the elements of organic farming without fertilizer and pesticides with those of

near-natural forestry. "If everything works well, we'll be able to transform about another thousand square kilometers into a species-rich natural paradise in the years ahead by using this method," enthuses Claus-Peter Hutter, President of NatureLife-International.

Preserve traditions, create jobs

But the project does more than make a substantial contribution to the protection of nature, species and climate as well as the preservation of biological diversity. It also preserves cultural traditions and creates jobs that give the rural population an economic perspective. Today, people in the region cultivate more than 100 different tree and shrub species – including numerous spices (such as cinnamon and ginger), medicinal plants and the gold orchid. The blossoms and leaves of this particular botanical rarity originate 100 percent from certified collections in the wild and newly-established cultivations. In the future, they are also to delight tea lovers in neighboring countries in southeast Asia as well as in Germany and France. The expectations placed on the projects in the Bulang Mountains are high: "In just a few years, revenues from reforestation are to reach ten to twelve times the amount that the inhabitants of this region gained from cultivating opium," says Minguo Li of the Tian Zi Biodiversity Research and Development Center.

Concepts for sustainable large-scale events

The environmental foundation NatureLife-International is also in the process of developing concepts to establish sustainability in the management of large-scale events. Lufthansa supports these activities, which are specifically designed for younger target groups.

The goal is to make concrete suggestions to the organizers of large events on how they can appreciably reduce their energy consumption and thus their CO₂ emissions. Examples are sustainable food concepts, CO₂-neutral energy supply and concepts for ecologically compatible ways for participants to reach the event. In summer 2008, NatureLife-International produced a short film with support from Lufthansa to be shown at large events. Using a modern visual vocabulary, this video aims at raising awareness of global climate change. In 2009, the short film was shown at numerous concerts and festivals in southern Germany.

→ www.naturelife-international.org

Many partners, one goal: Crane protection at Lufthansa

The continuing destruction of their natural habitats has pushed 11 of the 15 crane species worldwide to the brink of extinction. As the airline bearing the “bird of luck” in its corporate logo, crane protection is a concern that lies close to Lufthansa’s heart. For more than 30 years, the Lufthansa Environmental Sponsorship Program has worked for the lasting preservation of their breeding, resting

“Measures to maintain biological diversity are at the center of our Environmental Sponsorship Program. We are placing even greater emphasis on these in 2010, the International Year of Biodiversity.”

Lutz Laemmerhold
Director Public Relations at Lufthansa



and gathering areas. Because the protection of migratory species such as the cranes requires cross-border concepts, the company cooperates closely with national and international nature and species protection organizations.



**Kranichschutz
Deutschland**

At the center of this commitment is the Crane Protection Germany Working Group, which Lufthansa founded together with Naturschutzbund Deutschland (NABU) and the environmental foundation WWF Deutschland in 1991. Support is given above all to the Crane Information Center in Groß Mohrdorf (see portrait of the Center on page 82), which serves as a departure point for spectacular crane observations for more than 15,000 visitors a year.

New domicile for the Crane Information Center

To be able to handle the rising number of visitors in the future as well, the organization is planning to move the Crane Information Center to a significantly larger facility. Its new domicile will be a former monastery barn with a surface of 900 square meters in Günz, only 4 kilometers away. The building will be extensively renovated with EU funds in the years ahead. In addition, an observation platform for up to 100 people is being planned. The two measures are intended to replace the originally planned “European Crane Center,” which was stopped for cost reasons due to the economic development.

In 2009, Lufthansa again supported the Crane Protection Germany Working Group in its crane monitoring in Ethiopia. In the framework of a several-week study – the second after 2007 – the researchers discovered a previously unknown sleeping area that is used by more than 10,000 cranes at Lake Tana. These findings are of great importance for the protection of this internationally significant wetland.

The traveling exhibit “Magic of the Cranes” continues to circulate

Moreover, Lufthansa was involved in the creation of the traveling exhibit “Magic of the Cranes,” which was first shown in 2005 at Frankfurt’s Senckenberg Museum for Natural History. The centerpiece of this unique show are large-scale photographs of all the world’s crane species by photographers Carl-Albrecht von Treuenfels and Sture Traneving. These are accompanied by testimony to the traces that these majestic large birds have left in art, culture and myths. In 2009, the traveling exhibit made a tour stop in Dresden; in 2010, it opened its doors in the city of Augsburg.

→ www.kraniche.de

Lufthansa and EuroNatur oppose the hunting of migratory birds

In 2009, the EuroNatur photo competition “Europe’s Nature Treasures” took place for the 16th time. It is organized by the charitable foundation EuroNatur together with Lufthansa, the magazine natur+kosmos and the nature-film festival “NaturVision.” The 12 most beautiful impressions of European flora, fauna and landscapes were included in the 2010 edition of the EuroNatur wall calendar. The revenues from its sale benefit the foundation’s nature protection projects. One area of emphasis in 2009 was the campaign “Crime scene Adria – Bird hunting in the Balkans,” which Lufthansa supported with communication and logistical means. Along the coastal areas between Slovenia and Albania, bird hunters pursue migratory birds, killing millions of animals every year. Therefore, the campaign’s goal is to create a public debate and international pressure on the states along the Adriatic migratory route. The reason: Only if this route is secure and the birds find intact resting areas will the costly protection measures in the breeding areas be successful in the long term. Discovered only a few years ago, the

A Eurasian crane and chick in their nest in a northern German alder grove.



Adriatic migration route leads diagonally across the Balkans and the Adriatic Sea to Africa. It also passes over the area of the Balkan Green Belt, a cross-border project led by EuroNatur, which is also supported by Germany's Federal Office for Nature Conservation (BfN). In order to report about the campaign's progress, EuroNatur and Lufthansa also invited journalists to participate in an informational trip to Albania in 2009.

→ www.euronatur.org
 → www.greenbalkans.org
 → www.bfn.de

Backing for animal globetrotters: The Bonn Convention

On their way to wintering and breeding areas, migratory animal species cross countries, continents and oceans year after year. There are an estimated 8,000 to 10,000 of these species worldwide, including cranes, antelopes and marine mammals. Since 1979, the Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS) has worked to protect the resting and feeding areas along their migration routes over the long term.

Lufthansa again endows research prize

To support the concerns of the Bonn Convention, Lufthansa together with the magazine National Geographic Deutschland first endowed an international dissertation prize in 2004. Presented every three years, the goal of this award is to gain deeper insights into the biology and behavior of nomadic animal species and to ensure their survival by means of appropriate protection measures. In April 2010, the Bonn Convention published its invitation to participate in the "UNEP/CMS Thesis Award" for the third time; it will be presented in November 2011. Offering prize money of 10,000 euros, this research award honors young researchers who have rendered special services to the protection of migratory animal species.

In addition to the Crane Protection Germany Working Group, Lufthansa supports the crane protection projects of the following nature and species conservation organizations:

EURONATUR



EuroNatur Foundation

Project countries: Spain and Israel
 → www.euronatur.org

Society for the Protection of Nature in Israel (SPNI)

Project country: Israel
 → www.birds.org.il

NatureLife-International

Project country: South Africa
 → www.naturelife-international.org

International Crane Foundation

Project country: USA, worldwide
 → www.savingcranes.org

South African Crane Working Group

Project country: South Africa
 → www.ewt.org.za

A portrait of the Crane Information Center

The Crane Information Center was founded in 1996 in Groß Mohrdorf, in the Rügen-Bock region of Mecklenburg-Western Pomerania, where it still has its headquarters today. Up to 70,000 cranes per year make a stopover of several weeks here on their way to wintering areas in France, Spain, Portugal and northwestern Africa. Run by the Crane Protection Germany Working Group and supported by Lufthansa, this institution is open all year and offers a free permanent exhibit covering a surface of 140 square meters on the life and biology of these majestic large birds – including informative displays, audiovisual media and taxidermic specimens. Furthermore, visitors receive information about optimum observation spots and current migrations. Events such as the "Week of the Crane," which takes place in September of every year, complement the offer for bird lovers. The director of the Crane Information Center is Dr. Günter Nowald, who is assisted by a team of three full-time employees, three seasonally employed rangers and 15 volunteer employees. Together with the management team, the Professional Board of the Crane Protection Germany Working Group and about 300 volunteer helpers, they coordinate national and international protection measures. Their standard projects include restoring the wet character of irrigated breeding places, "distraction feedings" to prevent agricultural damage, and setting up and maintaining information boards in resting areas. Additionally, the Center organizes scientific crane monitorings and an annual crane conference, and it carries out far-reaching public relations work. The 7th European Crane Conference will take place from October 14 to 17, 2010 in Stralsund and is organized by the Crane Information Center.

→ www.kraniche.de

“Friends of CMS” stand up for gorillas

The Red List of endangered species of the International Union for Conservation of Nature and Natural Resources (IUCN) shows three of four gorilla subspecies as “threatened by extinction.” To prevent this fate, the United Nations declared 2009 as the “UN Year of the Gorilla.” As a founding member of the supporting circle “Friends of CMS,” which includes representatives from business, politics, science and culture, Lufthansa promoted a partnership contract between the Frankfurt Zoological Society and the UNEP/CMS Secretariat of the United Nations. Signed on the occasion of the UN species protection conference in Rome in December 2008, the agreement aimed at bundling the forces of both organizations during the UN Year of the Gorilla for the benefit of threatened animal species.



In addition, Lufthansa sponsored the international scientific gorilla symposium “Gentle Giants in Distress.” More than 200 experts and government representatives from 20 countries discussed possible solutions to protect anthropoid apes and their habitats on June 9 and 10, 2009 in Frankfurt. In the “Frankfurt Declaration,” the symposium participants called for active opposition to the destruction of rain forests, poaching of animals and the uncontrolled exploitation of resources.

→ www.cms.int

→ www.friendsofcms.de

Lufthansa promotes a global exchange of expertise

Successful nature and species protection assumes a cross-border exchange of expertise. For this reason, Lufthansa has supported the professional dialogue of the Frankfurt Zoological Society (ZGF) with nature and species protection organizations in Germany and abroad since 2007. One important building block is support for the transfer of knowledge between developing and emerging nations, which the aviation company facilitates by providing transportation. The Frankfurt Zoological Society is a nature protection organization with international activities, whose main working emphasis lies in eastern Africa. Its activities go back to Bernhard Grzimek – veterinarian, behavioral researcher and longtime president of the ZGF.

→ www.zgf.de



Network for the protection of lakes: Lufthansa supports Living Lakes

Clean water is not a given: According to United Nations estimates, more than 1.4 billion people worldwide have too little or polluted drinking water. To protect the Earth’s most ecologically valuable



bodies of fresh water as reservoirs of drinking water and as habitats for threatened animals and plants, the environmental foundation Global Nature Fund (GNF) founded the international lake network Living Lakes in 1998. At the end of 2009, it comprised 65 lakes and wetlands on

five continents, including Lake Constance, Lake Victoria in Africa and Biwa Lake, the largest lake in Japan. Lufthansa has supported the initiative right from its start with financing, logistics and communications. It also promotes the exchange of experiences between the network’s partner organizations and their nature protection projects on location.

Lufthansa customers donate award miles to “Trees for Life”

One of these projects is “Trees for Life,” which the Living Lakes partner Wildlands Trust launched in South Africa in 2004. Its goal is the reforestation of indigenous tree species in rural areas to increase biodiversity and to open up a source of revenue for the local populations. “Trees for Life” is primarily aimed at jobless youths, orphans and single parents, who are trained to become tree entrepreneurs, the “tree-preneurs,” who plant trees in public spaces such as around schools and hospitals. The training of tree entrepreneurs takes place decentrally in the different project regions and imparts composting and watering techniques along with fundamental ecological contexts. For each sapling the tree-preneurs successfully grow, they receive a bonus, which they can exchange for food, hygiene articles and other items necessary for everyday life.

The initiative Miles to Help, introduced by Miles & More in November 2006, allows participants in the Lufthansa frequent flyer program to donate their award miles for the “Trees for Life” project and other options. Since the start of



"Trees for Life" gives tree entrepreneurs an economic perspective.

Miles to Help, the tree entrepreneurs have planted 32,000 saplings in the project region KwaJobe alone. In the community of Buffelsdraai in the Greater Durban Area, more than 200 tree-preneurs contributed to making the FIFA 2010 World Cup in South Africa climate-neutral: By July 2010, they will have cultivated 82,000 trees on 150 hectares of former forest.

→ www.miles-and-more.com/milestohelp

Living Lakes conference in Mexico

Lufthansa was the central sponsor of the 13th Living Lakes Conference in March 2010 in Mexico. At the center of this international forum, which takes place every two years, were proposed solutions for an appropriate management of lakes and wetlands in accordance with agreements including the 1971 "Agreement on wetlands, especially as a habitat for waterfowl and waders, of international importance," also known as the Ramsar Convention. Lufthansa supports this exchange between experts as a logistics partner and in other ways.

→ www.globalnature.org

Safe and species-appropriate animal transport

Lufthansa Cargo transports "living freight" only if the rules of the "Live Animal Regulations" of the International Air Transport Association (IATA), the worldwide industry organization of airlines, are met and the shipment is in accord with the Washington Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). Each of the more than 20,000 annual animal shipments is preceded by a strict verification procedure. Animals without official proof of origin do not travel, nor do animals caught in the wild. The same yardstick is applied to those animals threatened by extinction, whose trade is forbidden according to Annex 1 of CITES. The only exception is made for shipments between zoos.

In addition, the "Frankfurt Animal Lounge," the new animal handling center which Lufthansa Cargo inaugurated in February 2008, meets the stringent EU rules concerning hygiene and veterinary medicine. Here, the freight airline demonstrates its high standards of quality and capacity for innovation once again. On a surface covering almost 4,000 square meters, all departments necessary for handling shipments in harmony with animals' specific needs are located closely together.

Glossary

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

AEA Association of European Airlines.
→ www.aea.be

ASPI Advanced Sustainable Performance Indices. Lufthansa features in the ASPI Index, which was set up in 2001. This index depicts the financial performance of the 120 best companies of the Dow Jones EURO STOXX according to the criteria of sustainability. The prerequisite for being listed in the ASPI Index is the systematic integration of the long-term interests of stakeholders in the context of corporate policy, strategy and activities. The index is run by the agency Vigeo in cooperation with Stoxx Ltd.
→ www.vigeo.com

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. 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 contribute to the reduction of 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

BDI Bundesverband der Deutschen Industrie e.V. (Federal Association of German Industry)
→ www.bdi-online.de

BDLI Bundesverband der Deutschen Luft- und Raumfahrtindustrie e.V. (Federal Association of German Aviation and Space Industry)
→ www.bdlid.de

Cabin Service Manual Work instructions and work-role definitions pertaining to the cabin as a workplace.

Carbon dioxide (CO₂) 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 CO₂ remains for about 100 years in the atmosphere. Scientists attribute the increase of atmospheric CO₂ 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 CO₂ result from the combustion process. Currently, about 2 percent of man-made CO₂ emissions are due to worldwide air traffic. (Source: IPCC/WRI 2007)

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.

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 depend on the aircraft's maximum takeoff weight and number of engines.

CO see "Carbon monoxide"

CO₂ see "Carbon dioxide"

Compliance Compliance describes the entirety of all measures that ensure the lawful conduct of companies, their management bodies and their employees with regard to legal directives and interdictions.

Corporate University Corporate education institution for professionals and managers. See also Lufthansa School of Business (LHSB).

Customer Profile Index (CPI) The Lufthansa Passenger Airlines, in cooperation with renowned institutes, continuously conduct worldwide surveys and thus assess the level of customer satisfaction. These data are compiled in the Customer Profile Index, which informs the entire company in the form of a single figure about the current status of customer satisfaction.

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.

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 600 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

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

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 2009.

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 is a founding member of this cross-industry network, which was set up in 2000.
→ www.econsense.de

EMAS Environmental Management and Audit Scheme, colloquially referred to as EU eco-audit regulations. European regulations concerning environmental management and certification.

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.

Ethibel Ethibel Sustainability Index. The independent Belgian agency Ethibel has listed Lufthansa in its Ethibel Investment Register and the Ethibel Sustainability Index (ESI). The ESI offers institutional investors, asset managers, banks and investors a comprehensive overview of the financial results of companies that distinguish themselves by pursuing sustainable business practices. Since the merger with Vigeo and Stock at Stake in 2005, this index is part of Vigeo. However, Forum Ethibel continues to be responsible for the ethical criteria and the composition of the ESI. Updates of and calculations for the index are performed by the internationally renowned index provider Standard & Poor's.
→ www.ethibel.org

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.
→ www.ftse4good.com

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.

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

Great Circle Distance Shortest distance between two points on the Earth's surface, measured in kilometers (great circle kilometers) or nautical miles. The center of a great circle is the center of the Earth.

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 (H₂O), carbon dioxide (CO₂) and methane (CH₄); 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 (N₂O), fluorocarbons (FCs and HFCs), sulfur hexafluoride (SF₆) and chlorofluorocarbons (CFCs). Source: World Resources Institute (WRI), 2005.

IATA International Air Transport Association. The umbrella organization of international commercial aviation.
→ www.iata.org

ICAO International Civil Aviation Organization. A United Nations agency that develops internationally binding norms for civil aviation.
→ 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

IFRIC The International Financial Reporting Interpretations Committee (IFRIC) is a group within the framework of the International Accounting Standards Committee Foundation (IASC). The IFRIC was founded in December 2001 as part of IASC reorganization as successor to the Standing Interpretations Committee. The group comprises 12 members. It is the IFRIC's task to publish interpretations of IFRS and IAS accounting standards in cases where evidence shows that a standard is open to different interpretations or to misinterpretation, or where existing standards do not sufficiently acknowledge new facts.
→ www.iasb.org

IFRS International Financial Reporting Standards.

ILO standards Work standards of the International Labor Organization, which include among others the bans on child labor, forced labor and discrimination as well as the fundamental right of freedom of association for employees.

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

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). The latest worldwide scientific, technical and socio-economic

information, relevant for climate change, are analyzed and processed to advance the understanding of climate change.
→ www.ipcc.ch

ISO 14001 International environmental management system. Companies hereby receive an effective instrument that allows them to take environmental aspects into consideration in decisions relating to corporate policies and to continuously improve the situation of environmental care in relation to all daily tasks.
→ 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.

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.

Mentoring Instrument for targeted support of junior employees. Focuses on regular personal contacts between mentor and mentee.

M.O.B.I.L.I.S. An internal weight-reduction program for employees whose body-mass index is either between 25 and 30 (M.O.B.I.L.I.S. light) or beyond 30.

MRO Acronym standing for maintenance, repair and overhaul of aircraft.

MTOW Acronym standing for maximum takeoff weight of an aircraft.

Nitrogen oxides (NO_x) Chemical compounds consisting of one nitrogen and several oxygen atoms. NO_x is defined as the sum of NO and NO₂ 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_x 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_x emissions. Climate models show that nitrogen oxides have increased the concentration of ozone at cruising altitudes by a few percentage points.

NO_x see "Nitrogen oxides"

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 (O₃) 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.

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 kilometer Measure for the transport capacity available (SKO, seat kilometers offered).

Seat load factor (SLF) 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.

Stakeholder 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.

Tonne kilometer (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

UHC see "Unburned hydrocarbons"

UNEP The United Nations Environmental Program.

→ www.unep.org

UN Global Compact see Global Compact

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.

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 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.

WRI World Resources Institute, founded in 1982 as a nonprofit organization. This independent environmental think tank has its headquarters in Washington, D.C. and is concerned with subjects related to global warming, diverse ecosystems, government systems and structures, renewable energies and the use of resources. The WRI's work goes beyond scientific research and aims at finding pragmatic solutions to protect the environment, advance sustainable development and improve people's general life situation.

→ www.wri.org

Editorial information**Published by**

Deutsche Lufthansa AG
Corporate Communications, FRA CI
Senior Vice President: Klaus Walther

Project management

Public Relations, FRA CI/B
E-mail: public-relations@dlh.de

Concept, text and editors

Public Relations, FRA CI/B,
in cooperation with various departments
and Petra Menke Redaktionsbüro

Design and production

Dennerlein Branding und Design
F&L Plus GmbH

Copy deadline

March 30, 2010

Photo credits

Cover photo: e²m, P. Masclet, Airbus
(picture editing: Lufthansa)
Airbus (p. 45)
Jens Allendorff (p. 75)
Boeing (p. 64)
Cargo Human Care, Jens Görlich (p. 76)
Flughafen München GmbH (p. 8)
Global Nature Fund (p. 84)
HelpAlliance, Rolf Wenzel (p. 74)
NatureLife-International (pp. 71, 80)
Carl-Albrecht von Treuenfels (p. 82)
Others: Lufthansa photo archive

Paper

Content: ENVIRO TOP, recycling paper made from
100 % recycled paper. Produced without optical brightening
agents, without chlorine bleach. Certificate: Environmental
label RAL UZ14 "Blue Angel."
Cover: LuxoSamtoffset, FSC-certified.

Printing process

Balance was produced using the computer-to-plate printing
process.

Reprints, including excerpts, only with written permission from
the publisher and by citing "Deutsche Lufthansa AG" as the
source (text and images). In this case we ask that you send us a
copy or clipping.

Printed in the Federal Republic of Germany
ISSN 1612-0906

Contact partners

Environment

Group Environmental Issues

Dr. Karlheinz Haag

Head of Group Environmental Issues
Telephone: +49 (0) 69/696-949 74
karlheinz.haag@dlh.de

Jan-Ole Jacobs

Environmental Management
Telephone: +49 (0) 30/8875-30 20
ole.jacobs@dlh.de

Dr. Gerd Saueressig

Noise Research
Telephone: +49 (0) 69/696-908 90
gerd.saueressig@dlh.de

Dr. Andreas Waibel

Emissions/Climate
Telephone: +49 (0) 69/696-938 16
andreas.waibel@dlh.de

Jürgen Briese

Cosmic Radiation
Telephone: +49 (0) 69/696-939 64
juergen.briese@dlh.de

Corporate Communications

Stefanie Stotz

Team Leader Corporate and Finance
Communications
Telephone: +49 (0) 69/696-510 14
stefanie.stotz@dlh.de

Dr. Peter Schneckenleitner

Spokesman Politics, Environment
and Sustainability
Telephone: +49 (0) 69/696-949 69
peter.schneckenleitner@dlh.de

Environmental Sponsorship Program

Lutz Laemmerhold

Director Public Relations
Telephone: +49 (0) 69/696-633 51
lutz.laemmerhold@dlh.de

Human Resources/Social Issues

Group Human Resources Policies

Dr. Martin Schmitt

Senior Vice President Executive Personnel
Telephone: +49 (0) 69/696-623 28
martin.schmitt@dlh.de

Monika Rühl

Director Change Management and Diversity
Telephone: +49 (0) 69/696-283 00
monika.ruehl@dlh.de

Employee Safety

Dr. Michael Hammerschmidt

Telephone: +49 (0) 40/5070-27 50
michael.hammerschmidt@dlh.de

Bernd Schröder

Telephone: +49 (0) 40/5070-20 95
bernd.schroeder@dlh.de

HelpAlliance e. V.

Rita Diop

First Chairwoman
Telephone: +49 (0) 69/696-478 72
rita.diop@dlh.de

Cargo Human Care e. V.

Fokko Doyen

First Chairman
fokko.doyen@dlh.de

Investor Relations

Frank Hülsmann

Senior Vice President Investor Relations
Telephone: +49 (0) 69/696-280 01
investor.relations@dlh.de

Jobst Honig

Investor Relations Manager
Telephone: +49 (0) 69/696-280 11
jobst.honig@dlh.de

Lufthansa Group companies

You can find contact partners in the
Lufthansa Group companies at:

→ www.lufthansa.com/responsibility

Deutsche Lufthansa AG
Corporate Communications
60546 Frankfurt am Main
Germany

Balance is a registered title.

© April 2010 – www.lufthansa.com/responsibility

