



Issue 2016

Balance

Key data on sustainability within the Lufthansa Group

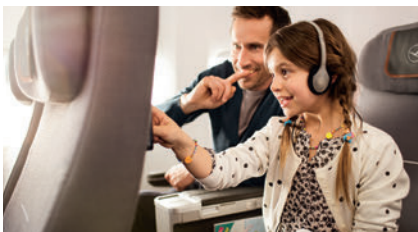


Cover story

Changing working environment

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About this report

Balance, the Lufthansa Group's Sustainability Report, informs stakeholders and the interested public about the Group's goals, activities and advances in the areas of business, social responsibility, environment, product and corporate citizenship. The data presented in this report complements and expands the information contained in the Annual Report 2015.

Across the Lufthansa Group, Corporate Responsibility is understood to comprise the following dimensions:

- Economic sustainability
- Corporate governance and compliance
- Climate and environmental responsibility
- Social responsibility
- Product responsibility
- Corporate citizenship

Reporting follows and is oriented by the internationally accepted G4 Sustainability Reporting Guidelines of the Global Reporting Initiative. This publication also serves as a progress report concerning the implementation of the ten principles set out in the UN Global Compact, which the Lufthansa Group joined in 2002. The Group determined the significant sustainability issues in the framework of a materiality analysis, which are based on the results of a stakeholder survey.

Scope of consolidation and comparability

Unless noted otherwise, the data in this report refers to the financial year 2015. You will find explanations concerning the scope of consolidation and calculation methods used to determine the absolute and specific resource consumption at the Lufthansa Group on page 116. This report covers the activities of the Lufthansa Group. Reporting restricted to individual Group companies is indicated in the copy. Due to changes in the portfolio over recent years, the figures for personnel and environmental performance cited in this report are only to a limited extent comparable with those repor-

ted for previous years. There are also certain differences in approach compared to the Annual Report when calculating passenger numbers and their derivative performance indicators (see explanations relating to the overview on page 2, At a glance).

Publication dates of this report

Balance, the Lufthansa Group's Sustainability Report, is published once a year in German and in English. The preceding edition was published on July 20, 2015. The Group has regularly reported about its environmental performance since 1994 and has continuously expanded its reporting to the other dimensions of entrepreneurial responsibility.

Additional information on the Internet

In addition to this report, the Lufthansa Group informs readers via the Internet about its activities in the area of sustainability:

www.lufthansagroup.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, can, could, should or endeavor*. These

forward-looking statements are based on all the discernible information, facts and expectations available at the time. It is possible that the Group's actual results and development may differ materially from the forward-looking statements implied by the forecasts. The Lufthansa Group assumes no obligation for and does not intend 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.

1 Taken from the Annual Report 2015 of the Lufthansa Group. **2** For the reporting year 2015, the following companies have been included in *Balance*: Lufthansa (including Lufthansa CityLine, Air Dolomiti and Eurowings), Germanwings, Lufthansa Cargo, Swiss (including Edelweiss Air) and Austrian Airlines. Excluding the services of third parties as Lufthansa can influence neither performance nor the equipment operated (see also table "Share of third parties" on page 43). **3** Types of flights taken into account: all scheduled and charter flights. **4** See also table "Fuel consumption" on page 43. **5** *Balance*: segments (operational perspective); Annual Report: distance (customer perspective). One distance can include several segments, e.g. in the event of stops en route. **6** *Balance*: on the basis of all passengers aboard; Annual Report: on the basis of all revenue passengers. **7** Companies referred to as in 2, but including the services of third parties, as these contribute to the Group's results. Types of flights as in 3, but including ferry flights, as these represent costs.

At a glance

// 2

Business performance data¹		2015	2014	Change
Revenue	million €	32,056	30,011	+6.8%
of which traffic revenue	million €	25,322	24,388	+3.8%
EBIT	million €	1,676	1,000	+67.6%
Adjusted EBIT	million €	1,817	1,171	+55.2%
EBITDA	million €	3,395	2,530	+34.2%
Net profit/loss for the period	million €	1,698	55	+2,987.3%
Total assets	million €	32,462	30,474	+6.5%
Cash flow from operating activities	million €	3,393	1,977	+71.6%
Capital expenditure (gross)	million €	2,569	2,777	-7.5%
Equity ratio	percent	18.0	13.2	+4.8PP

Personnel data		2015	2014	Change
Number of employees (on December 31, respectively)		120,652	118,781	+1.6%
of these, in Germany		66,920	67,155	-0.3%
of these, outside Germany		53,732	51,626	+4.1%
Staff costs	million €	8,075	7,335	+10.1%
Revenue/employee	thousand €	268	252	+6.3%
Staff costs/revenue	percent	25.2	24.4	+0.8PP
Average age	years	42.3	42.3	± 0.0 years
Part-time ratio, absolute	percent	28.8	28.0	+0.8PP
Part-time ratio, men	percent	14.9	14.3	+0.6PP
Part-time ratio, women	percent	45.7	45.0	+0.7PP
Share of women in management (Germany)	percent	16.2	16.0	+0.2PP
Share of women in management (worldwide)	percent	14.9	14.2	+0.7PP

Environmental data^{2,3}		2015	2014	Change
Resource consumption				
Fuel consumption ⁴	tonnes	8,947,766	8,825,744	+1.4%
Fuel consumption, specific, passenger transportation	l/100 pkm	3.84	3.84	± 0.0%
Fuel consumption, specific, freight transport	g/tkm	225	221	+1.9%
Emissions				
Carbon dioxide emissions	tonnes	28,185,463	27,801,092	+1.4%
Carbon dioxide emissions, specific, passenger transportation	kg/100 pkm	9.69	9.69	± 0.0%
Nitrogen oxide emissions	tonnes	135,447	132,257	+2.4%
Nitrogen oxide emissions, specific, passenger transportation	g/100 pkm	46.3	45.8	+1.1%
Carbon monoxide emissions	tonnes	19,137	19,251	-0.6%
Carbon monoxide emissions, specific, passenger transportation	g/100 pkm	7.1	7.3	-2.6%
Unburned hydrocarbons	tonnes	1,858.8	1,952.5	-4.8%
Unburned hydrocarbons, specific, passenger transportation	g/100 pkm	0.7	0.7	-5.7%

Transport performance data		Balance ^{2,3}	± 2014	Annual Report ⁷	± 2014
Flights ⁵		931,188	-2.4%	1,003,660	+0.2%
Passengers carried ⁶		104,558,264	+0.5%	107,679,000	+1.6%
Freight and mail carried	tonnes	1,861,205	-3.1%	1,864,078	-3.1%
Seat kilometers offered, SKO	million pkm	270,803	+1.7%	273,975	+2.2%
Freight tonne kilometers offered, FTKO	million tkm	14,619	+2.2%	14,971	+2.1%
Tonne kilometers offered, TKO	million tkm	41,702	+1.9%	42,424	+2.1%
Passenger kilometers transported, PKT ⁶	million pkm	223,761	+2.0%	220,400	+2.7%
Freight tonne kilometers transported (incl. third-party performance), FTKT	million tkm	9,173	-2.5%	9,930	-3.1%
Tonne kilometers transported, TKT	million tkm	31,623	+0.7%	31,518	+0.7%

Dear Readers,

This latest issue of *Balance* marks our 22nd year of reporting on the wide range of activities and initiatives that we undertake and implement every day to ensure the sustainability of our entrepreneurial actions. More than two decades ago, we were still among the pioneers with this kind of reporting. In the future, the disclosure of information about non-financial measures and ratios will be legally binding in the European Union for listed companies as well as others. The fact that Lufthansa has published this report since 1994 demonstrates that we are innovative trailblazers in this area as well.

We maintain a particular focus on the future viability of our Company. In the strategic program "7to1 – Our Way Forward", launched two years ago, we designated seven fields of action and thus laid the foundations for improved results over the long-term and the successful future development of the Lufthansa Group as a whole. The issue of safety has and will always have the top priority in all that we do. Yet our next most important corporate goal is future viability. Last year, we made a great deal of progress in this area.

Another key point on our agenda is our responsibility to protect climate and the environment. This is reflected in the diverse programs that follow the established four-pillar strategy, which comprises technological, operative, infrastructural and economic measures. The specific consumption of our airlines in 2015 remained stable at the previous year's record value of 3.84 liters of kerosene per passenger and 100 kilometers. This year we are phasing 52 new and particularly fuel-efficient aircraft into service – arithmetically, we take delivery of one new aircraft per week. Thus we continue to pursue our long-term fleet modernization – the largest in our Company's history. In early 2016 we became the first commercial airline to operate the Airbus A320neo – a particularly quiet and fuel-efficient aircraft. With the new Bombardier CSeries at Swiss, another exceptionally fuel-efficient aircraft will join our fleet this summer. And the third new type of aircraft, the Airbus A350, is set to follow this coming winter in Munich.

In this issue of *Balance*, the title is dedicated neither to our aircraft nor to our technical innovations, but to the people who move our Company forward each day and who make mobility possible in the first place by fulfilling their tasks in the air and on the ground: our 120,000 employees worldwide. We provide you insights into the fascinating worlds of all our Group's business areas. We address the issue of change in the working world and its related challenges, including for our human resources management. And we report with no small satisfaction that last year as well 130,000 young people applied to become part of our team.

By joining the UN Global Compact in 2002, we reinforced our voluntary commitment to assume our responsibility in the environmental and social areas alongside that for economical aspects. This also embraces our unwavering commitment to social issues in general.

Discover in this issue of *Balance* more about how we meet our social responsibility as the world's leading aviation group. I thank you for your interest in our work and wish you a sustainably captivating read.



Carsten Spohr
Chairman of the Executive Board and CEO
Deutsche Lufthansa AG



"In this issue of *Balance*, the title is dedicated neither to our aircraft nor to our technical innovations, but to the people who move our Company forward each day and who make mobility possible in the first place by fulfilling their tasks in the air and on the ground: our 120,000 employees worldwide."

Carsten Spohr

The Lufthansa Group

The Lufthansa Group is the world's leading aviation group. Its portfolio of companies consists of premium network airlines; the Eurowings Group, which offers point-to-point connections as the Lufthansa Group's complementary brand; and the aviation service companies. Deutsche Lufthansa AG comprises about 540 subsidiaries and affiliated companies.

In 2015, the Lufthansa Group's airlines carried 107.7 million passengers and thus established a new passenger record.

The Group's organization was realigned with effect from January 1, 2016. This new orientation is accompanied by tighter interlocking between business segments and stronger functional steering for the entire organization.

 www.lufthansagroup.com

The positioning of the Lufthansa Group

Lufthansa Group

First choice for customers, employees, shareholders and partners

Hub airlines

The Group's premium airlines – Lufthansa, Swiss and Austrian Airlines – offer their customers an integrated travel experience via their hubs along with the highest levels of service and comfort. As members in the Star Alliance, the world's largest aviation alliance, they guarantee their passengers numerous advantages.

www.LH.com

www.swiss.com

www.austrian.com



Eurowings Group

With the new Eurowings the Lufthansa Group has offered an innovative and competitive product for price-sensitive customers since 2015. The goal is to position Eurowings as the market leading point-to-point airline in the Lufthansa Group's home markets.

www.eurowings.com



Aviation services

As leaders in the world market, the service companies strengthen the Lufthansa Group's portfolio.

Lufthansa Cargo

Lufthansa Cargo AG, with headquarters in Frankfurt, is the Lufthansa Group's specialist for logistics and Europe's leading cargo airline.

www.lufthansa-cargo.com

Lufthansa Technik

Lufthansa Technik AG, with headquarters in Hamburg, is the worldwide leader in the areas of maintenance, repair and overhaul of commercial aircraft.

www.lufthansa-technik.com

LSGgroup

The LSG Group is the world's largest provider of services in airline catering and in-flight management. The group's parent company, LSG Lufthansa Service Holding AG, is headquartered in Neu-Isenburg.

www.lsgskychefs.com

At a glance

Corporate headquarters

Cologne

Legal form

stock corporation

Number of employees on 31.12.2015

120,652

Number of nationalities

146

Number of passengers in 2015

107,679,000

Hubs

Frankfurt, Munich, Zurich,
Vienna, Brussels

Number of aircraft in the Group's fleet

600

Freight/mail carried in 2015

> 1.86 million tonnes

Number of destinations (summer timetable 2016)

316 cities in 101 countries



A day at the Lufthansa Group



295,011

passengers we carry.



1.6 million

meals we provide.



5,107

tonnes of freight we transport.



1,700

aircraft we support.



2,750

times we take off and land.

CHANGING WORKING ENVIRONMENT



The world is turning faster and faster: Social megatrends such as technological progress and the advancing digitalization of numerous processes have a great influence on today's working environment. Furthermore, the upcoming generation of job-seekers demand from their employers more leeway and greater flexibility in shaping their everyday working situation. The Lufthansa Group is adapting to these changes in a consistent manner. It is providing modern, virtual and flexible work structures while relying more on a self-motivated and trust-based work culture. Even against the background of such demographic change, the Lufthansa Group will in this way succeed to attract the right talent and thus to secure its future viability and competitiveness.

One constant in all this change? Working at the Lufthansa Group is and will remain fascinating and multi-faceted. Every day, 120,000 employees from about 150 nations ensure the Company's success with great passion. The goal: To be first choice in aviation. Welcome to the world of the Lufthansa Group!



2016
4,000
new hires
for the Lufthansa
Group's future viability
and competitiveness



2015
120,000
employees



Fascination Lufthansa Group

Around 130,000 applications a year – the fascination for the Lufthansa Group is as unabated as that for aviation. That the aviation group has been one of Germany's most attractive employers for many years is confirmed not only by the numerous job applications but also by a broad range of awards and top slots in renowned employer rankings. For example, according to the Graduate Barometer of market research institute Trendence, the Lufthansa Group again counted among the six most popular employers for German economics graduates in 2015. For future engineers, Lufthansa Technik ranked number eight. In addition, the Lufthansa Group received the first prize in the category "Best career website" in Trendence's Employer Branding Award. Every year, about 1.5 million interested parties and job applicants visit www.Be-Lufthansa.com. During the reporting year, Swiss received the quality seal "Friendly Work Space", a recognition for companies that have integrated corporate healthcare management (CHM) into their strategy (see cover, Corporate Responsibility: Prizes, awards and indices).

#LHGROUP #EMPLOYERRANKING



More than 4,000 new employees in 2016

Be it as chefs at LSG Sky Chefs, engine mechanics at Lufthansa Technik, software developers at Lufthansa Systems, flight attendants at Swiss or pilots at Austrian Airlines: The Lufthansa Group offers a broad scope of employment opportunities on the ground and in the air. In 2016 alone, the Group will hire more than 4,000 new employees, including 2,800 flight attendants at various locations and about 240 pilots. While employees and managers benefit from comprehensive continued education offers, new young employees can choose from a large number of training-based professions. The spectrum ranges from specialists for system gastronomy and tool mechanics to specialists for warehouse logistics, whereby technical professions such as aircraft part mechanics or electronics technicians for technical aviation systems traditionally draw the largest share. Such has been the case for 60 years: On April 3, 1956, Lufthansa Technik began training technical apprentices in Hamburg – and since then has smoothed the path into professional life for about 9,000 young people.

#CAREER #BELUFTHANSA

Eminent visitor: Chancellor Dr. Angela Merkel in conversation with apprentices at the Lufthansa Group.



Job rotation: On the occasion of "60 Years of Training", Lufthansa Technik chief human resources officer Antonio Schulthess changes a tire with professional guidance from an apprentice.

Diverse development opportunities

Working at the Lufthansa Group has many facets. But people are always at the center of the Company's corporate culture. The Lufthansa Group's employees are characterized by their high level of professional qualifications as well as by motivation, ability to perform and flexibility. They think in innovative dimensions, make decisions quickly and implement their tasks in consistent ways. The Lufthansa Group places its trust in a corporate culture that aligns the work environment more and more with the employees' requirements. The Group gives its employees more latitude to structure their working environment as fits them best. Work-life integration, home office, new workspace, flexible work-time models and job sharing are but a few examples of this approach. Equally important is the talent management philosophy the Lufthansa Group developed in 2014 under the maxim "Every employee has talent!" (see page 83, *Balance* 2015). It also contributes to a working environment that helps employees shape their own development more and more independently.

#CORPORATECULTURE



Visible esteem:
Under the motto "Faces of Swiss", the first Boeing 777-300ER operated by Swiss has been dedicated to its employees.

Yearly
130,000
applications
via Be-Lufthansa.com

Working at the Lufthansa Group

Be-Lufthansa.com is the gateway to the Lufthansa Group. In place since 2002, this award-winning career portal offers visitors the best possible service in searching for "their" job. Potential applicants find information on job vacancies and training openings as well as details on the Group companies and the application process. At the same time, this Internet page gives visitors a feel for what it means to be part of the Lufthansa Group. Alongside this career portal, the Group's HR experts are present at numerous information events and recruiting fairs to give prospective applicants an understanding of the Lufthansa Group's attractiveness. The Company's own information days and its cooperations with universities complement the Group's personnel marketing activities.

Via Be-Lufthansa.com, which continuously integrates modern communications channels and thus personalizes communications, the Lufthansa Group has increasingly aligned in recent years its recruiting strategy with the needs of young people in order to address the "digital natives" of generations Y and Z via their preferred communications channels. This includes live chats, e-books, career blogs, social media channels and job-specific videos.

www.Be-Lufthansa.com

WE INQUIRED

Employees from different companies across the Lufthansa Group provide insights into their professional worlds and explain what is especially important to them, what fascinates them and which are their employer's best points.



BARBARA HOTZ
Manager Environmental Affairs
at Austrian Airlines in Vienna

“The fascinating part of my work is to find ecologically sensible and credible solutions for the aviation industry within an economic framework. As a mother of two small children I also place great emphasis on the compatibility of job and family – this is possible for me by working part-time and being able to choose flexible work times. Also important for me are an independent work style and good cooperation – both within the team and Group-wide. Daily work with my colleagues is characterized by commitment, professionalism and loyalty, and above all by endurance, humor and friendliness as well.”



HOLGER FRÖHLICH
Team leader at Lufthansa Technik in Frankfurt

“At Lufthansa Technik, safety and professionalism are always given the top rank, but social commitment is quite important as well. As a team leader in aircraft maintenance, I also place great value on team spirit, professional competency and the willingness to assume responsibility. This is an aspiration I share with my colleagues. The complex technology of system components is a new challenge every day – in my job regular continuing education is therefore indispensable and the name of the game. Despite more than 40 years in the airline business, it never fails to fascinate me that aircraft weighing many tonnes take off and land again safely. It's great that I've been able to make a contribution to this for many years!”



LISA ANTONOPOULOS
General Manager at LSG Sky Chefs
in Johannesburg

“‘Inspired’ is the word that best describes how I feel at LSG Sky Chefs. Our industry is challenging and the international environment within our organization is fascinating. This keeps me mentally stimulated every day. I want to achieve something and the LSG Group supports me in this. I am very passionate about continuous improvement closely linked with skill development and training.”



SHANEL TALARICO
Flight attendant at Eurowings Europe

“My time at Eurowings Europe began in November 2015, about two months after I moved from Italy, my home country, to Vienna. Dynamism, movement, contact with people, new challenges: These are the reasons why I am so enthusiastic about my work every day. What makes a difference at Eurowings Europe is what every single employee thinks. This creates the strong unity that makes it possible to build a great European airline.”



YIFENG WANG
Sales Executive at Lufthansa Cargo
in Shanghai

“In my daily work it’s important for me to listen attentively and comprehend the customer’s needs, and provide the effective airfreight solution based on Lufthansa Cargo’s fruitful products and professional handling procedure. Lufthansa Cargo is an open and international company, in which the various training and team spirit is in favor of personal career development.”



JENNIFER KNECHT
First Officer Airbus A330/340 at Swiss

“The most important consideration for me is good cooperation and communication within the crew. I believe this is a characteristic of Swiss – where safety of course always has top priority. For me this also implies actively taking responsibility. And then there is flying itself: It is an unbelievable sensation to pilot a plane. The technical complexity, the operational challenges and the breathtaking views fascinate me every time anew. I am also really enthusiastic about travelling to different countries. Again and again I discover new destinations, cultures and people.”



Think the future, meet new challenges, live out responsibility.

Digitalization and demographic change lead to an evolution in the working environment from the ground up. On the other hand, the next generation of employees has its own expectations concerning the working environment (see interview on this double page).

Under the motto “Think the future, meet new challenges, live out responsibility” the Lufthansa Group faces these defining social developments with measures such as concepts for open workspace models and diverse offers concerning digitalization. The Group relies on an independent and trust-based work culture in connection with modern information technology to create an attractive and need-oriented working environment. This concept helps to secure the Lufthansa Group’s future viability and its ability to create added value. For the Company’s employees are a significant factor for its success.

#LHGROUP #CHANGE

Added value for employees and Company alike

Diversity and equal opportunities are among the central principles of the aviation group. The employees’ diverse talents, experiences and competencies make an important contribution to expanding the Lufthansa Group’s competitive position.

For this reason, HR management is always working on further improvements in the compatibility of family and work. These measures range from expanding child-care offers to supporting employees who must combine professional demands with caring for family members (see page 86, Work and family in harmony). A balance between work and private life is also served by the numerous flexible working hours, part-time and sabbatical models for employees and managers. The Lufthansa Group places great emphasis on offering their employees sustainable remuneration and pension schemes (see page 88, Employment policy based on partnership).

#DIVERSITY #EQUALOPPORTUNITY

Fully in line with digitalization: an employee tests “smart glasses” with integrated displays.





Investments in the work place of the future

“New Workspace” is the name for the new Lufthansa office world. After successful completion of the pilot phase, the Group introduced its new workspace model, which features basic components such as mobile office and home office options, in its administrative areas. The Lufthansa Group not only responds to the trend towards modern, virtual and adaptable working structures. It also adapts its working conditions to its employees’ increased mobility, their pronounced digital and social connectedness and their individual diversification. Now teams, project groups and departments increasingly work in virtual communities across the borders of departments and business segments.

Insight into tomorrow’s working world was also provided by the HR Action Days at the Frankfurt location; in 2015 the focus was entirely on digitalization. In this context, employees were able to test innovations including a 3-D printer and “smart glasses” with integrated displays as well as a desk with integrated touch screen and other digital features.

#DIGITALIZATION #NEUWORKSPACE

Personnel strategy sets tomorrow’s course today

Demographic change implies that staff in Europe will get increasingly older and that there will be a scarcity of younger qualified employees. By applying strategic personnel planning, possible discrepancies between future staff levels and actual personnel needs can be determined and analyzed at an early stage – and thus the course for the future can be set early on. For this purpose, the aviation group combines qualitative and quantitative analyses in a dynamic model with a planning framework spanning up to 15 years. The Lufthansa Group’s personnel strategy focuses on the overriding action areas of the program “7to1 – Our Way Forward” so that the HR function consistently supports the strategic alignment of the entire Group.

#STRATEGY #7TO1

EXPERT INTERVIEW

Three questions for Professor Christian Scholz on the subject of change in the work environment and its effects on employer attractiveness

What criteria are of particular importance for today’s job seekers when selecting an employer?

For younger Generation Z applicants in particular, the focus is on a sense of well-being, security and structure. Naturally money, employer image and career perspectives count as well; however, compared with the slightly older Generation Y, these factors tend to take more of a back seat. Generation Z seeks reliability and wants a clear picture of what the tasks and the work place are like.

How must companies react to these changed expectations so as to be able to attract the right talent?

... and to keep them. It is somewhat paradoxical: Younger applicants no longer commit themselves either long-term or emotionally to an employer. If something bothers them, they’re gone. Yet they still seek an employer who promises them continuity for the next 30 years. Underlying this paradox in the case of Generation Z is a “Pippi Longstocking” romanticism. But there is also a clear turning away from the – by now exaggerated – trend toward flexibility, agility and virtuality along with a turning toward a stable, productive and more human form of sustainability. For companies, all this may be somewhat uncomfortable and seemingly not in keeping with the times, yet even so it is both right and important.

What sort of influence does the digitalization of many work processes have on today’s and tomorrow’s working worlds?

Of course, digitalization implies an expansion of networking and automation. However, progressive digitalization can produce a multitude of different working environments. In this case, one should not let oneself be too easily convinced by the hype surrounding digitalization technology but rely rather more on the competitive advantage generated by the meaningful combination of digitalization and employee orientation. This is exactly what Generation Z will insist on gently but firmly, and that is a good thing: for economic success, ecology and people.



CHRISTIAN SCHOLZ

has been professor of Business Administration and Economic Science at Saarland University since 1986. His controversial publications (such as his latest book “Generation Z”) are dedicated to current trends in the world of work.

VIEWPOINTS

The Lufthansa Group reacts with a broad range of ideas, programs and offers to changes in the work environment. How is this commitment received and where is a need for optimizations?

Here are three personal views on these issues by: Dr. Bettina Volkens, member of the Lufthansa Group's Executive Board and in charge of Corporate Human Resources and Legal Affairs since July 2013, Petra Hollmeyer, Manager Project Management Leadership VIP & Special Mission Aircraft Services and with Lufthansa Technik since May 2001 and Dino Bonvecchi, ProTeam trainee at the Lufthansa Group since 2015.

How would you describe the Lufthansa Group's work environment in three adjectives?

- Highly professional, quality-conscious, diverse.
- ★ Diverse, hierarchical, quality-conscious.
- ▶ Professional, complex, increasingly dynamic.

What makes an employer attractive for you? Is the Lufthansa Group well placed in this respect?

★ For me, the primary consideration is sufficient opportunities for development. In my opinion, the so-called "professional career" ought to be developed more consciously because not everybody can and wants to be a manager. In this area I see even more potential for the Lufthansa Group. As the life working time is getting longer, the compatibility of work and private life has great importance. The options offered, such as part-time work and special leave, are good ones.

When it comes to women in management positions – especially in technical areas – even though there are positive developments, we could do even better with more female managers, in my opinion. Against the background of the current pension debate I appreciate the favorable employee benefits the Company offers. Especially the Company pension is a very important building block for me. Therefore, I hope that it will be preserved over the long-term.

■ Very much so! We are a modern and responsible employer with unbelievably diverse employment and development options. People make a conscious decision in favor of the Lufthansa Group and work with commitment and enthusiasm for the common goal. To keep it this way, we analyze our internal and external environment regularly with an eye on relevant influences and trends and adapt our personnel concepts accordingly if needed. One very important aspect is to always listen to the employees' concerns. We make sure we do so by cultivating our trust-based and feedback-oriented corporate culture. Numerous dialogue and participation formats and our Group-wide employee survey support us in this task. Every employee receives the same appreciation from us. Whether a company is an attractive employer depends on many factors – not just the working environment, career opportunities, employee benefits and possibilities to achieve balance between professional and private lives. We know that the world around us is not at a standstill and that is why we work increasingly on topics such as digitalization, diversity and internationality so as to offer an interesting job portfolio and an attractive working environment in the future as well.

■ DR. BETTINA VOLKENS
Chief Officer Corporate Human
Resources and Legal Affairs
Deutsche Lufthansa AG



★ PETRA HOLLMEYER
Manager Project Management Leadership
VIP & Special Mission Aircraft Services
Lufthansa Technik AG

▶ DINO BONVECCHI
ProTeam Trainee
Deutsche Lufthansa AG



▶ For me it is important to be seen as a human being and not as a resource, and to have the opportunity to get involved. This includes being able to identify with my employer and that I can discern an overriding shared goal. To be successful in the future, we need even greater diversity and a better understanding of working together in interdisciplinary teams, especially under the aspect of the Lufthansa Group's current realignment.

What does the Lufthansa Group offer to keep professional and private lives in balance? What's really good and where do we need to catch up?

■ We support our employees with tailor-made offers, which make it possible to create harmony between work and private life. This includes flexible work-time models, home office and job-sharing options just as much as the expansion of childcare offers, for example. We have accomplished a lot already. Employees and the Company benefit from it in equal measure. In this area as well, it is important to ask for regular feedback from employees in order to further optimize existing offers or to expand them.

▶ At Lufthansa and in the central functions we are set up well due to a number of collective agreements, part-time offers, job sharing and the new workspace initiative, or we are on a positive path. But that's not the case for all subsidiaries and here harmonization would be good – also to make job changes within the Lufthansa Group easier.

★ Currently, I'm using a part-time option for the first time. The related process is clearly structured and can be used flexibly. For me, one of the options this has created is the ability to pursue my activities as a volunteer. In addition, I've been able to accumulate time credits for a three-month sabbatical; a wonderful chance to realize personal dreams and to generate fresh energy. When it comes to the topic of

home offices, I'd like to see Lufthansa Technik supporting this option even more strongly – while taking into account operational requirements, of course.

What characterizes the Lufthansa Group's offers concerning personal and professional development?

▶ There are diverse offers that are strongly oriented by current employee needs as well as the Company's challenges. The Lufthansa Group's entry programs in particular offer a high level of professional and personal potential for development – and they show that both depend on one's own initiative.

★ In 2007 I had the opportunity to participate in the "Explorers" program. I experienced this international course for junior managers as being of very high quality. It was very interesting and a great deal of fun to meet colleagues from many Group areas and to work together on different projects.

■ The Lufthansa Group's success substantially depends on our highly committed and qualified employees. As a global aviation group with different business segments, the requirements for training and continuing education are high and diverse. Also in this area we are making continuous investments. To find one's way in the future in a digitalized working environment with ever-faster changes, there needs to be a culture of "wanting to learn" as well as concrete new innovation and change competencies – we are working on that in a consistent manner as well. The Lufthansa School of Business is our internal competency center in this context and ensures the high quality of our continuing education programs by providing tailor-made offers and formats.



1

Sustainable Business Practices

Sustainable business practices are firmly anchored in our Company strategy. We actively seek an open dialogue with our stakeholder groups to jointly shape the future.

PK





Condor

SU

SWISS

Austrian

OE-LAX

D-AISU

Lufthansa

D-AIPK

jet-Equipment
SINCE 1962

Strategy and management

Entrepreneurial responsibility is a core concern for the Lufthansa Group. The Company’s goal is to act sustainably and responsibly in all areas and to be the first choice for customers, employees, shareholders and partners. Over the long term, this secures the aviation group’s success and its ability to create added value.

The Lufthansa Group has adopted a comprehensive sustainability agenda, which ensures responsible management in all business segments and comprises the following dimensions:

- Economic sustainability
- Corporate governance and compliance (see page 25)
- Climate and environmental responsibility (see page 34)
- Social responsibility (see page 76)
- Product responsibility (see page 62)
- Corporate citizenship (see page 94).

At the beginning of 2016, the Group again surveyed its stakeholders concerning key aspects of these subject areas and joined these responses together with its own assessments in a materiality matrix. On the basis of this materiality analysis, the Lufthansa Group will further develop its sustainability strategy and management over the years ahead (see page 21, Stakeholder dialogue). Similarly, Group companies such as Lufthansa Technik or LSG Sky Chefs rely on specific stakeholder surveys and analyses to formulate recommended measures especially adapted to their needs and to optimize their own sustainability programs. In the area of

social responsibility the Lufthansa Group has used the Company-wide employee survey “involve me!” since 2015 as a central dialogue and feedback instrument (see page 88, Employment policy based on partnership).

The Group focuses at all times on minimizing the environmentally relevant effects of its business activities. The aim is to make flying as sustainable and environmentally compatible as possible by means of technological innovations as well as new products and services, while making the most of every opportunity that presents itself to advance the Company’s commercial activities. *Balance*, which has been published for the last 22 years, informs readers about key areas and advances in Corporate Responsibility; this report is also the basis for the stakeholder dialogue.

Organization

The responsibility for the coordination and further development of all activities and initiatives related to sustainability within the Lufthansa Group is in the hands of the Corporate Responsibility Council (CRC). This interdisciplinary and interdepartmen-



tal committee is placed at the upper management level and has the task of steering all topics and processes related to sustainability within the Group in an effective manner. The CRC comprises the heads of the Group departments Strategy, Political Affairs, Group Environmental Issues, Human Resources, Legal Affairs, Communications, Investor Relations, Controlling and Corporate Sourcing. It reports directly to the Lufthansa Group's Executive Board. In addition, a working group whose members come from different Group departments covers current aspects and concerns related to topics of entrepreneurial responsibility.

Commitment to corporate responsibility is acknowledged

Sustainability analysts and rating agencies in 2015 again assessed the activities of the Lufthansa Group with regard to responsible corporate governance. For example, the US trade publication Air Transport World honored the Group's pioneering role in the area of climate and environmental responsibility for the second time in three years with the award "Eco-Airline of the Year". Furthermore, the Lufthansa Group is listed in such sustainability indices as FTSE4Good, Ethibel Sustainability Index (ESI) Excellence Europe, ECPI and MSCI Global Sustainability Index Series (see cover, Corporate Responsibility: Prizes, awards and indices).

"Consistently safeguarding the future" is the title of the Lufthansa Group's Annual Report 2015, available at www.lufthansagroup.com/investor-relations. Sustainability and responsible management play important roles in this context.



Strategic program "7to1 – Our Way Forward"

The strategic program "7to1 – Our Way Forward", which was launched in July 2014, reorients the Lufthansa Group for the future. Aimed at increasing efficiency, its measures are the basis for developing the aviation group successfully and sustainably. The strategic program's goal is to increase the Group's ability to create added value – and to secure the Company's competitiveness and future viability. "7to1 – Our Way Forward" comprises seven key areas of action that refer to market conditions as well as to internal structures and processes (see page 15, Annual Report 2015):

- Customer centricity and quality focus
- New concepts for growth
- Innovation and digitalization
- Culture and leadership
- Value-based steering
- Constantly improving efficiency
- Effective and lean organization

The topic of sustainability is present in all seven action areas. The Lufthansa Group will invest a total of 500 million euros in

innovations by 2020 to make the product "flying" more efficient, more environmentally compatible and more attractive. Simultaneously, the Group is currently implementing the largest fleet modernization program in its history (see page 29, Fleet development).

Furthermore, the focus on "Culture and leadership" will help to ensure that talented job seekers see the aviation group as an attractive employer in the future as well. Inasmuch as a modern, feedback-oriented leadership culture forms the basis for motivated and autonomous employees.

In addition, the Lufthansa Group realigned itself organizationally with effect from January 1, 2016 as part of the measures taken in the action area "Effective and lean organization". As a result, more functional criteria are applied in steering the entire organization. The restructuring allows the Group to interlink commercial, operative and administrative functions more closely across all business segments. All efforts in the framework of "7to1 – Our Way Forward" serve the purpose of creating added value for customers, employees, shareholders and partners.



Three questions to ANDREAS HAGENBRING
Head of Investor Relations
Deutsche Lufthansa AG

The Lufthansa share has been listed on the stock exchange for 50 years and been included in the DAX 30, the index of the most important German listed companies, since its inception in 1988 without interruption. Is this a success story?

Very clearly, yes. Since 1966, Lufthansa has evolved to become one of the best-known and most popular German brands. A company with 17,000 employees, revenue of 1 billion DM and a profit of 50 million DM has grown into an international Group with 120,000 employees, revenue of 32 billion euros and a profit of 1.8 billion euros. Since 1969, we have paid dividends to our shareholders totaling more than 4.5 billion euros. Despite all challenges – and there are numerous ones in our industry – we have stayed in the DAX to this day.

The so-called ESG criteria – which refers to environment, social and governance – continue to gain significance in deciding in favor or against an investment. Does this also apply to the investors in the Lufthansa Group?

Investments focused on sustainability are continuously gaining in importance. Today they have a place in the portfolios of any renowned asset management company. More and more institutional investors have separate departments concerned with ESG, who influence the weighting of individual values within the

funds based on these criteria. Other investors consult data from external rating agencies such as the CDP and take these into account during the investment decision-making process. Investors in the Lufthansa Group are not an exception in this respect. For investors, it is above all economic sustainability and high standards in corporate management that are as important as ecological sustainability.

How do investors and rating agencies assess the sustainability performance of the Lufthansa Group and how do you inform the capital market on topics of entrepreneurial responsibility?

Investors and rating agencies evaluate a number of criteria and give each one a different weighting. A standardized approach is still lacking in this area. For 2016 we are planning our first participation in an ESG-focused investor conference. The Lufthansa Group's sustainability performance is seen positively by the capital market. Information about economic sustainability and good corporate governance have long been core elements of annual and quarterly reports. Incidentally, in 2015 our Group was again confirmed with top scores in different indices, such as FTSE4Good and the MSCI sustainability indices, which take into account economic as well as ecological and social criteria.

Beyond this, the principles of sustainable business practices are an important element in steering the Company. The Lufthansa Group follows a value-based management system, which is part of all processes concerning planning, steering and control. This approach aims at creating sustainable value across industry cycles.

Taking advantage of opportunities, limiting risks

The Lufthansa Group identifies significant opportunities and risks at an early stage and at regular intervals, and takes them into account in steering the Company. For this reason, the management of opportunities and risks is integrated into all business processes. In particular, the aviation group systematically takes advantage of its opportunities to increase efficiency, productivity and competitiveness (see page 69, Annual Report 2015).

The opportunities and risks affecting the Lufthansa Group are primarily shaped by macro-economic factors and the resulting influences on the aviation market and competition. In this context, the Group relies on its ability to adapt capacities and resources flexibly to changing market conditions. In addition to economic and regulatory developments, the activities of aviation companies are also highly exposed to political crises, weather events and other natural phenomena.

Stakeholder dialogue

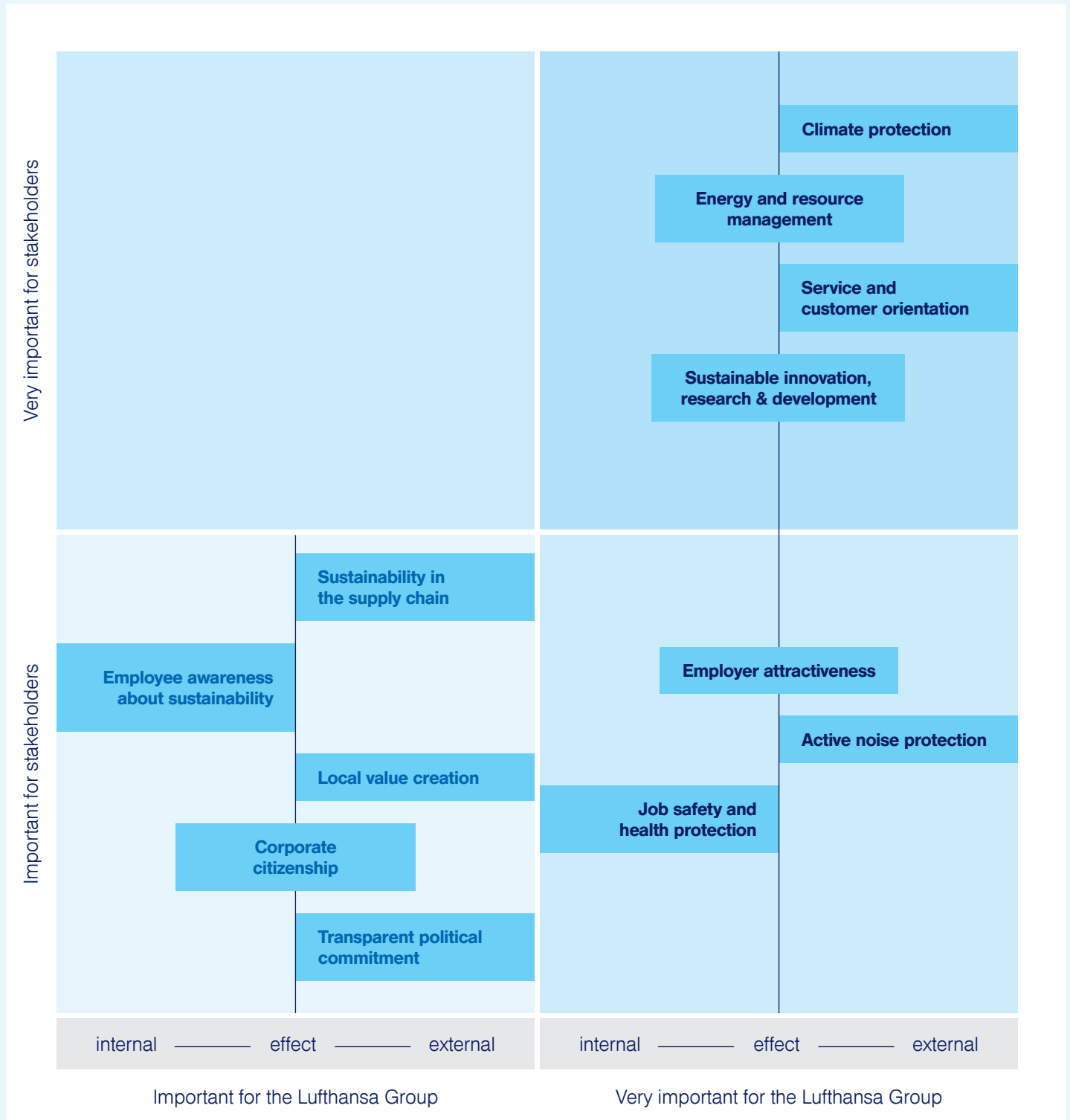
The Lufthansa Group has a variety of stakeholders with widely varying expectations and interests. The scope ranges from customers, employees, investors and suppliers to legislators, municipalities, neighbors, NGOs and scientific researchers. The Group places great value on a continuous and trusting dialogue with its internal and external stakeholder groups, and actively seeks exchange with them via various formats.

This dialogue allows the Lufthansa Group to understand better its stakeholders' needs and wishes and to integrate these into its business practices. The varying demands of different interest groups are likewise important for the further development of the Group's sustainability agenda and its annual reporting on important topics in the area of entrepreneurial responsibility. In the reporting year, the spectrum of stakeholder dialogue activities ranged from the restructuring of internal employee communication to road shows, investor conferences and dialogue events with representatives from politics, science and research (see page 24, The most important stakeholder activities 2015/16 at a glance).

<ul style="list-style-type: none"> ➤ Suppliers ➤ Contractual partners 	<ul style="list-style-type: none"> ➤ Customers ➤ Consumers ➤ LOHAS (Lifestyle of Health and Sustainability) 	<ul style="list-style-type: none"> ➤ Capital market ➤ Investors ➤ Shareholders ➤ Analysts ➤ Rating agencies
<ul style="list-style-type: none"> ➤ Employees ➤ Employee representatives 	<p>Lufthansa Group</p>	<ul style="list-style-type: none"> ➤ Governments ➤ Legislators ➤ Politicians ➤ Authorities
<ul style="list-style-type: none"> ➤ Science ➤ Research ➤ Education 	<ul style="list-style-type: none"> ➤ Nongovernmental organizations (NGOs) ➤ Organizations ➤ Consortia 	<ul style="list-style-type: none"> ➤ Neighbors ➤ Local communities ➤ Society ➤ Publicity ➤ Social networks

The diverse stakeholders of the Lufthansa Group

The materiality matrix 2016 of the Lufthansa Group



The materiality matrix 2016 will serve the Lufthansa Group in the years ahead as a basis for the further strategic development of Corporate Responsibility Management and to ensure a lawful form of reporting. The topics of safety

and adherence to legal requirements were not included in the stakeholder assessment, as the Lufthansa Group considers these to be basic prerequisites for its business activities.

Presentation and discussion of the stakeholder survey results within the Lufthansa Group's Corporate Responsibility Council.



Materiality analysis

In 2016, the Group again conducted a stakeholder survey which built upon previous editions. For this purpose, experts at the Lufthansa Group identified 12 relevant topics in a first step while focussing on those fields of action:

- upon which the Lufthansa Group's business activities have a significant social impact
- which influence stakeholders substantially in their evaluation of the Company
- which are demanded by sustainability standards and regulations
- which have significant influence on the Lufthansa Group's ability to generate financial or non-financial value over the medium or long term.

Safety and adherence to legal requirements were not included as topics in the survey, as the Lufthansa Group considers these to be basic prerequisites for its business activities.

Among the groups surveyed were passengers, business customers, partners, financial analysts, investors, NGOs, representatives from politics and regulatory bodies, media representatives, sustainability experts, and employees. More than 1,000 questionnaires were fully completed in an online survey. Internal and external stakeholders were more or less equally represented with respective shares of 48 and 52 percent. The Lufthansa Group donated 1 euro for each questionnaire fully completed by an external stakeholder. These participants could determine themselves whether "their" donation was to go to the charitable Swiss foundation myclimate (see page 67, CO₂ compensation) or to the Lufthansa Group's aid organization Help Alliance (see page 100).

Materiality matrix

Following the survey, the Lufthansa Group's Corporate Responsibility Council (CRC) analyzed the results and then used this analysis to prioritize central fields of action from the Group's perspective. The assessments by the stakeholders and the CRC of 12 central fields of action were summarized in a materiality matrix. It visualizes the prioritization of these action fields from both stakeholder and Company perspectives and shows whether these fields have an effect inside or outside the Lufthansa Group (see page 22).

In the years ahead, the matrix will serve the Lufthansa Group as a basis for the further strategic development of its Corporate Responsibility Management and for ensuring a lawful form of reporting, which will be mandatory for larger companies within the European Union from 2017. Another part of the materiality analysis was the determination or adaptation of contents for the Group's sustainability reporting.

The Lufthansa Group plans to further integrate those fields of action that have been defined as very important along with the related central aspects into its business processes and to further develop the relevant management approaches. In this way,

the Lufthansa Group will assess the strategic environmental program it initiated in 2008 by the end of 2016 and adjust it as needed. This applies in particular to the two fields of action "Climate protection" and "Energy and resource management", considered as highly relevant by both stakeholders and the Company, as well as the topic of "Active noise protection", to which the Group also gives highest priority.

Furthermore, based on the results of this materiality analysis, the Lufthansa Group has expanded its reporting on the likewise very important action fields "Attractive employer" and "Service and customer orientation", which have been consistently covered thus far through the strategic program "7to1 – Our Way Forward" (see page 19). The cover topic preceding this Sustainability Report addresses the changing world of work and the resulting challenges for HR management (see page 6). In the chapter "Product Responsibility" the coverage of the topics "customer centricity" and "quality focus" has been expanded. It also includes a particularly clear overview of the diverse activities and measures of the Lufthansa Group, all of which share a single goal: To make the travel experience as sustainable and comfortable as possible for our passengers (see page 68).



The most important stakeholder activities 2015/16 at a glance

Customers

- Customer surveys worldwide
- Regular ascertainment of Net Promoter Score (NPS®, see page 65)
- Monthly customer in-flight magazines and regular newsletters
- InTouch Service Center at seven locations on four continents ensure 24-hour reachability concerning all questions on flight reservations
- Visitor service “Discover Lufthansa” assumes important function of customer care at largest location, Frankfurt. Made-to-measure programs for German and international top customers as well as airport neighbors, associations, research institutions and partner universities of the Lufthansa Group
- Visitor services also at Lufthansa Cargo, Swiss and Austrian Airlines
- Communications in the social media channels further expanded

Employees

- First Group-wide employee survey “involve me!” (see page 90)
- 2nd HR Action Days (see page 15)
- Realignment of internal Group media: With the product group “One” a new media architecture was developed for the Lufthansa Group and implemented at the beginning of 2016. This includes the monthly magazine “One”, the news app “One”, “eBase One” (news portal on the intranet) and “Connection One” (community on social intranet)
- Access to internal communications media for flying personnel was further optimized
- Continuation of the dialogue series “Speaking openly ...” with the Lufthansa Group’s CEO at varying Company locations and live transmission on the intranet
- Continuation of the event series “Airline Dialogue”
- Continuation of the dialogue series “Breakfast with the Executive Board” in different business segments
- Live chats and dialogue events for different employee groups and managers
- New event format “Market conferences” established; three dialogue events with managers and the Lufthansa Group’s CEO in the Asia/Pacific, Middle East and North/South America regions

Shareholders, investors and analysts

- Continuous and intensive shareholder dialogue
- Four quarterly conferences and 30 road shows
- Participation in 18 conferences for institutional investors and in three forums particularly aimed at private investors
- Two issues of “Aktionärsinfo” (“Shareholder Info”) again published for private investors
- In addition to annual and interim reports, the capital markets are informed monthly about the latest traffic developments at the flying companies
- All publications, financial reports, presentations, background information and speeches as well as current news and relevant dates can be consulted at www.lufthansagroup.com/investor-relations

Lawmakers and public administrations

- Continuous and intensive exchanges with representatives from politics and administrations as well as participation in numerous events and panel discussions
- “Policy Brief” and “Aeropolitics” are published by the Lufthansa Group and Swiss respectively to inform decision-makers in politics, media and business about developments in the aviation industry and topics related to aviation policy

Science and research

- Numerous cooperations with scientific research institutions
- Expanded support for climate research in the IAGOS project
- Participation of Lufthansa Cargo in “Green Logistics” research project from 2010 to 2015 to assess ecological effects of logistical systems (final report has been published)
- Measuring flights in Cochstedt in cooperation with German Aerospace Center (DLR) (active noise protection)
- Participation of Swiss in the two-year study conducted by ETH Zürich and St. Gallen University (HSG) on the development of air, ground and land transport up to 2050
- Participation in the broadly-designed study on noise effects, NORAH, whose final report was published in 2015
- 4th Cargo Climate Care Conference in Frankfurt (dialogue event with about 150 representatives from the logistics industry, science and politics), during which customers and employees were honored with the Cargo Climate Care Awards
- Participation in aviation cluster “Hamburg Aviation” to promote business location and interlinked research as well as development of high-quality products and services
- Center for Applied Aviation Research was opened in March 2016 with participation of Lufthansa Technik
- Participation in discussion forums on the topic of alternative fuels

NGOs

- Active dialogue
- Support for different aid projects
- Participation in the dialogue forum #CSRhumanitär

Neighbors and local communities

- Regular discussions with representatives of state governments, mayors and neighboring municipalities at the Lufthansa Group’s hubs
- Participation in the forum “Airport and Region” in Frankfurt and in “Dialogforum Wien” in Vienna
- Since May 2015 LSG Sky Chefs has been a member of “LEEN 100” (Learning Energy Efficiency Network) initiated by the city of Frankfurt for improved CO₂ values in the Rhein-Main area
- Since September 2015 Lufthansa CityLine has been a member of the fifth “Environmental Pact Bavaria”. Its goal is to give incentives to sustainable development and continuous improvement of corporate environmental protection in Bavaria
- Participation of Lufthansa Technik and LZ-Catering in “Environmental Partnership Hamburg” and of Lufthansa Technik in Frankfurt in “Environmental Alliance Hesse”

Corporate governance and compliance

Corporate Governance at the Lufthansa Group is expressed as responsible corporate management and control which targets sustainable value creation. It is in accordance with the highest international standards and of central importance – for the Company’s transparency vis-à-vis its shareholders and for continuously increasing trust in its management.

The German Stock Corporation Act (AktG) and the German Corporate Governance Code are key elements in this context. The Company’s declaration of compliance with the German Corporate Governance Code was updated in December 2015 and is published on the Internet at:

www.lufthansagroup.com/investor-relations

Lufthansa Group Compliance Program

Compliance describes all measures that ensure the lawful conduct of companies, their executive bodies and employees with regard to adhering to legislation. The Lufthansa Group Compliance Program, established in 2004, aims at helping its employees adhere to current legal norms and keeping them from breaking the law. As an aviation company with global activities, the Lufthansa Group advocates fair competition, integrity and responsible action. The Lufthansa Group compliance program currently comprises the modules Competition, Integrity, Capital Market and Embargo Compliance.

Group Compliance Office

The Group Compliance Office, which was set up on October 1, 2007 within the central legal department, is responsible for the implementation, development and communication of the Lufthansa Compliance Program. It is supported in this task by a network of Compliance Managers at the various Group companies.

Furthermore, the Group Compliance Office advises Lufthansa Group employees worldwide on how to handle issues related to integrity, competition, embargo and capital market compliance. The basis for such consultations are the Company’s internal Compliance Guidelines. These regulations give employees a binding framework for action to ensure standardized and law-



Competition



Integrity



Capital Market



Embargo

Program consisting of four modules

The Group Compliance Office is responsible for implementation, development and communication.

abiding conduct across the Group. The Lufthansa Group is not willing to tolerate violations of law on the part of its employees. The Group Compliance Office coordinates the investigation of circumstances relevant to compliance and in this context serves as a contact point for cartel and investigative authorities, with whom the Lufthansa Group cooperates without reservation. Culpable breaches of law lead to consequences under labor law and may also entail personal liability.

Competition Compliance

The module Competition Compliance introduces employees to the relevant regulations of competition and cartel legislation, so as to minimize or exclude risks for the Lufthansa Group. All employees handling issues relevant to competition or cartels are trained in the fundamental regulations of German and European antitrust legislation.

Integrity Compliance

With the module Integrity Compliance, the Lufthansa Group documents its fundamental approach of law-abiding conduct in business relationships. The obligation to adhere to non-corrupt and ethically correct conduct flow naturally from current law, the internal Compliance Guidelines and the Group's memberships in relevant national and international organizations. Examples of the latter include the Lufthansa Group's commitment to the principles of the UN Global Compact (see page 27) and its membership in Transparency International. The Integrity Compliance Guidelines provide support in handling invitations, gifts and other attentions.

Capital Market Compliance

The module Capital Market Compliance gives employees an overview of current capital market law, such as regulations relating to insider trading or ad hoc publicity. Accompanied by specialized training, this module ensures that all employees and Company bodies concerned receive in-depth insight into the regulations of the German Securities Trading Act (WpHG).

Embargo Compliance

The module Embargo Compliance serves to ensure that the Lufthansa Group, as a globally active corporation, adheres to country- and person-specific sanctions and regulations in the area of foreign trade. The Embargo Compliance Guidelines provide the employees concerned with a binding framework of conduct.

Compliance training

Automated IT processes ensure that all employees participate regularly in those Web-based Compliance trainings that are relevant for them. The employees of the subsidiary companies also have access to these e-Learning courses and are either included in automatic mailings of materials or have their own company-specific processes. In addition, the Group Compliance Office conducts trainings with personal participation worldwide and offers workshops.

Third-party due diligence processes

The Lufthansa Group expects compliance from its business partners as well. Based on risk, business partners are therefore screened by means of third-party due diligence processes before the beginning of a business relationship.

Monitoring and reporting

In keeping with current requirements in the framework of the German Accounting Law Modernization Act, self-audits and external audits take place to evaluate the effective implementation of the Compliance Program. Furthermore, the Supervisory Board's Audit Committee is informed twice a year about current developments relevant to compliance issues and the current state of the program's implementation within the Group.

Ombudsman system

A further basic component of the Lufthansa Compliance Program is the globally implemented and proven ombudsman system, which also allows anonymous information concerning possible breaches of compliance. Introduced on December 1, 2007, it serves as an additional preventive measure against economic crimes. Relevant information can be given by employees or by third parties to an ombudsman outside the Company, by telephone, in writing or in person. The ombudsman function is fulfilled by Frankfurt-based lawyer Dr. Rainer Buchert, who is fully bound by the professional obligation of secrecy and also has the legal right to refuse to give evidence to public investigative authorities. The ombudsman communicates any information he receives to Lufthansa while respecting absolute confidentiality concerning the name and identity of the informant. In this way, the disclosure of an informant's identity to Lufthansa or to third parties without his or her consent is ruled out.

Furthermore, Lufthansa is listed in the joint transparency register of the European Commission and the European Parliament. The goal of this public register is to increase the transparency of decision-making processes within the EU on a voluntary basis and to ensure that the interactions between EU institutions and organizations, associations or companies are in conformity with current law and are carried out on the basis of ethical principles.

UN Global Compact

The Lufthansa Group is committed to the principles of the UN Global Compact, the largest initiative worldwide for responsible and sustainable corporate management. In 2002 Lufthansa was the first aviation group to become a member of the initiative, that had been set up two years earlier by the then UN Secretary General Kofi Annan.

By joining, the participating companies commit themselves to aligning their business activities and strategies to the ten universally accepted principles of the UN Global Compact in the areas of human rights, labor standards, environmental protection and prevention of corruption (see overview on this page). The shared goal is to make globalization socially and environmentally compatible and thus to make a contribution to sustainable economic practices for the benefit of all people and markets.

Over the past years, the Lufthansa Group has launched numerous programs in this area. Examples include the step-by-step expansion of the Group-wide compliance program, the continuous implementation of sustainable processes along the output chain, and the numerous measures in flight operations in favor of environmentally compatible mobility. The focus on humanitarian and social projects in the area of corporate citizenship is an important concern for the Lufthansa Group in its role as a globally active company. For this reason, there is a best-practice example on this topic in the anniversary edition of the German UN Global Compact yearbook, which was published at the beginning of 2016. Citing the Group-wide employee initiative Help Alliance, it shows how the Company's social commitment is filled with life and illustrates how the principles of the Global Compact are applied in practice.



The 10 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

Sustainable purchasing processes

As a globally operating aviation company, the Lufthansa Group supports fair competition, integrity and responsible business practices. The Group is committed to respecting current laws, guidelines and regulations unrestrictedly. The Lufthansa Group expects irreproachable conduct not only from its employees, but also from its suppliers and competitors.

By integrating sustainability into the procurement process, the aviation group assumes corporate responsibility. At the same time, it minimizes risks and thus protects the Company from potential damage. In the context of expanding its supplier management, the Lufthansa Group will in the future give even greater weight to the evaluation criterion “corporate responsibility” and is thus planning to address this topic with greater emphasis in the regular supplier discussions.

Group Purchasing Guideline

The Group Purchasing Guideline, which has been in effect since May 2013, obliges suppliers to commit themselves to social and ecological responsibility. It is to be understood as an overriding specification for all procurement guidelines at the Group companies. In addition, it serves as a handbook for buyers and all employees with contacts to the procurement markets. The regulations are updated and adapted continuously. Among other considerations, it requires that these obligations be included in contracts with suppliers:

- Suppliers must comply with the ten principles of the UN Global Compact just as much as the Lufthansa Group. The principles range from respect for human rights through commitments to labor standards and environmental protection to working against corruption (see overview, page 27). Deutsche Lufthansa AG was the first aviation group worldwide when it joined this strategic United Nations initiative in 2002.
- They must comply with the four core work standards of the International Labor Organization (ILO). These concern freedom of association, the right to collective bargaining, the elimination of forced labor and child labor, and prohibition of discrimination in respect of employment and occupation.

- They must consent to announced and unannounced audits by companies of the Lufthansa Group.
- They must recognize the Lufthansa Group's right to terminate the contractual relationship in the event of a breach of the aforementioned agreements. Suppliers must also observe the Lufthansa Group's Environmental Protection Guidelines.

By including these commitments in contracts, the Lufthansa Group ensures that sustainability is taken seriously as an issue and that it becomes a way of life all across the supply chain. To familiarize its purchasers with the Group Purchasing Guidelines, the aviation group trains them at the Procurement Academy, which provides continuing education opportunities for employees from throughout the Group.

New platform for tenders: buy:source

The Lufthansa Group continuously develops its tools covering the entire supplier management with the goal of optimizing the IT-based purchasing processes in an ongoing manner. Against this background, the previous purchasing platform FairPartners was replaced in 2015 by the Group-wide bidding platform buy:source. This move has created a user-friendly and open marketplace for posting and obtaining offers.

Fleet development

The Lufthansa Group maintains its course in the largest fleet modernization and renewal program in Company history. An up-to-date and well structured fleet is not only the foundation for economic success in an environment with intense competition. Modern aircraft also increase comfort levels for passengers and contribute to limiting the environmental effects of flying.

In 2015, the Lufthansa Group consistently pursued the optimization of its fleet and put 17 aircraft into service, among them nine long-haul aircraft. Thus the Group fleet consisted of 600 aircraft on December 31, 2015, with an average age of 11.8 years (see table, page 33). The fleet is the largest asset in the Company's balance sheet. The majority of aircraft are financially unencumbered and in the Lufthansa Group's full possession.

The decisions taken concerning fleet development over the past years mean that the Group continuously invests in new technologies, efficiency and customer comfort. The fundamental renewal of the fleet ensures that the Lufthansa Group will continue to offer leading product quality with ongoing service improvements – and fly ever more efficiently and quietly as well. In 2016 and in subsequent years the Company will invest 2.5 billion euros annually to this end,

primarily in new aircraft. The Lufthansa Group's current order list comprises a total of 251 latest-generation aircraft valued at about 40 billion euros at list prices (as per January 2016). The 69 long-haul and 182 short-haul aircraft are to be delivered by 2025 and will primarily replace older models.



The Lufthansa Group continuously invests in modern and particularly fuel-efficient aircraft.



World premiere: At the beginning of 2016 Lufthansa received the first Airbus A320neo, marking a new era of eco-efficient flying.

52 new aircraft in 2016 and two world premieres

In 2016 alone the Lufthansa Group will take delivery of 52 new aircraft, of which the 34 airplanes from the A320 family account for the largest share. In addition, there are two Airbus A350s, one A330, six Boeing 777-300ERs and nine Bombardier CS100s. The deliveries of the A320neo to

Lufthansa and the CSeries to Swiss are world premieres for these types of aircraft, which both set new standards for fuel consumption and noise emissions.

At the same time, the delivery of the first A320neo to Lufthansa is further proof of the special nature of the partnership between Airbus and the aviation group, which has been unfolding for 40 years. In 1976 Lufthansa took delivery of the first Airbus

A300. Since then the Lufthansa Group's airlines have placed orders for 582 aircraft with Airbus – which makes it the European aircraft manufacturer's largest customer.

The flying companies' fleet development at a glance:

Lufthansa

In January 2016, Lufthansa was the first customer worldwide to receive the Airbus A320neo (see illustration), which marks the start of a new era of eco-efficient flying. Thanks to quieter engines, this model's noise footprint during takeoff is reduced by half, compared with similar previous models. In addition, all new A320neo and A321neo aircraft are equipped with vortex generators as standard, which further reduce noise emissions. The A320neo is also more than 15 percent more fuel-efficient than preceding models, which translates into about 5,000 tonnes of CO₂ emissions avoided per aircraft per year. This is the equivalent of 485 flights between Berlin and Paris. According to current plans, Airbus will deliver five A320neos to Lufthansa by the end of 2016, which will be stationed in Frankfurt. The Lufthansa Group has 116

“Thanks to new engine technology and aerodynamic optimizations, the A320neo is more than 15 percent more fuel-efficient than the preceding model. The aircraft flies exceptionally well and quietly – a milestone in active noise protection!”



Captain Sascha Unterbarnscheidt
A320 Fleet Chief
Deutsche Lufthansa AG

aircraft of the A320neo family on order, 45 of which are for the larger A321neo. The new aircraft are earmarked for Lufthansa and Swiss.

Furthermore, Lufthansa plans further perceptible increases in efficiency on long-haul routes: In winter 2016 the airline will receive its first Airbus A350-900 and thus add a highly efficient aircraft to its fleet from 2017. It is also characterized by significantly

lower noise emissions. The A350-900 is the most modern and environmental friendly aircraft worldwide – and the first step into the “2-liter class”: It flies more fuel-efficiently than any other type of aircraft. On average, the A350-900 will consume a mere 2.9 liters of kerosene per passenger carried over a distance of 100 kilometers. This is about 25 percent less than the consumption of aircraft currently operated. Similarly, its noise footprint is up to 50 percent smaller

than that of comparable types of aircraft. The share of the most advanced materials in the A350-900’s structure reaches more than 70 percent.

The A350-900 will accommodate 293 passengers: 48 in Business Class, 21 in Premium Economy and 224 in Economy Class.

The Airbus A320neo Less noise. Less fuel. More comfort.



116 aircraft

The Lufthansa Group has a total of 116 aircraft of the A320neo family on order: “neo” stands for “new engine option”.



Aerodynamic advantages

Wing tip extensions that are 2.4 meters tall produce enhanced aerodynamic performance.



Quieter engines

Geared turbofan technology ensures that the engines are significantly quieter and use less fuel.



50% less noise

At takeoff, the noise footprint is only about half as large as that of comparable preceding models.



15% fuel reduction

The A320neo is over 15% more fuel efficient than current comparable models.



Reduction of noise levels

All new A320neo and A321neo planes are fitted with noise-reducing vortex generators as standard equipment.



More efficient utilization of space

A new, more space-efficient cabin configuration offers an increased seat pitch in Business Class and more seating capacity in Economy Class.

The first ten A350s of 25 on order will be stationed in Munich from January 2017 and will likely serve Delhi and Boston as their first destinations. At the same time, Lufthansa Technik is preparing its technical services for the Airbus A350. The expansion of a state-of-the-art warehouse for supplying spare parts at the Munich base began in December 2015.

The fleet modernization also means the end of an era because Lufthansa says “Bye, bye Bobby” as it has been decommissioning its remaining Boeing 737s since the end of 2015. The last Boeing 737s will leave the Lufthansa fleet by the end of 2016 to make room for more efficient types of aircraft. Most of the Boeing 737s will be recycled in the United States (see page 56, Recycling of aircraft components).

Swiss

Swiss is set to take delivery of nine CS100s from Bombardier in 2016. It will be the first airline worldwide to start revenue service with the CSeries, which is specifically geared at smaller markets. The aircraft will serve European routes and replace the currently operated Avro RJ100 regional aircraft step by step. The CSeries’ most significant environmental statistics are just as positive as those of the A320neo. Perceptible noise is reduced significantly, compared with the preceding aircraft generation, and CO₂ emissions are 20 percent lower. Swiss has a total of 30 CSeries aircraft on order, including ten CS100s and ten larger CS300s. The airline will decide later which type will be delivered for the remaining ten orders.

Furthermore, at the beginning of 2016 Swiss received the first two of nine Boeing 777-300ERs it has on order, which will be delivered by 2018. This long-haul aircraft is the airline’s new flagship and will replace older Airbus A340-300s. The latest addition to the fleet distinguishes itself above all with tried-and-tested technology, the highest levels of reliability and its efficiency. Thanks to its advanced GE90-115BL engines, the largest operated on civil aircraft, the B777-300ER consumes about 20 percent less kerosene than the A340-300 and also emits correspondingly less CO₂. At the same time, passenger comfort is significantly enhanced by a completely revised cabin interior in all three travel classes. During a one-year trial period, passengers can also take advantage of wireless Internet on board and use roaming telephony, including texting and data functions.

Austrian Airlines

Austrian Airlines is currently in the process of replacing its Fokker fleet with modern Embraer E 195 medium-haul aircraft, which have been operated by Lufthansa CityLine. This twin-engined aircraft is substantially more efficient than the Fokker 70s and 100s currently operated by Austrian Airlines. In November 2015, Austrian Airlines received the first of 17 Embraer E 195s; their integration into the fleet is to be completed by the end of 2017.

Eurowings

The new Eurowings successfully took off at the end of 2015, concentrating primarily on point-to-point business with a focus on leisure travel. By April 2017, the Lufthansa Group’s innovative quality low-cost airline will replace its entire fleet, which initially consisted of 23 smaller Bombardier CRJ900s, with Airbus A320 aircraft. In 2016 alone, 19 new A320s are to reinforce the existing Eurowings fleet. The airline operates its intercontinental services with Airbus A330-200 long-haul aircraft, of which it already has two in its fleet. Eurowings plans to expand its long-haul fleet step-by-step to a total of seven Airbus A330s.

Lufthansa Cargo

In February 2015, Lufthansa Cargo received its fifth Boeing 777F and successfully integrated the five freighters of this type it had on order into flight operations. The Boeing 777F is considered the quietest and most fuel-efficient freight aircraft in its class. Additionally, it offers a long range and high levels of reliability. In August 2015, Lufthansa Flight Training (LFT) inaugurated a new flight simulator in Frankfurt to be able to train the increased numbers of Boeing 777 pilots directly on site in the future.

Taking into account the continuing difficulties of the economic environment, Lufthansa Cargo plans to reduce its fleet and retire two MD-11Fs in 2016. Thus only 12 freighters of this type will operate on the logistic specialist’s route network.



The Boeing 777F operated by Lufthansa Cargo fulfills the most stringent noise standards and thus has maximum access to airports with high noise protection values.



In winter 2016, Lufthansa is to receive the Airbus A350-900, the most modern long-haul aircraft worldwide.



As the first airline worldwide, Swiss is to put the CSeries into revenue service in 2016.



A Eurowings Airbus A330-200

The Lufthansa Group fleet

As of December 31, 2015 (changes compared to 2014)

	In possession ¹		Age ¹		In operation ²		Age ²	
Lufthansa	364	(+2)	10.6	(+0.1)	259	(-13)	10.9	(-0.2)
Lufthansa CityLine	12	(-11)	9.3	(-0.7)	54	(+5)	6.9	(+1.1)
Air Dolomiti	0	(±0)			10	(±0)	4.9	(+1.0)
Eurowings	0	(±0)			25	(+2)	4.9	(+0.2)
Germanwings	38	(±0)	8.8	(+1.0)	62	(+2)	13.4	(+0.5)
Swiss (including Edelweiss Air)	88	(-4)	14.0	(+0.7)	88	(-4)	14.0	(+0.7)
Austrian Airlines	79	(-1)	16.2	(+0.7)	78	(-2)	16.3	(+0.9)
Passenger Airline Group business segment	581	(-14)			576	(-10)		
Lufthansa Cargo	19	(-1)	12.5	(-0.5)	19	(±0)	12.5	(±0.0)
Logistics business segment	19				19			
Lufthansa Group	600	(-15)	11.8	(+0.3)	595	(-10)	11.7	(+0.2)

¹ Aircraft in the Group's possession

² Aircraft operated by the Group

A large white Lufthansa aircraft is parked on a tarmac. In the foreground, a white ground support vehicle (GSE) is visible, with "Lufthansa LEOS" and "KALMBA" written on its side. The aircraft's engine and wing are prominent. The background shows a clear sky and some airport infrastructure.

2

Climate and Environmental Responsibility

Climate and environmental responsibility is a guiding principle of our value-oriented corporate management. Fuel efficiency in flight operations is of major importance for our success according to economic and ecological benchmarks.



Strategy and management

The Lufthansa Group is continuously focused on limiting further the ecological effects of its business activities and using required resources even more efficiently. The Group has set itself the goal of making mobility as environmentally compatible as possible for its customers. The strategic program “7to1 – Our Way Forward” also makes a contribution in this area, as it has set the switches for even more environmentally friendly air transport.

In 1996 the aviation group adopted Environmental Guidelines to firmly anchor its principles concerning environmental care. In 2008 the Executive Board approved the Lufthansa Group’s strategic environmental program, which remains valid until 2020. It defines key action areas with regard to fuel efficiency, climate protection, active noise protection, and energy and resource management (see page 36, *Balance 2015*), in which the Lufthansa Group wants to achieve further progress.

Simultaneously, the Company supports the international aviation industry’s ambitious climate protection goals. This includes improving fuel efficiency by an average of 1.5 percent per year up to 2020. Thereafter, CO₂ emissions are to be stabilized at the level achieved and any additional transport growth is to be CO₂-neutral. Furthermore, the industry aims to reduce its net CO₂ emissions by 50 percent (on the basis of 2005) by 2050. To meet these goals, in 2005 the aviation industry adopted its four-pillar strategy, which combines different environmentally-relevant paths and measures (see page 41, Fuel consumption and emissions).

The Lufthansa Group’s goals and strategy

With regard to climate and environmental responsibility, the Lufthansa Group’s key action areas are climate protection (especially through fuel efficiency), active noise protection, energy and resource management, sustainable innovation, and research and development. These topics were also included in the latest version of the materiality analysis related to the Group’s sustainability commitment. Both stakeholders and the Company confirmed these topics as having very high importance for responsible mobility (see page 21, Stakeholder dialogue).

Fuel efficiency

For the Lufthansa Group, fuel efficiency in flight operations is a fundamental factor for success, not only economically but also ecologically. Therefore, the aviation group continuously invests in new aircraft and engine technologies and pursues its internal fuel-efficiency campaign. In addition, the research and use of alternative fuels play an important role. At the same time, the Lufthansa Group is firmly committed to advancing the implementation of the standardized European air space (see page 41).

Active noise protection

For many years, the Lufthansa Group has been committed to reducing the noise emissions unavoidably associated with air transport. There is a particular need to lessen the burden on people living around important hubs further by applying active noise protection measures. Their scope includes investments in the latest technologies, quieter flying procedures and advanced noise research. Moreover, the aviation group regularly analyzes all recorded noise emissions data in order to develop concrete measures for further improvements (see page 58).

Energy and resource management

The Lufthansa Group also works to optimize continuously its energy and resource management, thereby ensuring that required resources – such as water – are always used responsibly on board and on the ground (see page 52).

Research and development

The Lufthansa Group cooperates with partners from the areas of science and research to advance industry innovations on the basis of sound data and to improve its own environmental management further. Simultaneously, the Group supports climate research projects to observe the Earth’s atmosphere (see page 61). Beyond that,

Lufthansa Technik increasingly relies on research partnerships to develop product innovations such as the low-drag “sharkskin” structure for aircraft surfaces (see page 10, *Balance* 2015).

Evaluation of the environmental program

In 2016, the Lufthansa Group plans to evaluate its strategic environmental program in a comprehensive manner. This reassessment will take into account not only changes in the external framework of conditions but also internal impulses from the agenda “7to1 – Our Way Forward” and the results of the stakeholder survey, including the materiality analysis.

To further develop the environmental strategy, a working group that includes the environmental experts of the Lufthansa Group, the airlines and the service companies, as well as representatives from Group Strategy and Group Communications was set up. In early 2016, the group identified fundamental internal and external ecological conditions and challenges that need to be taken in consideration in developing a new environmental strategy. As a next step, they defined and prioritized the various environmentally relevant aspects and topics to determine appropriate areas of emphasis for later on. In doing so, they distinguished the three dimensions Lufthansa Group, airlines and service companies.

Organization of climate and environmental management

The department Group Environmental Issues is responsible for the Lufthansa Group’s definition, coordination and implementation of Company-wide environmentally relevant strategies and measures. In addition, all larger subsidiaries have their own environmental departments or a coordinator. These experts meet twice a year at the Group-wide Environmental Forum to discuss current topics, exchange experiences and develop new ideas.



Three questions for DR. KARLHEINZ HAAG
Vice President Group Environmental Issues
Deutsche Lufthansa AG

The aviation industry has set itself ambitious climate protection goals. What is the current status?

The UN’s International Civil Aviation Organization (ICAO) is working intensively on developing a concept for a global market-based system in air transport. Its task is to contribute to securing the goal of CO₂-neutral growth in international air transport from 2020. Concrete measures are to be decided at the ICAO plenary session in October 2016. An important barometer for the general mood on this path was the climate summit in Paris with its trendsetting decisions. Therefore, the Lufthansa Group hopes that the ICAO will be able to pass clear resolutions concerning a global climate protection agreement for international air transport.

Has the ICAO made progress in other areas with regard to climate protection?

In addition to adapting the maximum values for noise and nitrogen oxides, the ICAO’s environmental protection committee agreed after six years of intensive negotiations, on February 8, 2016, to introduce a CO₂ emissions standard for aircraft. These limits will come into effect in 2020 and form an international standardized benchmark for the certification of new commercial aircraft. With the CO₂ standard an important instrument for evaluating technology-based measures has been created.

And what is the Lufthansa Group’s contribution?

As long ago as 2008 we initiated a strategic environmental program and have since then made significant progress in all areas. Specific fuel consumption, which has fallen since by 11.5 percent, is only one example. We are working on further improving our environmental balance sheet by adding new aircraft to the fleet – in 2016 alone the Lufthansa Group will phase 52 highly efficient aircraft into operation – and by implementing comprehensive fuel-efficiency programs. At the moment we are reassessing our environmental strategy, which is valid until 2020, in the light of current requirements. These reflections also take the results of our most recent stakeholder survey into consideration.

Limiting environmental effects

The Lufthansa Group strives to limit the environmental effects of its business activities to an unavoidable minimum – in the air and on the ground. Our guidelines are the Group's strategic environmental program and the industry-wide four pillar strategy for climate protection.



Electromobility

At its Frankfurt hub, the Lufthansa Group is part of the E-PORT AN initiative. The focus is on operating increasing numbers of electrically powered vehicles for aircraft handling and for taxiing and towing, thus making the processes on the apron more sustainable.



Fleet modernization

Continuous investments in fuel-efficient and low-noise aircraft and engine technologies are the most efficient lever at the Lufthansa Group's disposal to make flying as environmentally compatible as possible. In addition, the Company is actively committed to research projects concerning improvements in aerodynamics.



Sustainable construction and modernizations

When planning, renovating and constructing buildings, the Group places great value on the sparing use of natural resources. These measures range from taking into account the latest standards for new constructions to implementing energy-related optimizations for existing buildings.

Energy and resource management

The Lufthansa Group relies on the efficient use of water and electricity and on consistent waste management. In addition, the Group companies work step by step to establish or expand their environmental management systems.



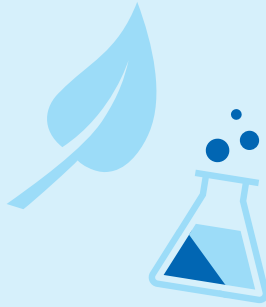
Recycling of aircraft components

In the framework of its project "2nd Life" Lufthansa Technic Component Services disassembles the Group's decommissioned aircraft at a site in the USA. In this way, many tonnes of high-quality materials can be reconditioned and reused following recertification.

Ground

Alternative fuels

The Lufthansa Group researches and uses alternative fuels in scheduled flight operations. Furthermore, it drives the development of environmentally friendly fuels through its participation in various initiatives.



Climate research

For more than 20 years, the Lufthansa Group has been a partner in climate research. Selected aircraft serve in the process as “flying” measuring laboratories. By this means, the Group supports the establishment of a worldwide measuring infrastructure for the observation of the Earth’s atmosphere by means of civil aviation.

Weight reduction

Be it more lightweight seats, containers, pallets or trolleys: The Lufthansa Group seizes every opportunity to reduce weight and thus conserve kerosene. Another building block is the e-Enabling program, which prepares the way toward the fully paperless cockpit.



Air



Air space management

For many years, the Lufthansa Group has supported the largest climate protection project in European aviation – the implementation of the standardized European air space (Single European Sky, SES). For this purpose, Lufthansa Group experts actively participate in related research projects.



Active noise protection

The Lufthansa Group achieves “audible” reductions of the burden on people living close to airports by the operation of quieter aircraft, noise-reducing modifications and improved procedures for approaches and departures. Another fixed component of this commitment is the participation in noise research projects.

Further activities

- Efficient engine washes (Cyclean®) and dry washing methods for aircraft fuselages (see page 51)
- Programs for voluntary CO₂ compensation (see page 67)
- Continuous implementation of digital processes (see page 57)



Covers of the environmental reports and declarations published by Lufthansa CityLine, the LSG Group and Austrian Airlines. These publications are available on the respective Web sites of those companies.

Raising employee awareness

In its internal communications, the Lufthansa Group places great emphasis on making its employees increasingly more aware of the need for sustainable behavior. The Group also offers training, workshops, Web-based trainings and continuing education options.

Environmental management systems

The Group companies continuously expand their environmental management systems. Here is an overview of the current situation:

In Germany, **Lufthansa Technik** has been certified since 1999 in accordance with the international environmental standard ISO 14001. Beyond this, all worldwide locations of this provider of technical aviation services will receive corresponding certificates by the end of 2017. The company is an “Environmental Partner” of the City of Hamburg and furthermore set itself the goal to reduce its CO₂ emissions by 30 percent between 2012 and 2018. Today, with the measures it has planned for 2016 included, more than 50 percent of this target have already been reached.

In 2015, **Lufthansa Cargo** was certified worldwide for the first time according to the environmental standard ISO 14001. The Lufthansa Group’s freight specialist has

been validated accordingly at all its German locations since 2010. In addition to the annual internal and external audits, Lufthansa Cargo has its entire system of corporate environmental care checked every three years by external auditors for the purpose of recertification.

Lufthansa CityLine has been validated since 1999 according to the European environmental regulations EMAS and ISO 14001, and in 2015 it received the respective recertifications for the sixth time in a row. The airline is thus a worldwide trailblazer in the area of sustainability and demonstrates impressively that economically profitable business operations and environmentally conscious principles are not contradictory. This is due to the fact that the consistent pursuit of goals such as lowering resource consumption often leads to direct cost savings. Another important pillar is the exchange of ideas with other companies. Therefore, Lufthansa CityLine is a member in the “Environmental Pact Bavaria”, an initiative of the Bavarian state government to promote environmental awareness in business. This context also provided the contact with the Association of European Sustainability and Eco-Management (VNU), which provides an exclusive network through EMAS Clubs Europe as well as effective discussion and communications options for EMAS-certified organizations. This approach illustrates that the company’s ecological commitment has been anchored in its corporate philosophy for a long time.

Currently, Lufthansa CityLine and Lufthansa are about to take a further step in the direction of a sustainable future: In the months ahead they will be implementing an environmental management system at Lufthansa’s Munich hub as well – with the future goal of rolling this new system out Lufthansa-wide. Both airlines benefit from this bundling of environmental organization.

Austrian Airlines is in the process of establishing an environmental and energy management system to be certified in accordance with ISO 14001 or EMAS. The implementation is expected to be completed by 2018. The airline provides information about its activities in the area of climate and environmental responsibility in its environmental report, most recently published in 2015, and on its home page.

The **LSG Group** operates an in-house environmental management system that comprises the core elements of ISO 14001. All locations worldwide that are fully-owned by the LSG Group participate in this system. The locations in Rome, Lisbon and Helsinki are certified in accordance with ISO 14001. Beyond its interactive environmental report “Thinking Green” the company communicates actively via its dedicated environmental blog. Five environmental audits with external auditors are planned for 2016.

LZ-Catering is preparing the introduction of an environmental management system. The company is an “Environmental Partner” of the City of Hamburg and has offered at least one daily CO₂-friendly main course in a large number of its company restaurants since July 2014. In a step to reduce waste quantities, LZ-Catering is planning a test run from mid-2016 with multiple-use coffee mugs, which are set to replace the cardboard cups with a plastic lid it currently uses.

Fuel consumption and emissions

The Lufthansa Group again flew exceedingly fuel-efficiently: In 2015, the aircraft of the passenger fleets consumed 3.84 liters of kerosene on average to carry one passenger over a distance of 100 kilometers. Thus, the Group confirmed the efficiency record it had set the year before.

The evolution of the specific consumption depends on many variables, including the payload factor. The latter was 1.1 percentage points lower in 2015 than in the preceding year. The continuing fleet modernization (see page 29, Fleet development), the numerous fuel-efficiency programs and the related efficiency increases helped to stabilize the specific consumption of the reporting year at the previous year's record level. The Lufthansa Group consistently strives to attain the industry goal for annual efficiency increases of 1.5 percent. Since 2008, the Group has achieved an 11.5 percent-improvement in fuel efficiency.

The Lufthansa Group's absolute fuel consumption in 2015 increased by 1.4 percent to about 9 million tonnes of kerosene. With a current share of more than 17 percent of operating expenses, fuel is a substantial cost item for the Group. Therefore, pronounced changes in fuel prices can have a significant influence on the operating result. This illustrates once again the degree to which economical and ecological factors are interlinked in the area of fuel efficiency. The less kerosene the aviation group consumes, the greater the positive effects are on both costs and climate. This is due to the fact that each tonne of kerosene conserved in flight operations means 3.15 tonnes less of CO₂ is emitted into the atmosphere.

CO₂ emissions according to the GHG Protocol

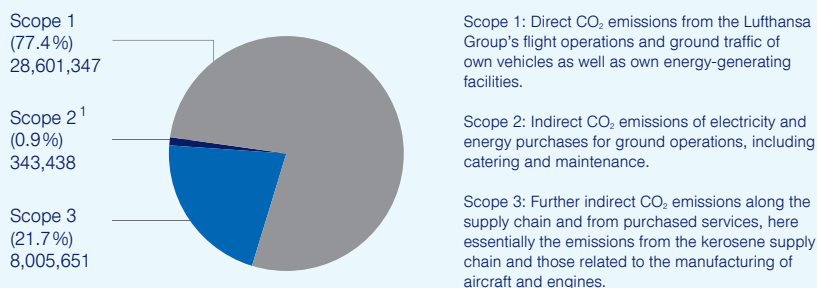
The Lufthansa Group determines its CO₂ emissions on the basis of the Greenhouse Gas Protocol (GHG Protocol), which divides emissions in three main categories or scopes (see pie chart).

All direct emissions from flight operations, shown in the pie chart "Direct and indirect CO₂ emissions of the Lufthansa Group", were recorded and verified on behalf of the Lufthansa Group in accordance with the requirements of the European Emissions Trading System. Additionally, the Lufthansa Group has recorded the indirect emissions caused by its business activities for a number of years. For the reporting year 2015, all recorded and calculated direct and indirect CO₂ emissions of the Lufthansa Group were verified externally for the first time (see page 117, Verification statement).

The CO₂ footprint helps the Group to identify its significant environmental effects more exactly and to develop subsequently more focused options for their reduction. Evaluating the CO₂ footprint shows that more than three-quarters of it result from direct Scope 1 CO₂ emissions (recorded are all emissions from the Lufthansa Group's flight operations and ground traffic of own vehicles) while about one-quarter results from indirect Scope 3 emissions. The latter include essentially the emissions of the kerosene supply chain and those related to the manufacturing processes of

Direct and indirect CO₂ emissions of the Lufthansa Group

2015, in tonnes



¹ The values for Scope 2 emissions are based on energy consumption values in 2014.

Specific fuel consumption Passenger transportation

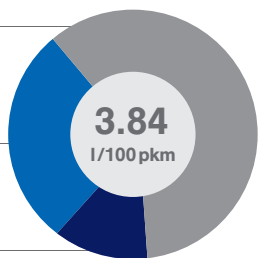
Active fleet in 2015, in liters per 100 passenger kilometers (l/100 pkm)
Definitions of traffic areas ● Long-haul more than 3,000 km ● Medium-haul 800 to 3,000 km ● Short-haul under 800 km

Group fleet

Long-haul
(60%)
3.48l/100 pkm

Medium-haul
(27%)
4.01l/100 pkm

Short-haul
(13%)
6.36l/100 pkm



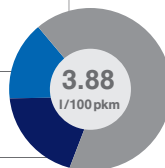
Average specific fuel consumption in l/100 pkm (center of the circle) and proportion of the entire passenger fuel consumption of the active fleet contributed by each traffic area (segments of circle) in 2015

Lufthansa

Long-haul
(67%)
3.61l/100 pkm

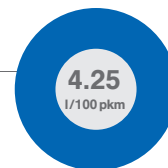
Medium-haul
(19%)
3.85l/100 pkm

Short-haul
(14%)
6.14l/100 pkm



Germanwings

Medium-haul
(100%)
4.25l/100 pkm



Specific fuel consumption of passenger transportation compared

in liters per 100 passenger kilometers (l/100 pkm)

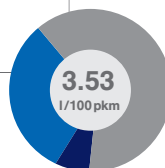
	2015	2014	Changes in %
Group fleet	3.84	3.84	± 0.0
Lufthansa	3.88	3.91	-0.7
Swiss	3.53	3.48	+1.2
Austrian Airlines	3.92	3.87	+1.3
Germanwings	4.25	4.18	+1.5

Swiss

Long-haul
(63%)
3.13l/100 pkm

Medium-haul
(30%)
4.06l/100 pkm

Short-haul
(7%)
8.57l/100 pkm

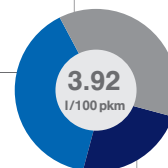


Austrian Airlines

Long-haul
(38%)
2.98l/100 pkm

Medium-haul
(37%)
4.17l/100 pkm

Short-haul
(25%)
6.59l/100 pkm



Specific CO₂ emissions of passenger transportation

Active fleet in 2015,
in kilograms per 100 passenger kilometers (kg/100 pkm)

	Long-haul	Medium-haul	Short-haul	Overall average
Group fleet	8.77	10.11	16.03	9.69
Lufthansa	9.10	9.71	15.46	9.78
Swiss	7.88	10.23	21.59	8.88
Austrian Airlines	7.51	10.50	16.61	9.88
Germanwings		10.70		10.70

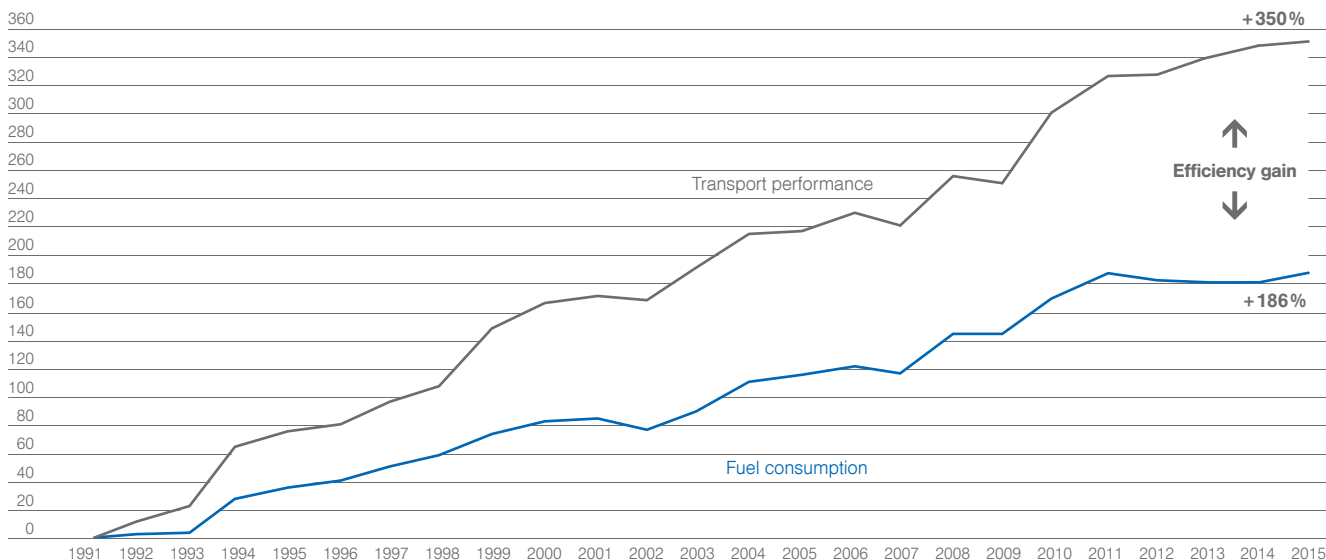
Fuel Dumps

Active fleet in 2015

	2015	Changes compared to 2014
Events, total	20	+4
thereof medical reasons	11	+4
technical reasons	9	+1
other reasons	0	-1
Quantity, total¹	564 t	+9.9%

Decoupling of transport performance and fuel consumption

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



Fuel consumption²

	2015, in tonnes			
	Passengers	Freight	Total	Share
Scheduled flights^{3,4}				
Lufthansa	4,768,746	1,585,102	6,353,847	70.1%
Swiss	1,101,795	393,362	1,495,156	16.5%
Austrian Airlines	579,837	87,802	667,638	7.4%
Germanwings	430,592	532	431,124	4.8%
			8,947,766	98.8%
Third parties ⁵	82,980	1,418	84,398	0.9%
Other flights⁶			25,619	0.3%
All flights			9,057,783	100.0%

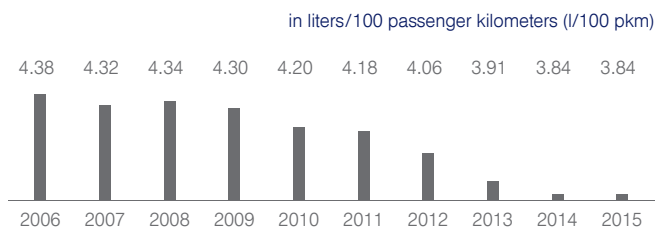
Emissions^{4,7}

	2015, in tonnes					
	Passengers	±2014	Freight	±2014	Total	±2014
CO₂	21,675,053	+2.0%	6,510,409	-0.6%	28,185,463	+1.4%
NO_x	103,570	+3.1%	31,877	+0.3%	135,447	+2.4%
CO	15,808	-0.7%	3,329	-0.1%	19,137	-0.6%
UHC	1,509	-3.8%	350	-8.8%	1,859	-4.8%

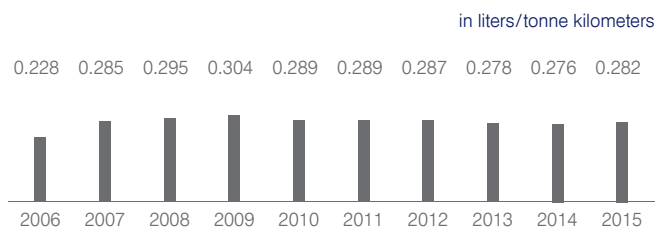
Share of third parties^{5,8}

	2015
Flights	2.4%
Passengers	1.8%
Tonne kilometers transported, TKT (tkm)	0.6%
Fuel consumption (tonnes)	0.9%
CO ₂ emissions (tonnes)	0.9%

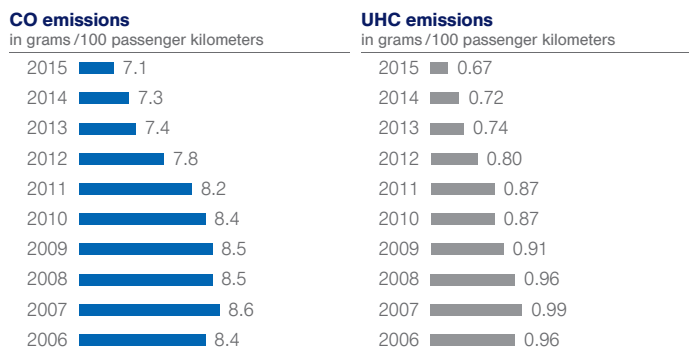
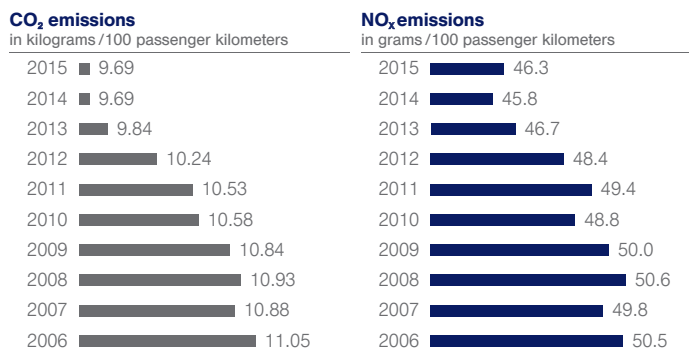
Specific fuel consumption Passenger transportation



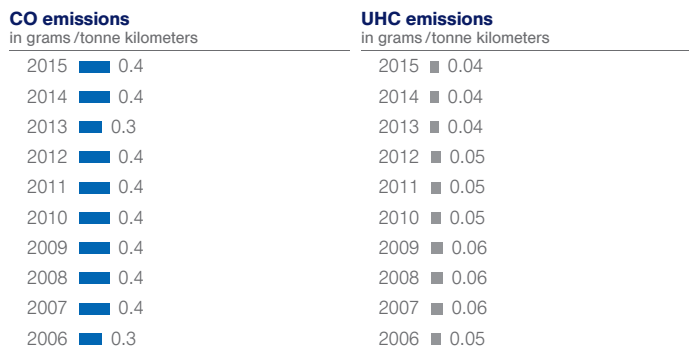
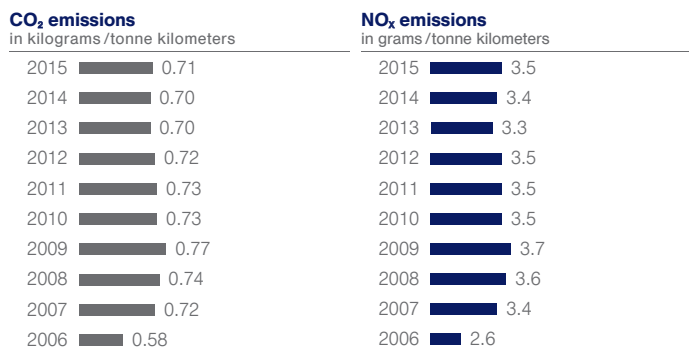
Specific fuel consumption Freight transportation⁹



Passenger transportation



Freight transportation⁹



1 Projections

2 Actual fuel consumption in tonnes from flight operations, based on all flight events under the respective operative flight number. Recorded are consumption values from gate to gate, i.e. including taxiing on the ground, holding patterns, and detours in the air.

3 Scheduled flights, charter flights.

4 For the reporting year 2015, the following companies have been included in *Balance*: Lufthansa (incl. Lufthansa CityLine, Air Dolomiti and Eurowings), Germanwings, Swiss (incl. Edelweiss Air), Austrian Airlines and Lufthansa Cargo. Excluding the services of third parties as the Company can influence neither their performance nor the equipment operated (see table Share of third parties).

5 Includes flights operated by companies that are not part of the Group, which assume services at short notice on Lufthansa's behalf, as in the case of capacity bottlenecks.

6 Ferry flights, special flights, training flights, test flights, aborted flights.

7 Absolute emissions in tonnes resulting from flight operations (all scheduled and charter flights). Recorded are consumption values from gate to gate, i.e. including taxiing on the ground, holding patterns, and detours in the air (see notes on page 116).

8 Excludes road feeder service and partial capacity chartered by Lufthansa Cargo, as no fuel consumption and emissions values are available for this performance.

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



Especially impressive at a height of 2.4 meters, the wing-tip extensions or “sharklets” of the A320neo yield aerodynamic improvements and thus increase fuel efficiency.



Over the past years, the Lufthansa Group has integrated about 30,000 lightweight trolleys into flight operations, replacing the existing service trolleys aboard its long-haul aircraft.

aircraft and engines. The emissions related to electricity and energy purchases for ground operations, including catering and maintenance (Scope 2), do not even amount to 1 percent of the total footprint.

523 internal fuel-efficiency projects

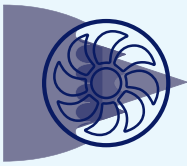
All projects in the subject area “fuel efficiency” are managed by the department Flight Operations Standards and Projects Group Airlines. Under this organizational umbrella, the Lufthansa Group pursues the many fuel efficiency programs it has set in motion over the past years. Since 2013, the aviation group has launched or implemented a total of 523 internal projects. For example, this includes 168 measures concerning weight reductions – such as the lightweight on-board trolleys – and 231 operative measures – such as the optimized vertical approach profile at Munich Airport (see page 46, *Balance* 2015).

Two of the Lufthansa Group’s fuel-efficiency projects were selected during the reporting year by the Air Transport Action Group (ATAG) for its publication “Aviation Climate Solutions”. The latter presents 100 outstanding programs and initiatives in the aviation industry and thus illustrates the entire scope of projects of the aviation industry’s established four-pillar strategy for climate protection. The first case study “The Aircraft Diet” casts a light on the Group airlines’ numerous activities concerning the long-term reduction of aircraft weight. The second selected project focuses on the topic of “electric ground movement” and presents the initiative E-PORT AN at Frankfurt Airport (see page 52, Energy and resource management).

Four pillars for climate protection

1

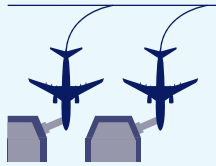
Technological progress



- Innovation in aircraft and engine technologies
- Alternative fuels

2

Improved infrastructure



- Improved use of airspace
- 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



- A global, sensibly designed, market-based system for reducing emissions to complement the other three pillars



Four pillars for climate protection

While air transport contributes a mere 2.4 percent of CO₂ emissions caused by human activity worldwide, this value is expected to increase as demand for mobility continues to grow strongly. To limit the ecological effects of flying, the aviation industry has developed the four-pillar strategy for climate protection, which bundles different environmentally relevant measures (see illustration above). These range from technological progress and improved infrastructure to operational measures and economic instruments. The four-pillar strategy is also the basis for the Lufthansa Group's fuel-efficiency activities.

Pillar 1: Technological progress

Efficient aircraft and engine technologies

The most effective way to increase fuel efficiency is to invest in the most modern and especially environmentally friendly aircraft. For this reason, the Lufthansa Group is currently implementing the largest fleet modernization program in its history: By 2025, it will take delivery of 251 latest-generation aircraft, which will mostly replace older models (see page 29,

Fleet development). Among these will figure 116 aircraft of the Airbus A320neo family, which will be up to more than 15 percent more fuel-efficient than comparable predecessor models thanks to geared-turbofan technology. The new CSeries aircraft manufactured by Bombardier, of which Swiss is set to receive the first exemplars from summer 2016, will fly with similar fuel-efficiency. Thus, the Lufthansa Group foresees further improvements in its environmental balance sheet.

“We are very pleased that we and our partners have been able to set an important milestone for climate-friendly air transport by means of bio-kerosene fueling in Oslo. The Lufthansa Group is the first airline group worldwide to have signed a regular procurement contract of this kind with a supplier.”

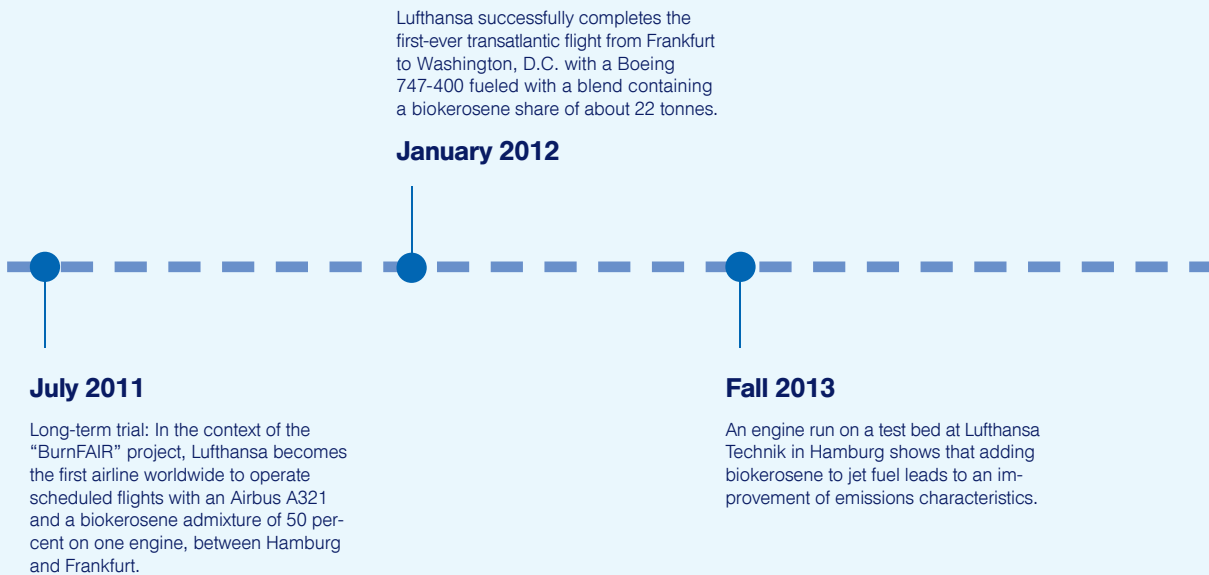


Thorsten Luft
Vice President Corporate Fuel Management
Lufthansa Group

Research and use of alternative fuels

The use of alternative fuels represents another step towards the air transport of the future. As biokerosene has a significantly lower net CO₂ balance sheet value, it allows a sustainable reduction of emissions from flight operations. Following this approach, the conflict of objectives that arises from growing demand for mobility worldwide and finite resources of fossil fuels can be resolved. The Lufthansa Group undertook some pioneer work to this end in 2011, when it tested the use of biofuel in regular flight operations for about six months as a trial run in the context of the

Alternative fuels



project “BurnFAIR – Potentials of alternative fuels in operational conditions” (see timeline). In addition to its own research work, the aviation group has been actively committed for many years to a number of initiatives such as aireg (Aviation Initiative for Renewable Energy in Germany) and SAFUG (Sustainable Aviation Fuel Users Group).

In February 2015, an interim report was published for the EU research project “Blending study”, an initiative jointly launched in 2013 and since carried out by the Lufthansa Group and the German Armed Forces’

Research Institute for Materials, Fuels and Lubricants (see page 55, *Balance* 2014). The two partners have gained important insights into the blending characteristics of conventional fossil kerosene types and various new biokerosenes in the context of this project. The final report is expected in 2016. Moreover, the final report of the Lufthansa-coordinated research project “BurnFAIR” was published in June 2014.

Since January 22, 2016, the Lufthansa Group has been refueling its aircraft at Oslo Airport with a fuel mix that contains 5 percent of biokerosene. Air BP Aviation,

the Norwegian airport operator Avinor and the biofuel specialist SkyNRG have joined forces to offer jet biofuel to the airlines at Gardermoen Airport. For the duration of one year, Air BP Aviation will feed 1.25 million liters of sustainably produced and appropriately certified biofuel into the tanks at Oslo Airport. During this time, about 5,000 flights operated by the airlines of the Lufthansa Group will fly on a mix of biokerosene and conventional jet fuel. This applies to Lufthansa, Swiss, Austrian Airlines, Germanwings and Brussels Airlines.

The final report for the research project “BurnFAIR”, which was coordinated by the Lufthansa Group, is published.

June 2014

An interim report is published for the EU research project “Blending Study”, launched in 2013.

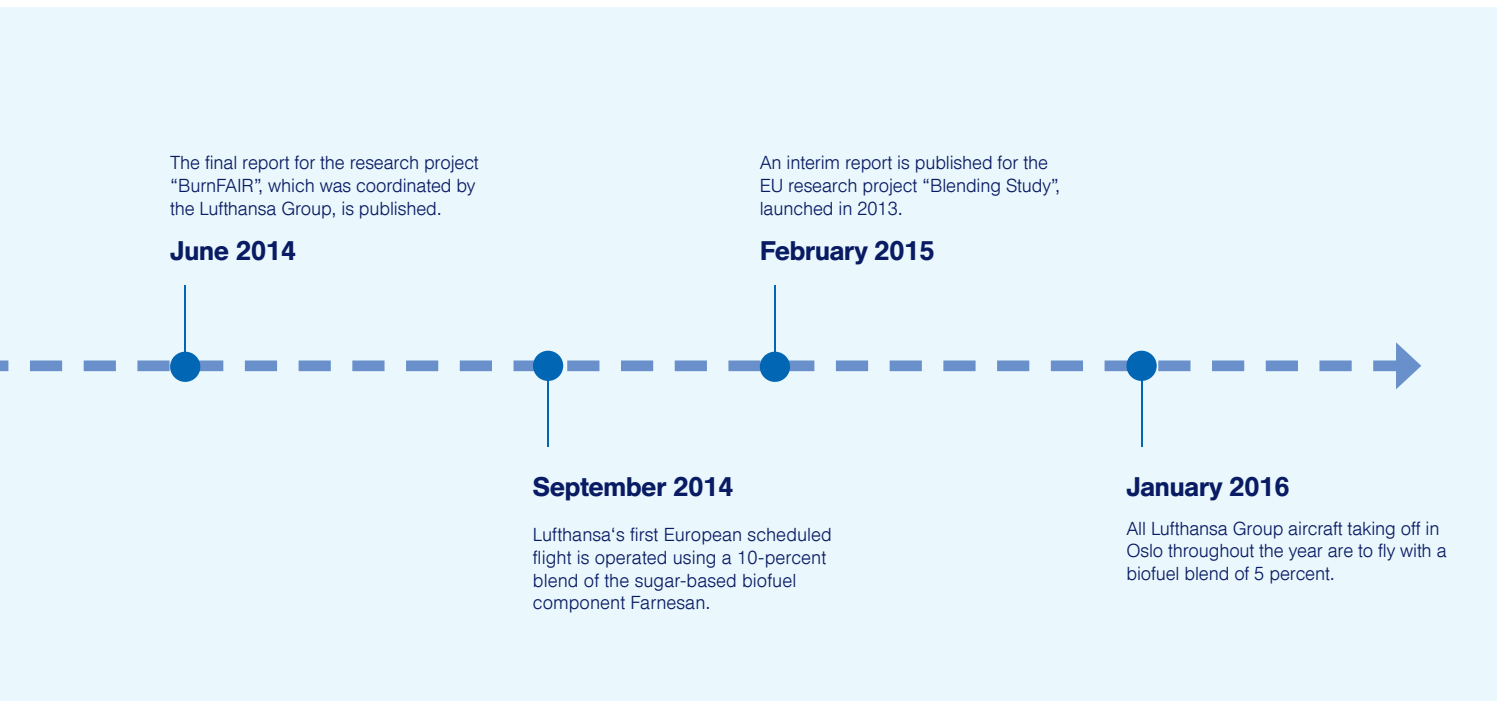
February 2015

September 2014

Lufthansa's first European scheduled flight is operated using a 10-percent blend of the sugar-based biofuel component Farnesan.

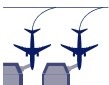
January 2016

All Lufthansa Group aircraft taking off in Oslo throughout the year are to fly with a biofuel blend of 5 percent.





The implementation of the Single European Sky is the largest climate protection project of European aviation. More direct routings without unnecessary detours would reduce the CO₂ emissions of European airlines by 10 percent a year.



Pillar 2: Improved infrastructure

Single European Sky

The largest climate protection project in European aviation is to establish a standardized airspace above Europe. This Single European Sky (SES) would help airlines to emit 10 percent less CO₂ and save about 5 billion euros in fuel costs every year. Today, however, about 60 air traffic control centers are responsible for air safety in 27 different national systems with more than 650 sectors, a system that does not always allow aircraft to follow an optimum route to their destinations.

The goal of SES is to remove this kind of patchwork and to steer air traffic flows substantially more efficiently than is currently the case. An important milestone on the path toward the Single European Sky is the standardization and modernization of the European aviation infrastructure. For this purpose, the European Commission set up the SESAR (Single European Sky ATM Research) program. The goal of this project is to develop, test and implement Europe-wide new technologies, procedures and standards that contribute to harmonizing and optimizing the European air traffic management.

The Lufthansa Group's airlines and Lufthansa Systems are actively involved with their respective expertise in a number of SESAR research and demonstration projects as well as standardization initiatives. The synchronization of SESAR with its American counterpart "NextGen" as the basis for global interoperability of air traffic control systems has a high priority in this context. The first modernization package was integrated by the European Commission in the Pilot Common Project (PCP). The implementation of these technologies in daily operations is jointly coordinated by the members of the industry consortium "SESAR Deployment Manager". Since the start of the introduction phase in 2014, the

first positive effects from optimized routings and flying times have been observed in the daily operations of airports, air traffic control organizations and airlines.

Currently, the experts of the Lufthansa Group are participating in numerous demonstration projects. In the framework of the project Free Solutions, whose goal is the introduction of more direct flight routings under scheduled flight conditions, 68 flights were able to travel on such routings in Europe. About 5 tonnes of fuel and 126 minutes of flying time were saved on these flights. The routes from Frankfurt to Nice, Málaga, Algiers, Barcelona and Valencia as well as the route from Munich to Paris could thus be shortened permanently. The quantity of kerosene saved in this way each year corresponds to the fuel burn of about 200 flights between Frankfurt and Zurich.

In the project Augmented Approaches to Land (AAL), approaches are currently flown in Frankfurt and Bremen with the three Airbus A319s specifically retrofitted for this purpose as well as the Airbus A380 and the Boeing 747 fleets. Fraport, DFS and Lufthansa jointly analyze the data from these test flights to see if the distribution of noise emissions might be better controlled when aircraft adhere with greater precision to the flight path by means of new flight procedures.

Adequate airport infrastructures

Nevertheless, the conditions for efficient air traffic management must be provided not only in the air but also on the ground. Above all, the adaptation of total airport infrastructures to actual demand plays a leading role in this context.

Lufthansa express

Intermodal transport concepts

Furthermore, the intelligent interlinking of different modes of transport can make a contribution to reducing traffic volumes and thus also to lightening environmental burdens. For many years, the Lufthansa Group has realized intermodal transport concepts together with partner companies, which interconnect air, rail and road traffic systematically. In October 2015, the Company bundled its comprehensive services for intermodal travel under the unified brand name Lufthansa Express. The spectrum of travel options before and after a flight ranges from ICE high-speed trains to modern long-distance busses and car-sharing.



With the inauguration of the new satellite terminal at Munich Airport, the capacity of Terminal 2, used by Lufthansa and the other Star Alliance airlines, increased by another 11 million to a total of 36 million passengers per year.



Pillar 3: Operational measures

Operational measures include the deployment of efficiently-sized aircraft; the improved utilization, testing and introduction of new flight procedures; as well as the determination of optimum flight routes and flight speeds. These are complemented by programs for long-term weight reductions, the development of intelligent software tools and the introduction of increasingly more efficient processes on the ground.

Weight reduction

Over the past years, the Lufthansa Group has integrated into its flight operations about 30,000 lightweight trolleys, which replace the previous model of service carts aboard long-haul aircraft. By the end of 2016, all trolleys will have been replaced by the "Quantum Light Weight Trolley", co-developed by LSG Sky Chefs. Manufactured from high-grade sandwich material

composites (metal-matrix composites), the new trolleys are about 35 percent more lightweight than their predecessors.

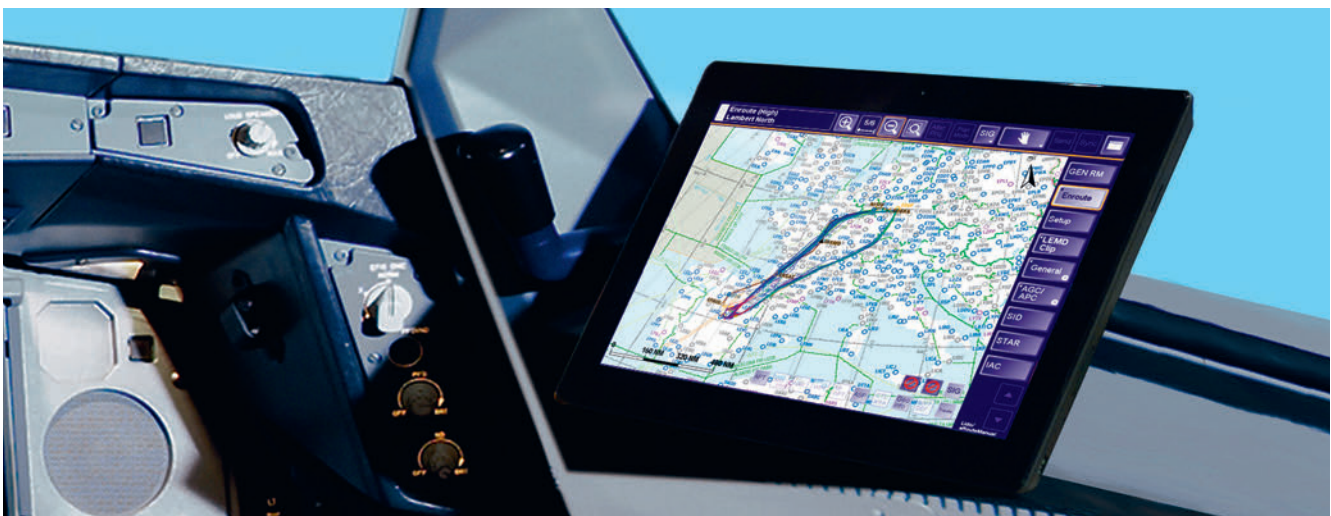
Lufthansa Cargo is planning to replace all standard stowage materials with more lightweight alternatives by 2020. By the beginning of 2016, the air freight specialist had already replaced more than 60 percent of its containers, including all AKE-type containers. Likewise, the replacement of AKH/DQF-type air freight containers by lightweight models is currently advancing. Together with its subsidiary Jettainer, Lufthansa Cargo is also working on a solution for more lightweight pallets.

At Lufthansa and Lufthansa CityLine the "electronic Flight Folder" (eFF) ushered in a new era in flight preparations. In the future, pilots will use a new briefing application on their Electronic Flight Bag (EFB) to check on conditions along a flight routing and to calculate the quantity of kerosene to be refueled – another step towards the paperless cockpit.

OMEGA – The post-flight analysis

In September 2015, the Lufthansa Group's efficiency project OMEGA (Ops Monitor and Efficiency Gap Analyzer) was successfully concluded after a project phase of about three years. The new fuel-efficiency software, developed jointly with IT specialists Aviaso, was successfully transferred into scheduled operations.

Honored with the Innovation Award of German Aviation in 2016, OMEGA combines both planning data and actual performance data from the Flight Data Recorder (FDR) to analyze them in tandem. Thus far, only planning data had been used in the analysis of fuel consumption, which left new conservation potentials unidentified and made the assessment of savings significantly more difficult. The new software allows the aviation group to analyze actual fuel consumption, loading configurations, flight routings and many other factors with regard to their efficiency.



The module "Tracks" of the electronic navigation maps Lido/eRouteManual shows pilots not only the routing currently planned but also the routings actually flown in the past. In this way, they receive information on possible more direct routes before the beginning of a flight and can request these from air traffic control if appropriate.



Pillar 4: Economic measures

Optimization of flight routings

Currently about 120 airlines worldwide, including most airlines within the Lufthansa Group, rely on Lido/Flight by Lufthansa Systems. On the basis of total flight-relevant data, weather conditions and current airspace conditions, including all restrictions, this tool automatically or interactively calculates the best suitable routing for a flight. Comparison calculations on the basis of more than 4,000 flight plans revealed: Depending on the particular optimization goal, Lido/Flight allows the reduction of fuel consumption, flight time or flight costs inclusive of air traffic control fees by up to 2 percent, in contrast with other applications. The next-generation product Lido/Flight 4D will be introduced step by step from 2016. It offers even greater integration, modern graphic displays, 4D optimization and comprehensive automatization of flight routing and flight routing management processes.

Meanwhile, the module "Tracks" of the electronic navigation solution Lido/eRoute-Manual shows pilots not only the routing currently planned but also the routings actually flown in the past. In this way, they receive information on possible more direct routes before the beginning of a flight and can request these from air traffic control if appropriate. Currently in trial operation at Lufthansa, "Tracks" is expected to be introduced in July 2016. In fall 2015, Lufthansa Systems presented a new Mobile Updater, which pilots can use to update their Lido/eRouteManual at any time and at any location.

Lufthansa Cargo focuses as well on the systematic search for route shortcuts, so-called "directs". In this context, the air freight specialist also began using the analysis of historical flight routings from mid-2016. Possible shortcuts are to be

included in flight route planning later on, in coordination with the relevant control centers. Furthermore, Lufthansa Cargo set up an additional waypoint for the alternative airport Frankfurt Hahn in coordination with Deutsche Flugsicherung (DFS). For approaches to Frankfurt, this measure shortens the distance to be planned to Hahn and thus less kerosene has to be carried during each approach to Frankfurt, even should the alternative airport not be needed. In this way, the airline conserves about 950 tonnes of kerosene per year. Lufthansa Cargo optimized the routes to the alternative airports associated with other destinations in the same way, conserving another 280 tonnes of fuel per year.

More efficiency thanks to Cycleclean®

The innovative Cycleclean® Engine Wash, developed by Lufthansa Technik, helps airlines worldwide to reduce the kerosene consumption of their aircraft by up to 1 percent. Airlines have applied the water-based engine wash system more than 40,000 times to date – in part because it is the only established procedure of this kind that can be applied right at the gate. Another advantage is that engines can now be cleaned at external temperatures down to minus 10 degrees Celsius. Lufthansa Technik offers Cycleclean® for all current engine types produced by the large manufacturers such as General Electric, Pratt & Whitney, Rolls-Royce, CFMI and IAE. In addition, the company also offers a dry washing method for aircraft fuselages, using a cleaning paste; this alternative takes more effort than wet washes but consumes significantly fewer resources. Meanwhile, Lufthansa Technik is working to develop further innovations. Among these efforts is a research project set to run until 2017 to test small CO₂ dry-ice pellets and other blasting abrasives for cleaning engines.

Economic incentive systems are to be understood as a complement to the preceding pillars. For the Lufthansa Group, the most effective instrument in this area is a worldwide-valid, market-based and competition-neutral system for CO₂ compensation (also called carbon offsetting). The United Nations' International Civil Aviation Organization (ICAO) decided in October 2013 to develop a system for climate charges with worldwide validity, whose introduction is to be approved in October 2016 (see interview on page 37).

By contrast, the European Union currently still applies an emissions trading system concerning all intra-European flights. In the opinion of the Lufthansa Group, insular solutions of this kind are the wrong approach, as they unilaterally burden European airlines in contrast to airlines outside of Europe (see page 59, *Balance* 2014). Should the ICAO plenary session in October 2016 not approve a global solution, the EU has announced its intention to expand its emissions trading system to all international flights to and from EU airports.

Another option for limiting the effects of CO₂ emissions from air transport are voluntary CO₂ compensation schemes. The Group airlines Lufthansa, Swiss and Austrian Airlines as well as the Lufthansa subsidiary AirPlus have offered their customers such programs for many years (see page 67, CO₂ compensation).

Energy and resource management

Making aircraft more fuel-efficient and quieter is a pivotal, but not the only, adjustment lever for increasing the environmental compatibility of air transport. On the ground, as well, there are a myriad of opportunities to limit emissions of pollutants and noise, as well as to use valuable resources efficiently and responsibly.

The Lufthansa Group sees great potential in electromobility, which marks a technological paradigm shift in traffic on the ground. To conserve fossil energy and minimize emissions related to aircraft handling, the Group is active in a number of electromobility projects. These are in accordance with the goals of the world aviation association IATA and are part of the aviation industry's four-pillar strategy for climate protection (see page 45).



Electromobility: E-PORT AN initiates paradigm shift

Electricity instead of gasoline, diesel or kerosene: Such is the basic principle of the initiative E-PORT AN at the Frankfurt hub, which is supported by the Lufthansa Group,

Fraport AG, the State of Hesse and the Rhine-Main Model Electromobility Region. The goal of the initiative – which was honored as a “Lighthouse Electromobility Project” by Germany's Federal Government in 2013 and is supported by the Federal Ministry of Transport and Digital Infrastructure – is to switch ground traffic related to handling processes on the apron to electrical power technologies step by step. The project's focus is as much on taxiing and towing of aircraft as it is on



The eSchlepper diesel-electric hybrid aircraft tug is particularly suited for environmentally friendly maintenance and positioning tows of large passenger aircraft.

vehicles that carry passengers, freight and catering supplies. The Lufthansa Group participates in E-PORT AN with a hybrid tug that can be controlled from the cockpit (TaxiBot), the towbarless “eSchlepper” (eTug) for large passenger aircraft and the catering lift truck “eLift” on the basis of an electrically-powered truck chassis (see page 51, *Balance* 2015). The initiative is supported scientifically by Technische Universität Darmstadt (TaxiBot, eSchlepper) and Technische Universität Berlin (eLift).

First “green gate” worldwide at Frankfurt Airport

In October 2015, the E-PORT AN project partners opened the world’s first “green gate” at Frankfurt Airport. At Lufthansa Gate A15 models, display panels and animations now inform passengers about the numerous electromobility projects at Germany’s largest civil airport. Preceding this opening, the initiative partners had sought exchanges with the public to present the projects of E-PORT AN during the Hamburg Airport Days in August 2015. The young academics participating in Frankfurt University’s Ph.D. Summer School were also enthusiastic about the innovative ideas to improve working and environmental conditions on the apron.

“Eco-Company Partnership of the Year”

In February 2016, the US trade publication *Air Transport World* bestowed the award “Eco-Company Partnership of the Year” on the Lufthansa Group and Fraport AG. This renowned publication thus honored not only the pioneer role of the E-PORT AN system partners and their joint commitment for more electromobility on the apron, but also the entire initiative, including the State of Hesse and the Rhine-Main Model Electromobility Region.

www.e-port-an.de



In October 2015, the partners of the initiative E-PORT AN opened the first “Green Gate” at Frankfurt Airport.

Energy management

Targets of EU Energy Efficiency Directive fulfilled

According to the EU Energy Efficiency Directive (EED) taking effect on December 4, 2012, companies in the EU above a certain size were obligated to carry out energy audits by December 5, 2015, and thereafter at least every four years. In Germany and some other EU countries this deadline has been extended. Deutsche Lufthansa AG is affected by the EED as well as those EU-headquartered subsidiaries in which the Group holds at least a 25-percent stake. For the Lufthansa Group, this meant that a total of 120 companies had to be audited (see page 52, *Balance* 2015).

The audits were completed on-schedule in Germany by the end of April 2016, and within the EU by the end of May 2016. The Group-wide results – including more than 300 suggestions for improving the energy efficiency of buildings – will serve as a basis for further optimizing the aviation group’s energy management. The energy experts of the department Group Infrastructure Commercial will consult and steer this process, and will act as contact point for all energy-related questions. This depart-

ment is also responsible for the Group-wide central energy management, in order to increase the links between subsidiaries and to intensify exchanges on best-practice cases.

LSG Sky Chefs active in “LEEN 100” network

LSG Sky Chefs has been active in Frankfurt in the “LEEN 100” network since 2015; moreover, the company hosted the second Energy Efficiency Round Table in mid-October 2015. The “Learning Energy Efficiency Network” (LEEN) was set up for a four-year term by its initiators: the City of Frankfurt and the Society for Job Security, Quality and Environmental Management. Founded in May 2015, the network is working to improve the CO₂ emissions values in the Rhine-Main region and to increase the share of renewable energies. About 20 participants from eight companies in various industries took advantage of the Round Table to discuss significant measures and advances in reducing their companies’ CO₂ emissions. Furthermore, a guided tour took place at the airline catering facility, which occupies 29,000 square meters at Frankfurt Airport and whose equipment includes 15 energy-and-water-efficient industrial dishwashing lines and machines.



View of the state-of-the-art LSG Sky Chefs operation in Chicago, which was opened at the end of 2015. Constructed in accordance with LEED standards (Leadership in Energy & Environmental Design), this airline catering building is the first worldwide to have received the quality seal of the U.S. Green Building Council (USGBC).

“The LSG Group has installed eTemp® at all of its North America facilities, as a result we are able to conserve almost 1,000,000 kWh of electricity and thus avoid 800 tonnes of CO₂ emissions during the reporting year. This corresponds to planting over 600,000 square meters of pine forest on an annual basis.”



Dr. Kenneth F. White
Director Environmental Systems
LSG Group

Pilot trial runs with intelligent eTemp® thermostat

In 2014, the LSG Sky Chefs facility in Dallas, USA, ran pilot trials with an innovative type of thermostat. Unlike conventional thermostats, eTemp® switches on cooling units only when its sensors register significant temperature differences, while ignoring minor differences. The reason? The intelligent cooling system takes into account that when workers enter a cold storage unit the temperature of the air rises faster than the temperature of the food stored in it. Meanwhile, the LSG Group has installed eTemp® at all of its North America facilities.

The Lufthansa subsidiary regularly provides information about the most important energy and water ratios in its Environmental Report.

Getting the LCC in better shape

Following the Lufthansa Group's decision in April 2015 to delay the construction of the new Lufthansa Cargo Freight Center “LCCneo” at Frankfurt Airport by at least two years, the logistics provider is concentrating on getting the existing LCC in better shape in 2016. To conserve energy, the installation of a new heating control system and the switch to LED lighting in certain areas are planned, among other measures.

Sustainable construction and modernization

The Lufthansa Group's strategic environmental program gives a high priority to ecological ways of constructing new facilities and modernizing existing ones. In doing so, the Group always applies the latest standards. An example for this approach is the Lufthansa Aviation Center (LAC) in Frankfurt, which was designed as a low-energy building. Given the EU's Green Building Award in 2009 for its exemplary energy efficiency, the LAC avoids about 1,200 tonnes of CO₂ emissions each year. To mark the LAC's tenth anniversary in 2016, the Lufthansa Group participated through the impressive illumination of its headquarters in the "Luminale" for the first time and thus directed the visitors' attention to the topic of sustainability.

"Green satellite" opened in Munich

On April 26, 2016, Munich Airport and Deutsche Lufthansa AG inaugurated the "Green Satellite". The new satellite terminal building sets new standards with regard to sustainability and energy efficiency. Compared with the existing Terminals 1 and 2, it emits up to 40 percent less CO₂. Other measures favoring lower emissions include the use of displacement ventilation technology for climatization as well as LED lighting and the dimming of lighting levels.

30 percent better than the Energy Conservation Regulations (EnEV)

Currently under construction, Lufthansa Technik's new wheels and brakes workshop in Frankfurt is to start operations at the beginning of 2017. By implementing the most modern facilities engineering, the new 14,500 square meter building will fall 30 percent below the requirements of the Energy Conservation Regulations. Moreover, Lufthansa Technik launched a project

in July 2015 to switch the lighting systems in all its buildings, and particularly in its aircraft maintenance hangar, to energy efficient standards. The goal is use the latest LED technology to reduce energy consumption by about 60 to 70 percent.

LSG Sky Chefs facility receives LEED quality seal

LSG Sky Chefs also works on systematically lowering the energy consumption in the context of new constructions and modernizations of existing buildings. Its latest example is a facility inaugurated in December 2015 in Chicago. The airline catering building was constructed in accordance with LEED standards (Leadership in Energy and Environmental Design) and is the first worldwide to receive the quality seal developed in 2000 by the U.S. Green Building Council (USGBC). LEED makes it possible to comprehensively evaluate a building over its entire life cycle, including its energy and water consumption.



The Lufthansa Aviation Center at Frankfurt Airport received the EU's "Green Building" award in 2009 for its exemplary energy efficiency.

Recycling / resource management

Recycling of aircraft components

With the goal of establishing an ecologically and economically sound recycling sequence for decommissioned aircraft, Lufthansa Technik launched the project “2nd Life” in 2012. The background here is that repairing aircraft parts and storing replacement components is resource-intensive. However, decommissioned aircraft contain a myriad of valuable materials and parts that can be reconditioned and reused for maintenance and overhaul purposes once they have been recertified. This applies, for instance, when components in the active fleet fail, their repair would lead to high costs or they would have to be sourced externally.

In the reporting year alone, the MRO specialist passed on four phased-out Boeing 747-400s from the Lufthansa Group to its subsidiary Lufthansa Technik Component Services (LTCS) in Tulsa, USA, for recycling. Since the start of the project, a total of 37 Lufthansa Group aircraft have been recycled via “2nd Life”. Depending on the type of aircraft, up to 1,000 components can be removed, including parts from landing gears, engines and auxiliary power units, cabin elements such as monitors and windows as well as instruments and data entry units in the cockpit. Which components are recycled depends on a number of factors, such as the consideration of which parts a particular aircraft was equipped with and the number of aircraft maintained by Lufthansa Technik that fly with these systems. Another important consideration is which parts are especially valuable, perhaps because they are no longer in production.

Turning organic waste into water

In January 2014 and May 2015, the LSG Sky Chefs facilities in Detroit and Los Angeles both introduced a procedure that turns organic waste into water. The technological basis is a closed decomposition system developed by EnviroPure that accelerates the natural decomposition process of organic waste. Provided there are optimum temperatures and sufficient oxygen, almost all types of organic waste can be decomposed in this way within 24 to 48 hours. The process works with the addition of a specific biologically degradable additive that supplies the bacteria naturally present in waste materials with complementary micro nutrients. The result is a harmless liquid that can be discharged through the public sewer system.

Project “Zero Waste to Landfill” successfully implemented

“Zero Waste to Landfill” (ZLF) is a program that was launched in spring 2013 by LSG Sky Chefs at all 41 US locations to recycle 100 percent of its waste materials. At the end of 2015, the catering specialist achieved its ambitious goal. On December 31, the sum total of recycled waste materials reached 22,444 tonnes; for the program’s total duration this figure was 43,316 tonnes.

“With the project ‘2nd Life’ we have established an ecologically and economically sensible recycling circuit for decommissioned aircraft. Since the project’s launch, the Lufthansa Group has already recycled 37 phased-out aircraft in this way.”



Hans Bernd Schmidt
Initiator of the “2nd Life” program
Lufthansa Technik AG



The implementation of paperless processes moves forward: Lufthansa Technik launched the “paperless maintenance” program in 2014.



Initiative “Fly Greener”

Launched in 2014 and guided by environmental thinking, the Group initiative “Fly Greener” traces back to the commitment of Munich-based Cabin Crew Manager Rebecca Emmerling. In 2015, a removal campaign at the Munich hub showed that above all the disposal of liquids can be substantially improved. The campaign was repeated in June 2016 to widen the database. Another goal was to find out what has changed in the composition of waste materials thanks to the Fly Greener ambassadors and their work on board.

Fly Greener works closely with the environmental experts at LSG Sky Chefs to recycle as much of the on-board waste materials as possible and to analyze additional recycling options on the ground. The basis of the waste management system at the world’s largest airline caterer is a comprehensive internal system of ratios as well as national laws and regulations, which govern the handling of on-board waste materials worldwide (see page 53, *Balance* 2015).

Fly Greener was launched as a hub-airline project in 2016. Other Group companies, such as Lufthansa CityLine and Austrian Airlines, are already involved.

Digitalization of processes

Compared with current processes, digital technologies could lower the global CO₂ emissions by 20 percent by 2030 – according to the latest study carried out by the Global e-Sustainability Initiative (GeSI). To realize this potential, the Lufthansa Group has advanced the digitalization of its processes on the ground and in the air for many years. For example, Electronic Flight Bags (EFB) have been in use in flight operations since 1999; the rollout of EFB 2.2, their third generation, was initiated in October 2014 (see page 12, *Balance* 2015). Another important role is played by the consistent switch to paperless tickets, boarding passes and baggage receipts as well as the expansion of the digital reading materials offered aboard Lufthansa aircraft in the form of eJournals for mobile devices, which partially replace the print version.

Electronic flow of documents: eFreight

Since 2007, Lufthansa Cargo has been continuously expanding the paperless form of air freight transport (eFreight) worldwide. The ultimate goal is to handle all transport documents fully digitally in order to exchange information automatically, to simplify processes, to increase efficiency and to lighten the burden on the environment (see page 64, *Balance* 2014). As the first step, Lufthansa Cargo has already implemented the infrastructure to digitalize the air waybill, the central freight document. Today, about a third of all shipments already fly without a paper-based air waybill.

Paperless aircraft maintenance by 2017

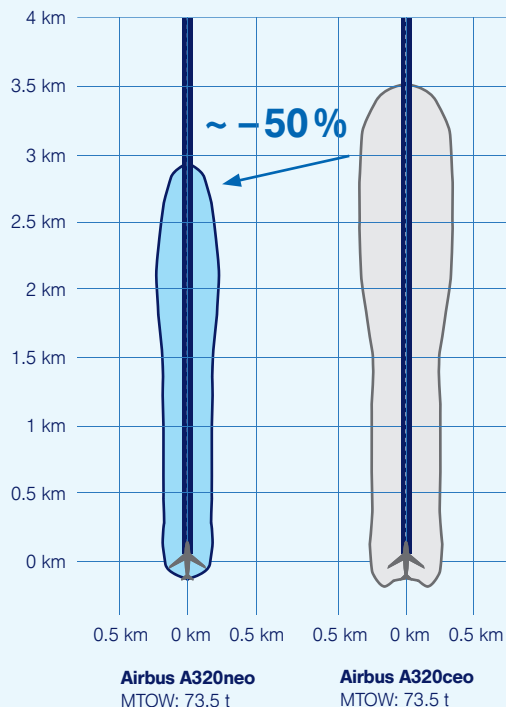
Digital solutions are also implemented by Lufthansa Technik. The latest example is the program “paperless maintenance”, which was launched in 2014 and not only reduces paper consumption, time, costs and environmental resources but also accelerates data capture and increases data quality. The goal is to carry out all maintenance documentation at the aircraft fully electronically by 2017 and to abolish in large part the use of paper.

Active noise protection

Air transport is unavoidably associated with the generation of noise, particularly in areas surrounding airports. For many years, the Lufthansa Group has worked to reduce these emissions increasingly and has applied numerous measures in the area of active noise protection. To this end, the Group also cooperates with partners in industry, public administrations, universities and research.

Noise contours compared A320neo vs. A320ceo

The Airbus A320neo (new engine option) has an approximately 50 percent reduced noise contour compared with the Airbus A320ceo (current engine option). The 85 dB(A) maximum noise level contours are shown for a takeoff with Lufthansa standard takeoff procedures and maximum takeoff weight (MTOW). By comparison, a maximum noise level of 85 dB(A) is produced by a truck passing at a distance of five meters (16 feet) in city traffic.



Source: Airbus

The Lufthansa Group's commitment to active noise protection is based on five central points. These include investing in the most modern aircraft, retrofitting the existing fleet with noise-reducing technologies, conducting noise research, and developing noise-reducing procedures for both approach and departure in cooperation with the system partners. Furthermore, the Company places great emphasis on the constructive dialogue with neighbors of airports and other interest groups. When implementing specific measures, the Group also takes into consideration the aspect of economic efficiency.

With regard to noise emissions, today 592 of 595 aircraft in the Lufthansa Group's active fleet already fulfill the currently strictest Chapter-4 standard of the International Civil Aviation Organization (ICAO), which has been in effect since 2006 for new aircraft (see overview page 118). The new Chapter-14 standard will be applied for newly certified aircraft types from 2017, which will significantly lower the limit value yet again.

Thanks to new engine technology, the 85-decibel noise footprint of an A320neo at takeoff is only half as large as that of a comparable airplane in the current fleet.

New aircraft mean audible improvements

The greatest progress in reducing aircraft noise can be achieved by the operation of modern aircraft. The Lufthansa Group invests continuously in this area.

For example, Lufthansa will decommission all Boeing 737s by the end of 2016 and replace them with A320neo aircraft. Thanks to new engine technologies, the A320neo is by far the most efficient and quietest aircraft on short- and medium-haul routes.

The Lufthansa Group has a total of 116 A320neo and A321neo aircraft on order, which will be delivered over the years ahead (see page 29, Fleet development). Of these, 60 aircraft will be equipped with the new PW1100G-JM engines manufactured by Pratt & Whitney. The new engines and improved aerodynamics allow a significant reduction of noise and emissions. Accordingly, the 85-decibel noise footprint at takeoff of an A320neo is only half as large as that of a comparable aircraft in the existing fleet (see illustration).

On long-haul routes, the Airbus A350-900, which will be delivered to Lufthansa from winter 2016, is set to contribute significantly to lessening the burden on people living near large hubs. The A350-900 is the most modern and environmentally-friendly long-haul aircraft worldwide; its noise footprint



will be about 50 percent smaller than that of predecessor models. The most advanced Rolls-Royce Trent XWB engines and an aerodynamically optimized design reduce noise emissions to a point far below currently applicable limits.

At Swiss, the new CSeries by Bombardier will replace the currently operated Avro RJ100 regional aircraft, starting in 2016. This generational change in the skies means above all a perceptible improvement in noise burdens for airports neighbors, as the CSeries also sets new standards in noise emissions.

And Lufthansa Cargo received its fifth Boeing 777F freighter aircraft in February 2015. Compared with other freighters, this aircraft is characterized by the smallest noise footprint in its class. It also meets the most stringent noise standards and thus has maximum access to airports with high noise protection limits.

Vortex generators for the A320 fleet

To date, the experts at Lufthansa Technik have equipped all Airbus A319, A320 and A321 aircraft at the Frankfurt and Munich hubs with noise-reducing vortex generators. In addition, all newly delivered aircraft of this type from Airbus have featured these components as standard equipment since 2015. At the beginning of 2014, Lufthansa began operations with the world's first vortex-generator-equipped A320, thus introducing yet another industry standard. As these parts have become part of the noise reduction programs of numerous airports, interest in vortex generators is growing among other airlines as well.

As a result of retrofitting and new acquisitions, more than 200 aircraft in the Lufthansa Group's fleet will fly substantially quieter than before in the future. This will affect every second landing of a Lufthansa aircraft in Frankfurt, as the Airbus A320 fleet has a share of about 50 percent of all flights at this hub.



In 2015, flyover measurements were conducted at Magdeburg-Cochstedt Airport with Lufthansa Cargo MD-11 freight aircraft to test noise-reducing modifications on engines and landing gear.

Noise research: A costly and complex challenge

The project MODAL (Models and Data for the Development of Active Noise Protection Measures in Aviation), which was headed by the Lufthansa Group and supported in the context of the aviation research program of Germany's Federal Ministry for Economics and Technology, ended in 2015. Together with the German Aerospace Center (DLR) as well as several airports and scientific institutes, the Lufthansa experts have created a new database, which contributes to the development of an innovative flexible aircraft noise calculation method according to DIN 45689. At the end of June 2015, the research partners again conducted flyover measurements for MODAL with Lufthansa Cargo MD-11 freight aircraft at Magdeburg-Cochstedt Airport; two aircraft were equipped with modified acoustic panels. As the data analysis did not produce an unequivocal result, no recommendations for retrofittings could be made. This example illustrates well that the Lufthansa Group's voluntary commitment to research for less noise is quite costly and complex.

Furthermore, the Lufthansa Group supported the noise effect study NORAH (Noise-Related Annoyance, Cognition and Health), which was concluded in 2015. Among other results, the survey showed that the health risks and negative effects of aircraft noise are apparently less pronounced than was previously assumed.

📄 www.norah-studie.de

The German Aviation Association (BDL) published its first aircraft noise report in 2015. According to analyses carried out by Germany's Environment Agency, 10.2 million people in Germany are affected by road noise while 6.2 million people are affected by rail noise with an average noise level of more than 55 dB(A). In contrast, aircraft noise affects only 738,000 people.

Noise reduction at the airports

On May 30, 2016, the state of Hesse's economics minister Tarek Al-Wazir and representatives of the aviation industry, Frankfurt Airport and Deutsche Flugsicherung (DFS) signed a voluntary agreement concerning the application of "noise breaks" as part of regular operations at

Frankfurt Airport. The noise break concept means that during west-wind operations – the main operating direction at Frankfurt Airport – some runways are not used between 5 and 6 a.m. and between 10 and 11 p.m. Aircraft movements are bundled on the remaining runways during these times. This gives people living nearby and beneath the approach routes of these unused runways an additional hour of quiet. A one-year trial run had shown a substantial reduction of noise burdens during those peripheral hours.

From the end of May to the end of August 2016, Lufthansa, DFS and Fraport are set to test new satellite-supported approach procedures at Frankfurt Airport. The goal of these trials is to prove the advantages of curved approach procedures linked to this new technology in areas close to airports. The test series also contributes to basic research for active noise protection and is part of the research project Single European Sky Air Traffic Management Research (SESAR, see 48).

Further, at Hamburg Airport the Lufthansa Group is committed to a punctuality offensive to reduce the aircraft noise burden on people living near the airport. Together with three other airlines and Hamburg Airport, Lufthansa and Eurowings signed a declaration at the end of April 2016 concerning the reduction of delays after 11 p.m. In this punctuality offensive, the partners pledge to apply the so-called "delay regulation" as rarely as possible.

Commitment to climate research

For more than 20 years, the Lufthansa Group has been intensively involved in research projects which help to observe the state of the Earth's atmosphere by establishing a worldwide measurement infrastructure – in order to better understand global climate changes.

Five years of IAGOS

On July 7, 2011, Lufthansa became the first airline worldwide to join forces with research institute Forschungszentrum Jülich to launch innovative long-term research of the atmosphere in the project IAGOS (In-service Aircraft for a Global Observing System). By means of measuring instruments that are permanently installed aboard aircraft, the project analyzes the air's chemical composition. Through the successful precursor program MOZAIC, Lufthansa had already been a central partner of research institutes for more than 20 years. The last MOZAIC aircraft was withdrawn from service in fall 2014. At the beginning of 2015, Lufthansa equipped a second aircraft with a measuring probe for the IAGOS project to ensure a seamless transition from MOZAIC to IAGOS. Together with the project CARIBIC, which Lufthansa supports monthly via the Airbus A340-600 "Leverkusen", three Lufthansa Group aircraft currently fly in the service of climate research. By recording atmospheric data continuously and globally, IAGOS and CARIBIC close important gaps in the knowledge necessary to better understand climate and its forecasts.

At the end of 2015, the scientific journal Tellus B published a special issue on the results of the IAGOS and MOZAIC programs. The 16 articles published therein represent the entire scope of the scientific atmospheric investigations based on the data recorded with the support of instru-

mentalized commercial aircraft. For instance, researchers used the ozone measurements taken by Lufthansa aircraft to complete those generated by worldwide satellite and ground measurements for this important trace gas and to test the global models for forecasting air quality. In another article, scientists examined how high-altitude thunderstorms affect the generation and distribution of nitrogen oxides at high altitudes. The MOZAIC data stretching over a number of years clearly prove that nitrogen oxides are generated in thunderstorms above the southeast of the USA and then transported across the Atlantic to Europe. All articles are freely accessible on

www.tellusb.net

In 2015, climate researchers accomplished a further discovery in which the Lufthansa-supported projects IAGOS and CARIBIC played a significant part. By combining data from these measurements with those from satellite observations, they were able to prove that between 2008 and 2011 the solar radiation in the lower layers of the stratosphere was weakened twice as much as previously assumed in the wake of multiple volcanic eruptions. This shows that the cooling effect of volcanoes had been significantly underestimated in previous climate models.

www.iagos.org

"In 2015, we expanded our involvement in the IAGOS project and equipped a second aircraft with measuring probes. On each flight that these aircraft make, data of atmospheric trace elements are collected routinely and worldwide, which are highly useful for scientific research."



Dr. Gerd Saueressig
Manager Group Environmental Issues
Deutsche Lufthansa AG

A photograph of an airplane cabin interior, showing rows of seats and a person's hand reaching for a tray table. A light blue overlay box is positioned in the lower-left quadrant, containing a large number '3' and the text 'Product Responsibility' and a paragraph of text.

3

Product Responsibility

Customer centricity and quality focus are strategic cornerstones of the Lufthansa Group. We constantly optimize our products along the entire service chain.



Product responsibility at the Lufthansa Group

For the Lufthansa Group, product responsibility means that all business segments and subsidiaries continuously assess and improve their offers along the entire travel chain. This dimension of entrepreneurial responsibility therefore refers to products and services that are particularly important for customers of the Lufthansa Group, as well as for other stakeholders.

Customer centricity and quality focus

“Customer centricity and quality focus” is one of the strategic cornerstones of the Lufthansa Group (see page 65). The orientation according to customers’ wishes and needs is a very important concern for the Company. It also includes designing products and services that are free from discrimination and environmentally compatible. The Lufthansa Group companies regularly conduct customer surveys on a global scale in their segments, exchange information with their stakeholders in the context of a continuous stakeholder dia-

logue and derive product and service optimizations from this process. The further development of feedback management processes also contributes to increasing passenger satisfaction.

Flight safety and health protection

Flight safety and health protection always have the highest priority for the Lufthansa Group. Therefore, the Group airlines expanded their safety structures immediately following the crash of Germanwings flight 4U9525 on March 24, 2015 and also introduced a new procedure for crew pres-

ence in the cockpit. Accordingly, during flights there now have to be two authorized crew members in the cockpit at any time. Furthermore, for many years the Lufthansa Group has expanded its health-related offers for passengers and has always set standards in the area of cabin air (see page 71).

Data protection and data security

The protection of customer data is the basis for a trusting business relationship. Every day, the Lufthansa Group companies process enormous volumes of data and in so doing always handle personal data with the utmost care. In addition, such data are protected and secured in accordance with the most stringent standards and the very latest technical norms (see page 72).

Offer of voluntary CO₂ compensation

The Lufthansa Group’s commitment in the area of voluntary CO₂ compensation is firmly anchored in the Group-wide Strategic Environmental Program 2020; moreover, it is an integral part of the aviation industry’s four-pillar strategy for climate protection (see page 67). The hub airlines Lufthansa, Swiss and Austrian Airlines and the Lufthansa subsidiary AirPlus all maintain programs for this purpose.



Customer centricity and quality focus

Satisfied customers and perfect service are of the highest importance for the Lufthansa Group. It is under this maxim that the aviation group's employees work on further optimizing passengers' travel experiences and customer service every single day.

"Customer centricity and quality focus" is one of seven fields of action comprised by the Lufthansa Group's strategic program "7to1- Our Way Forward" and one of the central approaches to ensure the company's long-term success and ability to create added value (see page 18, Strategy and management, Sustainable Business Practices). The goal is to produce top performances and thus to achieve quality leadership in all markets and business segments. This is best illustrated by Lufthansa's goal to become the western world's first five-star airline in Skytrax, the industry's leading rating system.

Within the field of action "Customer centricity and quality focus" the Lufthansa Group concentrates above all on the following aspects:

- To understand customer needs even better. In this area, the Group has taken an important step forward with the introduction of the Net Promoter Score (NPS®)¹ in 2014.
- To further sharpen each individual brand's focus and concentrate brand promises.
- To identify further optimization potentials and realize them.

To optimize the quality of product and service portfolios, the Lufthansa Group will invest a total of 500 million euros by 2020. In addition, there are investments to further improve customer service. At the same time, the company has established a Group-wide quality circle.

Measuring customer satisfaction

For the Company's success it is indispensable to determine how satisfied customers are. Therefore, the Lufthansa Group regularly conducts surveys on a global scale to check how customers evaluate the performance they experienced. In addition, the Lufthansa Group surveyed its target audiences at the beginning of 2016 concerning 12 sustainable fields of action to establish a materiality analysis, including the topic of "Service and customer orientation". The stakeholders confirmed the high priority this topic has for them and the Group (see page 21, Stakeholder dialogue).

"Customer centricity and quality focus are a central concern for us. Consistent processes and a well-developed service mentality are the basis for excellent customer service. Simultaneously, we develop new and value-added high-quality services that are oriented by individual customer needs. Our goal is to offer a first-rate travel experience at any time."



Steffen Harbarth
Chief Commercial Officer Hub Munich &
Head of Marketing LH Group Airlines,
responsible for the field of action customer
centricity and quality focus

¹ Net Promoter® and NPS® are registered trademarks; Net Promoter Score and Net Promoter System are trademarks of Bain & Company, Satmetrix Systems and Fred Reichend.

The golden "Q" symbolizes the quality offered by travel with the Lufthansa Group.

The Net Promoter Score focuses on the travel experience as the central product or service category of the Lufthansa Group. In this context, the Group airlines continuously survey their customers to see if they would recommend the airline to their friends and acquaintances based on their travel experience. The share of enthusiastic passengers is deducted from the share of less satisfied ones. Every month, top management receives a report detailing the development of the NPS at the individual airlines and for the Group airlines as a whole. Lufthansa Cargo and LSG Sky Chefs also conduct surveys to determine their NPS values.

Uninterrupted round-the-clock service

Another important contribution to the topic of customer satisfaction comes from feedback management. The Lufthansa Group places a high priority on being reachable at any time, to respond to all customer reactions worldwide as quickly as possible, to resolve issues in the customer's interest and to learn from feedback. The goal is to be "best in class" (see page 63, *Balance* 2015, and page 73, *Balance* 2014). At the same time, the Group works continuously on further developing its service portfolio. Taking its cue from demand, the Lufthansa Group concentrates on services it offers via social media channels.

Lufthansa ensures its uninterrupted round-the-clock service on 365 days a year by means of the "InTouch Service Center" with its seven locations on four continents. Its employees handle about 11 million individual transactions per year, 2.6 million of which in Berlin.



Improvements in 2015

For the Lufthansa Group, product responsibility means above all continuously optimizing the different services along the travel chain and to make flying, including its sustainable facets, come evermore alive (see page 68, Sustainability in all phases of the travel experience). Therefore, the Group introduced additional programs and services in 2015 that further improve the travel experience and thus also customer satisfaction.

During the reporting year, Lufthansa successfully implemented nearly all service optimization programs of its five-star airline activities. This included above all the completion of the largest cabin modernization program in the airline's history (see page 62, *Balance* 2015). There was also improved premium check-in in Frankfurt and Munich, and a more personalized style of service on board from flight attendants, which also includes the Lufthansa Restaurant Service on long-haul flights in Business Class, launched in August 2015. Moreover, LSG Sky Chefs conducted a workshop in 2015 to develop new and even healthier dishes.

In addition, Lufthansa expanded its offers and services for families. This includes child-friendly check-in areas in Frankfurt and Munich, amenity kits for children and the new Family Guide for Frankfurt – a brochure containing useful tips on spending time at the airport. Numerous digital innovations similarly improve the travel experience of passengers in all age groups. Furthermore, there is the internal program SMILE, which helps to react to changing customer needs by means of personalized products, services and communications options.

Service and customer orientation for freight shippers

At the beginning of 2015 Lufthansa Cargo launched the project "Manage Customer Service" aimed at further increasing its employees' quality awareness and service orientation. The emphasis is placed on the after-sales process, that is the activities after a reservation has been confirmed. In this area, the project team identified 22 improvement measures, some of which have already been implemented or are in the pilot phase. For example, customers in the United States and Canada are now able to check the customs status of their shipments; a service that was previously not available.

CO₂ compensation

Passengers of the Lufthansa Group may compensate the CO₂ emissions unavoidably associated with their journeys by making a donation and thus a personal contribution to climate protection. Compensations are made through respected agencies that apply the most stringent standards in selecting and implementing the projects they support.

Offering voluntary CO₂ compensation is an established part of the aviation industry's four-pillar strategy for climate protection (see page 45) and the Lufthansa Group's environmental strategy 2020. While Lufthansa and Swiss have cooperated since 2007 with the charitable Switzerland-based foundation myclimate, Austrian Airlines has worked since 2008 with Climate Austria (see page 69, *Balance* 2015). Since 2011, existing corporate customers of the Lufthansa subsidiary AirPlus have had the opportunity to have the CO₂ emissions of all their business travel calculated and compensated for them as an option.

In 2015, Lufthansa Group customers again took advantage of the option to travel in a climate-neutral way: The quantity of CO₂ emissions that passengers of the hub airlines Lufthansa, Swiss and Austrian Airlines as well as AirPlus customers compensated during the reporting year added up to 31,300 tonnes of carbon dioxide. Thus, donations of more than 450,000 euros were received for climate protection projects – an increase of 3.5 percent over the preceding year. The CO₂ compensation payments made by customers are channeled to certified climate protection projects in whose context climate-damaging

energy sources are replaced with climate-friendly ones. Over the last four years alone, about 1,8 million euros were invested in such climate protection projects in this way. In addition to a reduction of greenhouse gases, these projects must demonstrate a positive contribution to sustainable development.

To make even more customers aware of the option of a voluntary CO₂ compensation, the Lufthansa Group is planning to further optimize its related Internet offer. The Group regularly provides information on the climate protection offer's background and mode of operation. In addition, Lufthansa Group experts participate in panel discussions organized in the context of the stakeholder dialogue. For example, in 2015 they participated in a discussion event organized by myclimate on the subject of climate protection and air transport at the international tourism fair ITB.

lufthansa.myclimate.org
swiss.myclimate.org
www.climateaustria.at
www.airplus.com



On June 4, 2016, Lufthansa participated with two aircraft in the Berlin Air Show (ILA) and provided information about sustainable mobility. The visit of the "Siegerflieger" (Winners' Plane) and the Airbus A320neo was CO₂-neutral: Lufthansa compensated the related CO₂ emissions with a donation to the climate protection organization myclimate.

Sustainability in all phases of the travel experience

Planning



- CO₂

Paperless processes

Thanks to electronic tickets, digital baggage services and mobile boarding passes, sustainable travel begins for Lufthansa Group customers long before boarding. These offers are being expanded continuously.

Travel medicine and accessibility

To ensure that passengers are able to enjoy their trips without worries, the Lufthansa Group supports them with comprehensive information concerning travel medicine. Customers with reduced mobility or additional needs for care benefit from specific services, which ensure optimum comfort on the ground and on board.

Voluntary CO₂ compensation

At Lufthansa, Swiss, Austrian Airlines and the Lufthansa subsidiary AirPlus, leisure and business travellers have the option of voluntarily compensating for the CO₂ emissions inevitably associated with flying. The compensation payments support climate protection projects.

Special meals

Be it for health-related, religious, ethnic or culinary reasons, with the Lufthansa Group, passengers may select special meals from up to 18 options, depending on the airline, flight duration and booking class.

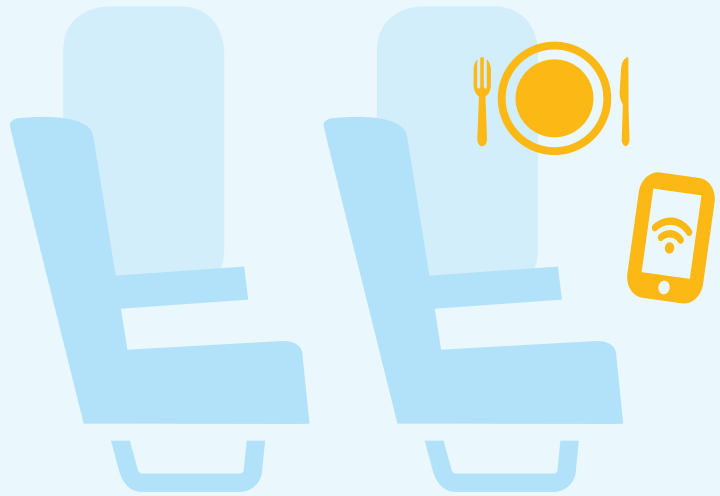
Intermodality

Since 2015 the Lufthansa Group has bundled all road, rail and air feeder services under the Lufthansa Express brand. The options for seamless travel include ICE high-speed rail connections, long-distance and postal busses as well as car-sharing.



Relaxed travel

Ergonomic seats ensure restful travel in all booking classes. Instructions for relaxation exercises on board, the new “flyrobic” video and innovative light concepts to adapt the biorhythm on the A350-900 starting in January 2017 all help passengers to arrive at their destinations in a relaxed frame of mind. In addition, the Lufthansa Group offers a broad medical product portfolio and the “Doctor on board” program.



Flying



Arriving

eJournals / recycling

An important building block in the Lufthansa Group’s sustainability concept is to expand its offer of digital reading materials. Free eJournals for mobile devices now replace part of the print issues. The resulting weight reduction implies a cut in fuel consumption and related CO₂ emissions. Furthermore, flight attendants presort unavoidable waste materials on board and act as ambassadors of the Group-wide recycling initiative “Fly Greener”.

Customer feedback

The Lufthansa Group places the highest priority on customer orientation and quality. Therefore, the aviation group actively and continuously surveys its customers about their travel experiences and develops service optimizations from this input.

Donations for a good cause

Not only on board, but also after arrival, Lufthansa Group passengers have an opportunity to support the on-board collection program “Small Change – It’s a Big Help” run by the Help Alliance. Small sealable envelopes are available on board, while on the ground there are donations columns to accept “leftover” amounts in any currency. Swiss also collects remaining amounts of foreign exchange aboard its flights to benefit charitable purposes.

Regional flight attendants

To meet its passengers’ intercultural preferences and needs optimally, Lufthansa has assigned regional flight attendants from China, Korea, Japan, India and Thailand to selected routes for the last 25 years.

Further programs

- Fleet development (see page 29)
- Study on cabin air quality (see page 71)
- Support for climate research (see page 61)
- Researching and using alternative fuels (see page 46)
- Electromobility for taxiing and towing of aircraft (see page 52)
- Fuel efficiency programs (see page 41)



Flight safety and health protection

For the Lufthansa Group, safety and the health of passengers, crews and employees have top priority. For the purpose of flight safety, all airlines within the Lufthansa Group have Safety Management Systems. Beyond that, the Lufthansa Group continuously expands its health-related offers for passengers and also carries out extensive measurement tests concerning cabin air.

Germanwings flight 4U9525

With the crash of Germanwings flight 4U9525 on March 24, 2015, an emergency occurred for the Company which each employee of the Lufthansa Group hoped would never happen. Germanwings and Lufthansa announced immediately that they would do everything in their power to look after and support the family members and friends of the accident's victims in the best possible way (see page 74).

Shortly after the accident, in cooperation with Germany's Federal Aviation Office (LBA), the other German airlines and the Association of German Civil Aviation (BDL), the airlines of the Lufthansa Group introduced a new procedure for crew presence in the cockpit. Accordingly, two authorized persons now have to be in the cockpit at all times during a flight.

As a further immediate measure, the Lufthansa Group expanded its safety structures. As a complement to the safety pilots of the individual airlines, the new function of Group Safety Pilot with overall responsibility for reviewing and further refining procedures related to flight safety was created. Since March 27, 2015, Captain Werner Maas has been responsible for this new

task in parallel with his current role as Safety Pilot of Deutsche Lufthansa AG; he reports directly to Group CEO Carsten Spohr.

For the purpose of flight safety, all airlines within the Lufthansa Group have Safety Management Systems (SMS), which are oriented by the requirements of the International Civil Aviation Organization (ICAO). The goal of these systems is to document the state of safety in flight operations, to identify hazards at an early stage and assess them, and to lower accident risks by implementing suitable countermeasures (see page 74, *Balance* 2014).

IOSA audit – The most comprehensive standard for safety in air transport

An independent assessment of the safety standards of the airlines within the Lufthansa Group takes place every two years through the IATA Operational Safety Audit (IOSA). IOSA is considered the internationally most respected safety standard in air transport. All Lufthansa Group airlines fulfill this IATA safety standard in its entirety. Lufthansa Cargo was the first IOSA-registered freight airline worldwide. Furthermore, in 2014

Lufthansa became the first airline within the Lufthansa Group to be audited according to the new Enhanced IOSA Standard, which has been binding since September 2015. In 2016, the audit was repeated without objection.

www.iata.org/iosa

Expansion of the medical product portfolio

The Lufthansa Group continuously expands its medical product portfolio for passengers. With the so-called Patient Transport Compartment (PTC), which Lufthansa's Medical Service developed jointly with Lufthansa Technik (see page 65, *Balance* 2015), Lufthansa offers a service that is unique worldwide. This "airborne intensive care unit" has been available since June 2015 on all long-haul flights taking off or landing in Frankfurt or Munich. An additional way for Lufthansa to assume responsibility for its passengers is the "Doctor on Board" program (see page 75, *Balance* 2014).

Study on cabin air quality: 108 measurement flights since April 2013

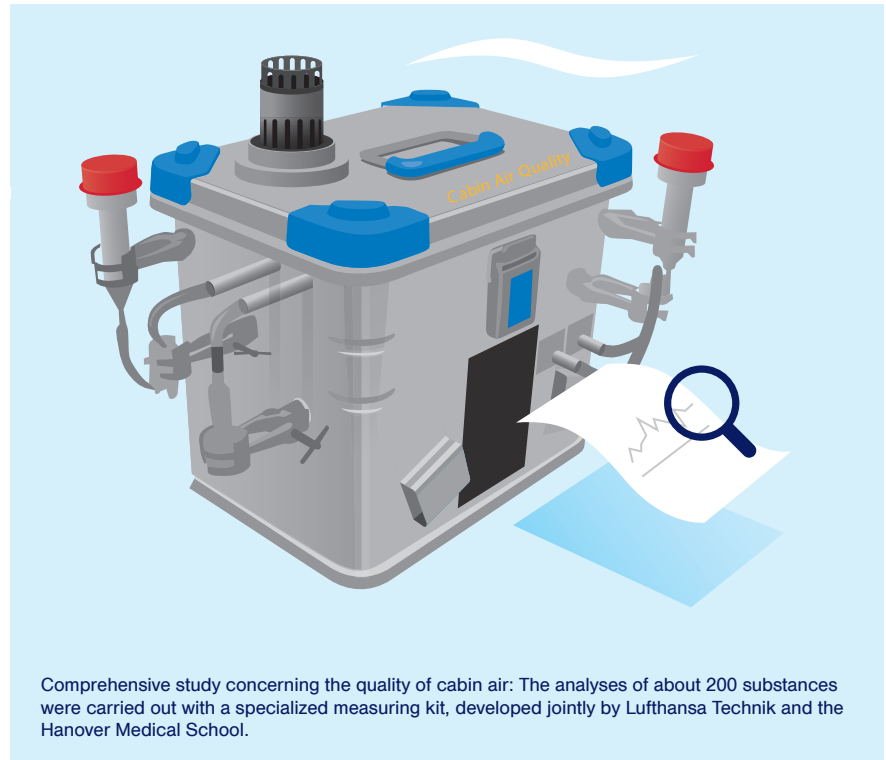
The Lufthansa Group has made an active and conscientious commitment to researching the quality of cabin air and investigating so-called smell events. Whether the latter might be associated with health hazards or occupational safety is being analyzed intensively by the company in close cooperation with national and international authorities, associations, research institutes and manufacturers. Between April 2013 and May 2015 Lufthansa conducted a comprehensive study on the quality of cabin air in cooperation with the Institute for Occupational Medicine at Hanover Medical School (MHH). The analyses were performed with a specially designed measuring kit, jointly developed by Lufthansa Technik and MHH. The intermediary analyses of measurement data prove that the cabin air is of high quality, comparable with indoor air on the ground, such as in offices.

The researchers found neither indications of increased levels of aldehyde nor of neurotoxic ortho-tricresyl phosphates (o-TCP). This also applied to cases of documented smell events on board and to the analysis of engine oil. Furthermore, the concentrations measured always remained below valid German and international maximum values applicable to working environments.

200 substances are tested

The analyses comprised data collected on a total of 108 short-haul and long-haul flights, including 64 measuring flights with 11 Airbus A380 aircraft and 44 flights with 15 Airbus A321 aircraft.

The measuring kit allows the collection of air samples. These are analyzed at a laboratory and tested for about 200 typical indoor and hygiene parameters – including carbon dioxide, carbon monoxide, ozone,



Comprehensive study concerning the quality of cabin air: The analyses of about 200 substances were carried out with a specialized measuring kit, developed jointly by Lufthansa Technik and the Hanover Medical School.

more than 150 volatile organic compounds (VOCs) as well as numerous types of aldehydes and organophosphates. In addition, a so-called screening analysis is used to identify unknown substances in the cabin air.

This scientific study underscores the high priority that the Lufthansa Group gives to the health of passengers and crew members. It is a unique commitment worldwide and by far exceeds customary industry standards.

The Lufthansa Group also participates in the study "Cabin Air Quality" conducted by EASA, the European Aviation Safety Agency, and carried out further measuring flights in this context in 2016.

Laboratory Services and fire laboratory

The Lufthansa Group also maintains the highest quality and safety standards concerning all fluids used in the operation of aircraft systems. Guided by Lufthansa Technik's Laboratory Services division in Frankfurt, fluids are continuously subjected to chemical and physical laboratory analyses. An equally important role is assumed by the five screening laboratories of Lufthansa Technik's Central Materials Technology in Hamburg, which acts as an approved fire protection institution for the aviation industry (see page 66, *Balance* 2015).

Data protection and data security

Careful and secure handling of personal data is the basis for trusting business relationships. Protecting data shields the Lufthansa Group's customers, employees, shareholders, and suppliers from violation of their privacy rights through improper use of sensitive personal data. The Lufthansa Group protects and secures data according to the highest standards.

The Corporate Data Protection department ensures that Germany's Federal Data Protection Act (FDPA) is applied across the Lufthansa Group. It familiarizes employees with the relevant legal provisions and conducts regular data protection audits. In addition, the Group's data protection experts advise the departments when new systems are introduced and procedures are designed or modified. This allows for the coordination of data protection and business concerns at an early stage. The all-important first step is to make employees and managers aware of the risks related to data protection, so that they are able to detect and avoid them. During the reporting year, the emphasis of advice was on using customer data in ways that conform to data protection standards.

Meanwhile, the conflict between German data protection legislation and ever-more frequent demands for passenger information from foreign authorities remains unresolved (see page 67, *Balance* 2015).

Mandatory guidelines ensure data protection

The framework for secure data handling within the Lufthansa Group is defined by its Data Protection Guidelines. Based on laws such as the FDPA and established principles of data protection, they spell out concrete obligations regarding compliance with data protection laws. These guidelines also define rules to ensure Group-wide conduct that is compliant with data protection law, make risks related to data protection transparent, and safeguard against such risks. Furthermore, these rules were integrated into the Group guidelines for the purposes of data protection in countries outside the EU and requirements for handling data relating to orders.

Data protection is the responsibility of the Executive Board and the management of the respective Group company. They are assisted in the discharge of this responsibility by the Corporate Data Protection department, headed by Dr. Barbara Kirchberg-Lennartz. As in 2014, the Lufthansa Group recorded no significant risks or sanctionable violations concerning the protection of personal data in 2015. Moreover, data disclosure requests and customer feedbacks were handled in a timely fashion as a rule.

Systematic training

Training and informational measures concerning data protection are aimed at familiarizing employees and managers with the necessity of data protection, the key terms, the organization of data protection within the Lufthansa Group, and specific issues concerning individual areas.

The Web-based training course "The fundamentals of data protection" is mandatory for many Lufthansa employees. After signing an agreement to compliance with data confidentiality, new hires and job changers must complete this training within a short time. Since September 2014, the ensuing training certificates are valid for only three years, as opposed to the previous five years. In addition, the Group offers short specialized trainings online for certain target groups to intensify their knowledge concerning sensitive issues and particularities in their work areas.

Furthermore, employees can obtain information on this subject at any time on Corporate Data Protection's intranet pages. The department also reports on current data protection topics via a weekly internal blog.

The following legal changes concerning data protection and data security occurred in 2015/2016 and affect the Lufthansa Group:

Safe Harbor Agreement and EU-US Privacy Shield

In its judgment issued on October 6, 2015, the European Court of Justice (ECJ) declared the Safe Harbor Agreement between the EU and the USA to be invalid. The ECJ held that the agreement, which was concluded in 2000 concerning the exchange of personal data, would violate the right to respect the private sphere and that personal data of EU citizens would not be sufficiently protected from access by US authorities. Until now, data transmissions to the USA were only allowed when the US organization held a Safe Harbor Certificate or specific contracts to ensure data protection had been concluded. The verdict also affects the Lufthansa Group: All contracts concerning the storage and processing of personal data with US service organizations on the basis of the Safe Harbor Agreement were renewed.

On February 2, 2016, the draft for a new agreement "EU-US Privacy Shield" for the data transfer between the EU and the USA was presented. The negotiations concerning the further drafting have not yet been concluded.

Law concerning the storage of passenger data

The introduction of a EU-wide regulation for the transmission of Passenger Name Record (PNR) data for flights outside the European Union and optionally for flights within the EU, to so-called Passenger Information Units in the 28 member states, was accepted by the European Parliament on April 14, 2016. These rules will come into effect in two years at the latest. After passage at the EU level, the implementation of the directive in the national law of the member states is required. In numerous EU countries, including Germany, the Passenger Information Units are currently being set up. Some EU countries are already in the process of defining their requirements vis-à-vis the airlines. For the airline industry, the exchange of passenger

data means increased complexity of reservations and check-in processes, and implies additional costs for transmitting passenger data, which the airlines have to pay.

Agreement concerning the new EU General Data Protection Regulation

After negotiations lasting several years, the European Parliament adopted the new EU General Data Protection Regulation on April 14, 2016. It is to replace the existing EU Data Protection Directive, which has been effective since 1995. Following a two-year transition period, the new regulation will take effect on May 24, 2018. In this way, standardized regulations will be created in European data protection. They apply to all companies that offer their output to EU citizens. The implementation of the requirements related to the General Data Protection Regulation means for the Lufthansa Group the adaptation of the existing data protection management system.



Careful and secure handling of personal data is the basis for trusting business relationships.

Germanwings flight 4U9525: Deepest sympathy and support for the families

The year 2015 was marked by the greatest tragedy ever in the long history of the Lufthansa Group: the crash involving Germanwings flight 4U9525 on March 24, 2015. The Lufthansa Group's employees as well as the members of the Executive and Supervisory Boards all share the deepest sympathy for the families of the passengers and crew members. In dealing with this catastrophe, the Lufthansa Group's focus has been on those whose lives have been affected. Easing their suffering and ensuring that such an accident never occurs again are of great concern for the aviation group.

Long-term support for bereaved families

Immediately following the accident, the Lufthansa Group adopted numerous measures to improve flight safety (see page 70) and to support the official investigations. Likewise, the Group bundled all tasks related to dealing with the outcome of the crash and to providing comprehensive care for the victims' family members into a Post Emergency Organization (PEO). For those bereaved families, this has resulted in a long-term offer of psychological care and psychosocial support.

In addition, the Executive Board decided to extend the Lufthansa Group's commitment to the relatives of the passengers and crew members as well as to other target groups beyond the measures taken by the PEO and the scope of legal indemnification.

Compensation

It is of great concern for the Lufthansa Group to ease the accident's material effects on the families of the victims. For this reason, Germanwings is actively working on a swift and fair settlement of all warranted claims for damages. Germanwings initially paid out 50,000 euros per passenger to the next of kin as an advance on indemnification and will meet its responsibilities for compensation to their full extent. The families' claims depend on varying legal systems according to origin or place of residence of the victims and their relatives. In each individual case, Germanwings will provide appropriate and fair compensation.

Aid fund set up

Lufthansa has set up an aid fund endowed with 15 million euros to support projects, initiatives and suggestions from relatives and other affected groups in memory of the victims. In this fund, Germanwings and Lufthansa have combined their voluntary and long-term commitment in the wake of the accident.

A board of trustees decides independently and within the framework of binding criteria on the fair and transparent allocation of funds as well as on the acceptance of aid proposals. Eligible for aid are measures and initiatives in support of social or cultural aims which commemorate at least one accident victim, which show a clear link to the bereaved families, or which otherwise support people or organizations affected by the accident.

Five million euros, or a third of the total amount allocated to the aid fund, has been designated for the special group of orphans or half-orphans as voluntary support for school education, professional training or university studies. These benefits are to be paid in addition to eventual (maintenance) claims. The board of trustees is chaired by Edda Huther, former president of the Bavarian Constitutional Court and the Higher Regional Court in Munich. It further comprises three representatives of the families of victims and three representatives of Germanwings and Lufthansa.



Forever in our memories

Memorial sites and events

In addition to setting up financial support, the Lufthansa Group has inaugurated memorial sites in various locations – near the accident site in Le Vernet, in Barcelona, in Düsseldorf, at Germanwings headquarters in Cologne and in Haltern. On the occasion of the accident's first anniversary on March 24, 2016, the Lufthansa Group invited families on behalf of Germanwings to a shared commemoration ceremony in Le Vernet.

As a gesture of gratitude, Lufthansa and Germanwings also invited the more than 1,200 French and German relief forces and voluntary helpers to a friendly match between the French and German national soccer teams on November 13, 2015 in Paris.

At a commemorative event in Barcelona, the support provided by the many Spanish helpers was acknowledged as well. These included employees of Barcelona airport and handling agents as well as representatives of local and national police forces and emergency services. The Lufthansa Group Executive Board and Germanwings management thanked the Group's employees at an event on September 4, 2015.

Environmental restoration at the accident site

Measures for the environmental restoration of the accident site began on July 27, 2015 and ended on October 21, 2015 with the handing over of the site to the responsible prefecture. The goal was to restore the site in the best possible way to its original condition. To this end, an external environmental impact assessment was carried out and soil samples from the site were analyzed. Subsequently, a diverse range of measures were taken in close cooperation with the local French environmental authorities to eliminate damage as well as kerosene and oil residues. Environmental analyses will be continued over the four years ahead to monitor any eventual changes in conditions at the site.



4

Social Responsibility

Motivated, highly qualified employees are decisive for the Company's business success. As a socially responsible employer, we support our staff with transparent structures and processes as well as an attractive work environment.



HB-JNA

Lufthansa

DWS Deutsche Flugsicherung

PKW-039
70+208

Strategy and management

The Lufthansa Group is currently traversing a period of profound transformation processes, which are based on internal and external factors. As a result, the requirements on personnel management have also increased. To react appropriately to the complex and multilayered framework of conditions and to secure the Company's competitiveness and attractiveness as an employer, the HR experts of the Lufthansa Group count on suitable, precisely fitting and interlocking HR instruments and measures.

To meet its role as an internationally successful service group in the future as well, the Lufthansa Group restructured its alignment during the reporting year and started the introduction of a matrix organization. The latter allows the Group to be steered with even stronger functional emphasis, and the individual business segments to be more closely interlinked. While the aviation group's personnel functions accompany this process as active sparring partners, they also advance the harmonization of the HR programs that have been implemented Group-wide.

Culture and Leadership

The field of action "Culture and Leadership" of the strategic program "7to1 – Our Way Forward", which has been an area of emphasis since the program's implementation in July 2014, serves the HR experts of the Lufthansa Group as a widely visible way marker. The focus on "Culture and Leadership" acknowledges the fact that in an increasingly volatile environment, highly

qualified and committed employees who capture our customers' imagination are indispensable for the long-term business success of the Lufthansa Group.

It is not by chance that the Group promotes a modern feedback-oriented leadership culture, which identifies problems openly and thus prepares the path on which managers and employees can together develop future-oriented solutions (see page 72, *Balance 2015*). The measurable expression of this cultural change is the new ratio "Engagement Index", introduced in 2016, which is essential to enable suitable responses to be given to external and internal variables of influence (see page 90, More transparency and dialogue: First Group-wide standardized employee survey).

To accelerate the necessary transformation process, the Lufthansa Group has combined a bundle of effective measures in the field of action "Culture and Leadership". They are making an increasing impact and will therefore be continued in a consistent manner in the years ahead. For example, this includes the five "Leadership Princi-

ples", which ensure that managers guide their employees Group-wide according to the same principles. To anchor the new guideline even more profoundly in the organization, the Group has supported its managers since the beginning of 2014 with the modern tool "eProfile". Since the end of 2015 it has been used Group-wide in a standardized form and is characterized by a high degree of transparency. It serves managers as the central platform for quantitative and qualitative evaluation of employees' performance. At the same time, "eProfile" also promotes the culture of dialogue within the Lufthansa Group.

The Lufthansa Group knows the value of personnel diversity at the management level. To further strengthen diversity, with support from the project Diversity@LHGroup, which was launched during the reporting year, there will be significantly more mixed management teams in the future. In addition, the Group is working on substantially increasing the attractiveness of management positions for women. A similar direction of evolution is pursued with the new process for posting vacancies,



A view of the office world at the Lufthansa Aviation Center at Frankfurt Airport.

filling positions and managing performance, which was reorganized Group-wide to become standardized and transparent, and now takes diversity criteria into consideration automatically. Greater diversity in supervisory positions is also ensured by the rotation principle introduced in 2015, which limits management nominations to five years (see page 82, Diversity and equal opportunities).

Another important pillar of the Lufthansa Group's HR strategy is the project "Spirit". Its focus is on tailor-made continuing education offers at the Lufthansa School of Business (LHSB), which promote lifelong learning and give employees the tools to meet the challenges of the modern working world successfully. Important impulses are also contributed by the Group talent management philosophy, which was introduced in 2014 and whose nine core messages follow the guiding principle "Every employee has talent!" (see page 91).

Modernization of the working environments

The professional landscape of the future is global, digital and networked. The changes are fundamental and hold both opportunities and risks. To adapt these conditions optimally for employees and fit the HR processes optimally to these developments, the Lufthansa Group is now increasing its focus on the field of action "Modernization of the working environments". This includes, among other steps, the optimization of HR management – for example with measures that increase both effectiveness and efficiency while reducing costs.

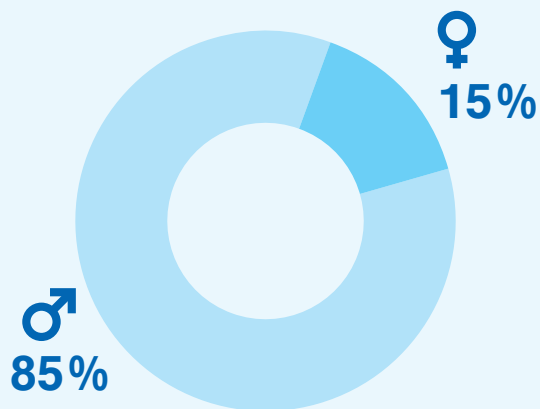
The Lufthansa Group opens up further possibilities by reassessing development paths and proven programs for promoting junior employees, adapting and realigning these if needed. Furthermore, modern work environment models such as "New Work-

space" at the Frankfurt location favor an autonomous and trust-based work culture. These measures make a significant contribution to securing the Group's future viability and ability to create value over the long-term – just as an up-to-date health-care management, and a concept for an equilibrated work-life balance oriented by employees' needs.

The cover story "Changing working environment", which precedes this report, offers an overview of changes in the professional world (see page 6).

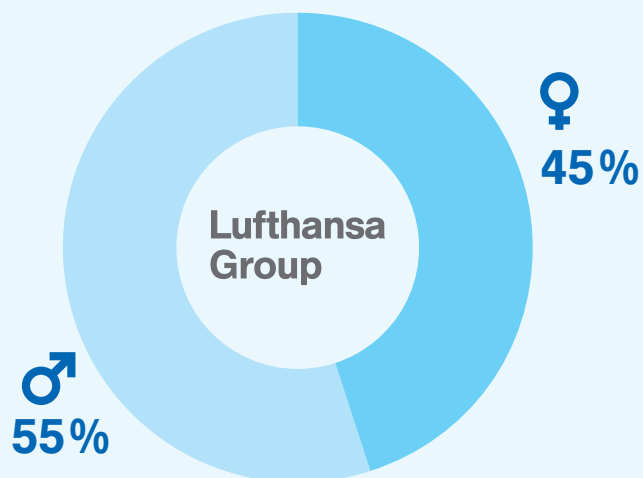
Women in the Lufthansa Group

Executives



Target: 30% increase in the percentage of women in management positions by 2020 (as compared to 2010).

Total workforce



30%

Supervisory Board

German legal quota of 30% female representation achieved.

Diversity Management

The Lufthansa Group signed the **Diversity Charter** in 2014 – an initiative to encourage diversity in companies.

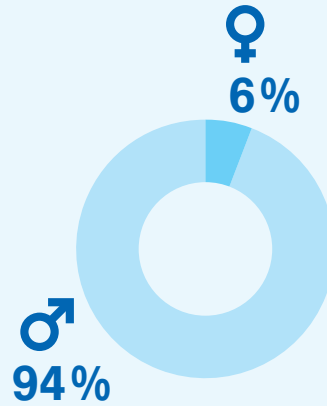
40%

Group Executive Board

Highest proportion of women in the DAX 30 comparison: women make up 40% of the Group Executive Board.

Pilots

More than 500 female pilots flying today for an airline within Lufthansa Group. The number of female captains increased by 83% between 2005 and 2015.

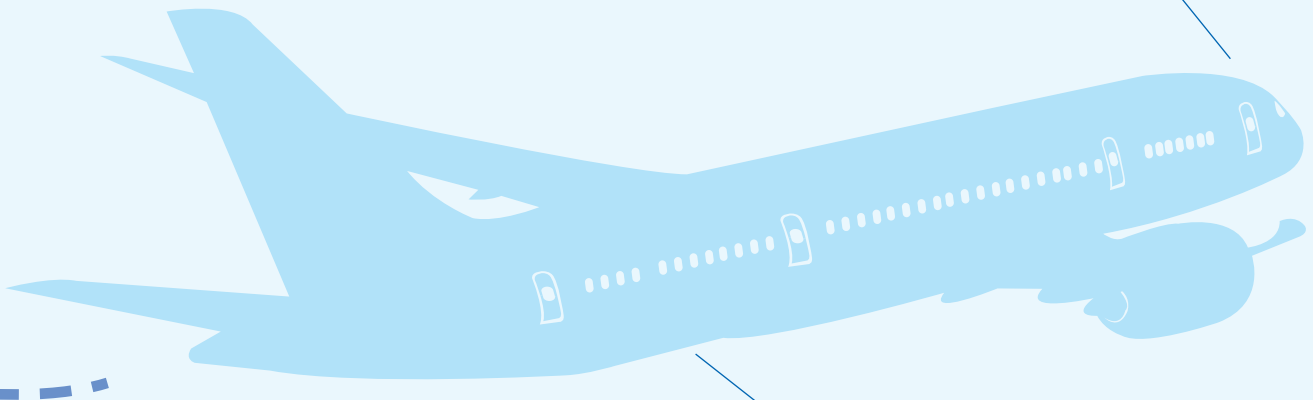


417
First officers



114
Female captains

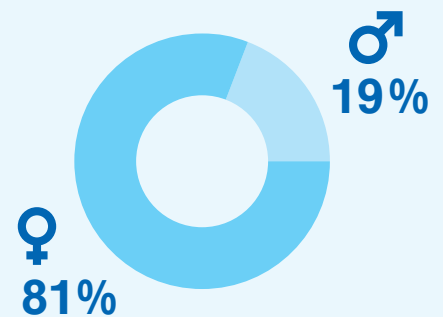
Cockpit



Cabin



21,804
Female flight attendants and pursers /
maîtres de cabine



Which Group airline has the highest number of female pilots?

Eurowings

8%
Female captains



Lufthansa CityLine

13%
First officers

Diversity and equal opportunities

Managing diversity means more than cultivating one's image: Studies prove again and again that a highly diversified personnel is an advantage for companies. Therefore, the Lufthansa Group established systematic diversity management some years ago to make the Group's business goals as compatible as possible with the interests of its employees and the concerns of society as a whole.

“For quite some time, the Lufthansa Group has worked on concepts that take the diversity within the Company even more into account. This includes the new project Diversity@LHGroup, which increases the focus on managers. Particular

emphasis is being placed on increasing the share of women in management positions.”



Juliane Grauer
Manager Equal Opportunity
Deutsche Lufthansa AG

With the goal of continuously boosting its innovative capacity and competitiveness, the Lufthansa Group works to increase diversity in its management. The basis for this approach is the aviation group's diversity-oriented personnel policy. The Company trusts in actively integrating the different dimensions of diversity and showing the same appreciation for all its employees – independent of gender, nationality, origin, religion, world view, disability, age, sexual orientation or identity.

Likewise, the Lufthansa Group's philosophy of talent management takes into account both the wish for diversity among its employees and the aspiration to give its employees and managers the means to create a balance between work and private life (see page 83, *Balance 2015*). To underscore this, the Lufthansa Group signed Germany's "Diversity Charter", a countrywide initiative to promote diversity in companies and institutions, in 2014.

Diversity in management

The Lufthansa Group places great emphasis on integrating a broad range of views and experiences and on taking best advantage of the performance potential represented by its employees and managers.

Welcome diversity!

A multitude of perspectives enhances the competitiveness of the business. And sometimes it is not the familiar way that leads to the best results.



One important concern is to strengthen the Company further by means of mixed management teams and increased staff diversity at the management level, especially by making managerial positions more attractive for women.

New project Diversity@LHGroup

For this purpose the Group launched the strategic project Diversity@LHGroup in 2015. Against the backdrop of current social developments and megatrends, its task is to develop Group-wide solutions in the target areas of gender balance in management, internationality and age structures. A broad scope of measures and programs have either been adopted or already implemented during the reporting year.

Following the principle that managing can be divided, the Lufthansa Group offers programs for managers, such as "Managing Part-time" and "Shared Leadership".

In the interest of increased job rotation, the Group limits management positions to five years and permits sabbaticals to better accommodate the life situations of modern managers. Furthermore, the project Diversity@LHGroup reassesses established career models and the working conditions in management with a view to increasing the share of women in management positions. The Group has seen noticeable success in this area since it introduced the long-established transparent job posting process for non-managerial staff for management positions as well and began applying diversity criteria when filling such vacancies.

The Lufthansa Group supports and accompanies younger female managers in their professional advancement with a cross-company mentoring program. The internal program "Go ahead" also addresses women aiming at a management-level position (see page 77, *Balance* 2015).

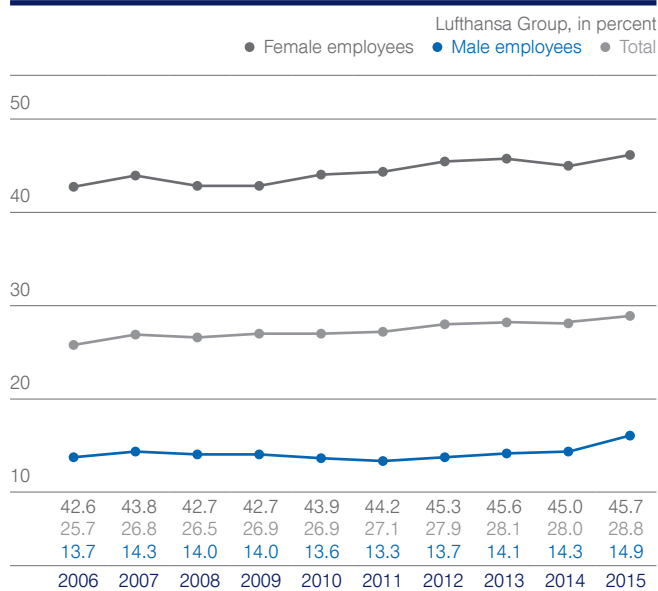
Women in management positions

That the Lufthansa Group is on the right path with its strategy is illustrated by its coming in second in the "Women-on-Board Index 100 II" 2015 (WoB), which the nonpartisan initiative Women on Boards publishes on behalf of Germany's Federal Ministry for Family Affairs. The WoB 100 II is calculated by the percentage share of women in supervisory board and management board positions in relationship to the total number of members on these two boards.

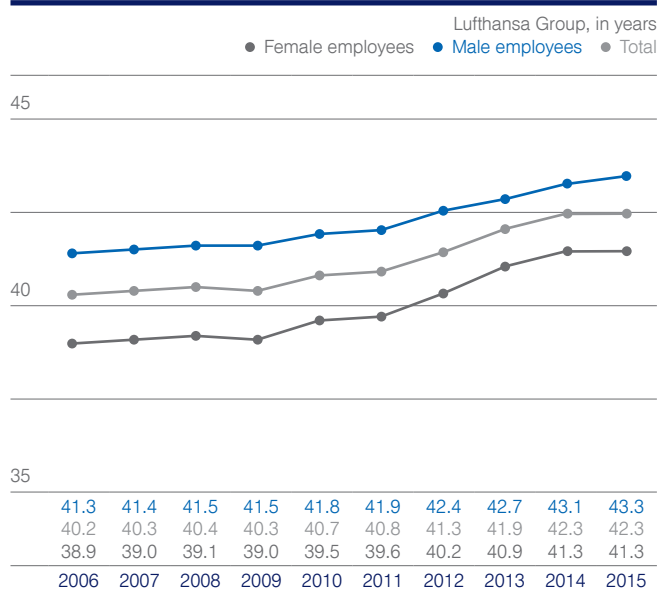
At the Lufthansa Group, two of five members of the Executive Board are already female, which corresponds to a share of 40 percent. The Group also met the women's quota of 30 percent passed by Germany's parliament in 2015 for supervisory board positions of companies listed on the stock exchange and applying codetermination, even before it came into effect on January 1, 2016.

On May 1, 2015, the "Gesetz für die gleichberechtigte Teilhabe von Frauen und Männern an Führungspositionen in der Privatwirtschaft und im öffentlichen Dienst" ("Law

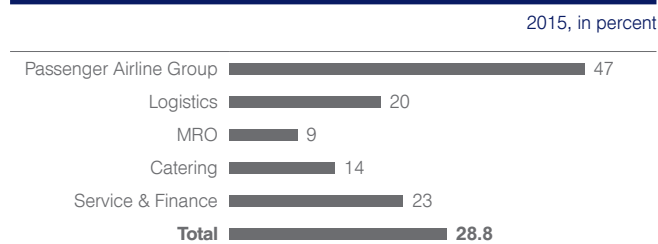
Part-time employment



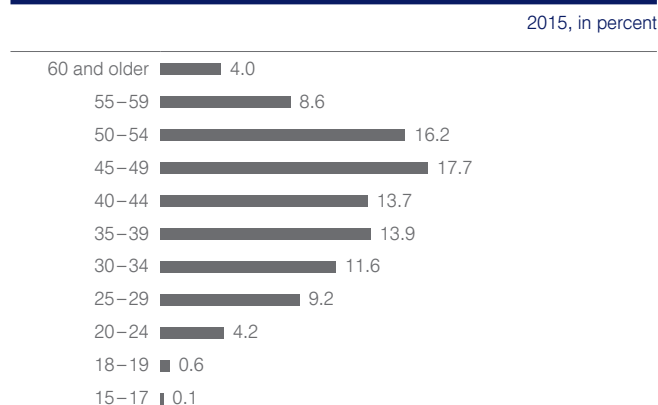
Average age



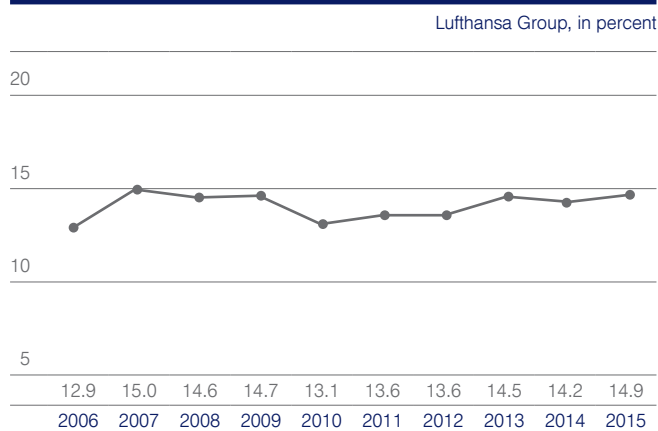
Part-time work by Group companies



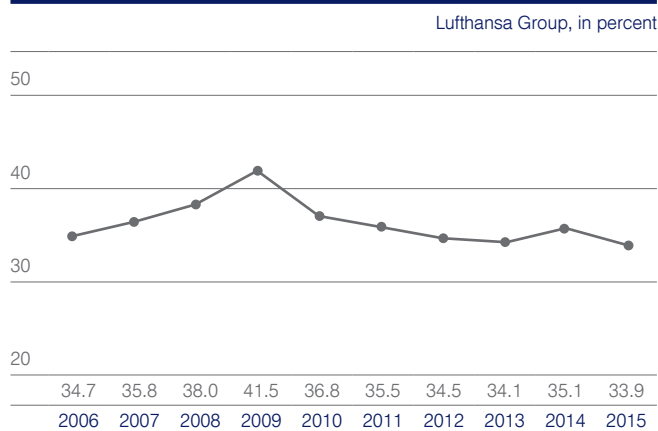
Age structure at the Lufthansa Group



Share of women in management positions



Share of women with staff responsibility





To persuade more women to choose a career in the cockpit, five highly publicized Lufthansa Group long-haul flights took off for New York with all female crews on March 8, 2016 to mark International Women's Day.

for the equal participation of men and women in management positions in the private sector and in government service”) took effect. Against this background, the companies of the Lufthansa Group decided to jointly increase the share of women on the first management level from 9.6 percent (on June 30, 2015) to at least 10.5 percent by December 31, 2016 – while taking into account the respective frameworks of conditions. On the second management level the share of women is to rise from 15.9 percent to at least 17.9 percent. In this way, the aviation group is set to reach the goals resulting from the DAX30 companies’ self-imposed commitment ahead of schedule. Among other measures, the share of women in management positions is to increase by at least 30 percent by 2020 (base year: 2010).

Same pay for same performance

At the Lufthansa Group, equal opportunity also includes remuneration. Collective labor agreements in areas with binding collective pay agreements have ensured since the 1970s that men and women receive the same salary for the same work. An exception is the area outside of collective agreements; here salaries are negotiated individually by strictly applying the criteria of experience, task relevancy and the measure of responsibility for employees (see page 78, *Balance* 2015). Thanks to a new labor agreement, Lufthansa employees paid outside of collective agreements have had the option since 2016 to turn their “performance-oriented variable remuneration” into time off.

Women in the cockpit

While men continue to form the majority of pilots at the Lufthansa Group, female captains have long since become a familiar sight. Currently, the Company employs more than 530 female pilots and has thus increased its share of women in this area to around 6 percent. At the regional subsidiary Lufthansa CityLine, the share of female first officers is even 13 percent. To persuade more women to choose a career in the cockpit, five highly publicized Lufthansa Group long-haul flights took off for New York with all female crews on March 8, 2016 to mark International Women's Day.



In 2015, the Lufthansa Group expanded the “Luftkuppe” program. This full-day internal summer vacation childcare offer for employee children gives varied insights into the Group’s world.

Work and family in harmony

To the extent that society has changed, the classic concept of family has also lost in terms of dominance. The Lufthansa Group accommodates this development by means of a family-friendly corporate culture, which facilitates the compatibility of work and private life and thus increases the Group’s attractiveness in competing for more than just young professionals.

One adjusting lever is the implementation of innovative work concepts, such as “New Workspace”: The latter offers employees at the Lufthansa Aviation Center (LAC) in Frankfurt more flexibility and drives “Mobile

Office” and “Home Office” solutions (see page 6, Changing working environment).

In addition, employees benefit from “breathing” work time options, which take into account changing needs in different phases of life. A better work-life balance is also supported by comprehensive offers for child care and vacation care, which the aviation group offers through pme Familienservice. Furthermore, Lufthansa employees who need a child-care solution at short notice or for a short period of time have had two additional parent-child offices available in Frankfurt since 2015.

And to ensure that parents do not have to be without reliable child care during school

vacations, the Company extended its established internal summer school vacation care program “Luftkuppe” to its Munich location for the first time during the reporting year.

Given current demographic changes, the importance of family care is growing. The Lufthansa Group meets this challenge with comprehensive information on the intranet for affected employees, the placement of nursing staff through pme Familienservice and access for Lufthansa employees to the Internet pages of Deutscher Pflegering (German Care Association). In addition, the Company signed the “Charter for compatibility between work and care in Hesse” during the reporting year.

Fathers discuss their role with other fathers

To support men in their newly-defined father role, the Lufthansa Group cooperates with Väter gGmbH ("Fathers Inc.") at its locations in Frankfurt and Hamburg. At the initiative of the Group's Manager for Equal Opportunity, interested fathers met in Frankfurt for the first time on June 15, 2015 to exchange ideas with the focus on part-time work and flexibility in everyday management and working situations.



During the reporting year, the Lufthansa Group opened two further parent-child offices at its Frankfurt location, which employees may use when they face childcare bottlenecks.

Awaken girls' passion for technology

Dissolving the notion that certain professions are gender-specific: That is the goal of Girls' Day and Boys' Day, in which numerous Lufthansa Group companies again participated in 2015. In October 2015, Lufthansa Technik and Lufthansa Technical Training also offered a group of 10th-grade girls at a Hamburg school the opportunity to build their own glider under professional supervision as part of the "mint:pink" project.



Lufthansa Technik would like to inspire even more women to choose a technical career.

Employment policy based on partnership

The Lufthansa Group's success depends greatly on the ideas, enthusiasm and commitment of its employees. Therefore, the aviation company attaches the greatest importance to providing its employees with an attractive work environment and appropriate salaries. Likewise, it is an established tradition always to balance the economic interests of the Company with the expectations and needs of its employees.

It is tried-and-tested Company policy to settle clashes of interests between Company management and the bodies representing employees in a transparent manner. A fair approach to coexistence in all areas creates the balance needed to advance the Lufthansa Group's position in the market. The growing plurality of opinions and opinion leaderships, much like developments in society as a whole, is increasingly a challenge for all parties concerned. The guiding principles for joint efforts are flexibility and responsiveness.

Partnership in collective agreements

The Lufthansa Group employs its staff under conditions that guarantee them social and material security not only during but also after their working years. These are established on the basis of collective agreements that 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 within the Company fairly and justly – a desideratum that the multiplicity of unions within the Company presents with an array of increasingly challenging conditions. You can find the latest information on the ongoing collective bargaining negotiations at www.lufthansagroup.com/media

Active pay and social policy abroad

Internationalization and globalization offer a broad range of opportunities for the Group's business and personnel processes. As a company with international operations, Lufthansa's pay and social policies are guided by conditions in the various countries. The focus is on the long-term definition of the conditions of employment, which depend on the needs of the employees, operational requirements, and the local labor market – with the inclusion of compensation rules, working conditions, and pension schemes. Lufthansa defines these agreements in cooperation with internal labor committees and employees.

The Company is a party to collective wage bargaining with employees in about 25 countries. In all countries where Lufthansa acts unilaterally, the Company uses benchmarks and macroeconomic data such as inflation figures to review salaries usually once a year on the basis of market and competitiveness criteria. In countries with very high rates of inflation, this assessment is performed more often, given the circumstances, and usually leads to pay increases. In this way the Lufthansa Group offers continual review and adjustment of working conditions for its locally employed staff. As a signatory to the UN Global Compact, Lufthansa has documented its support for freedom of association and the right to collective bargaining for all of its employees worldwide (see page 27). Employees in any country where Lufthansa companies are active are free to lawfully organize themselves and become involved in defining their working conditions.

New approach to Company pension scheme

There has been an attractive Company pension scheme for Lufthansa employees since 1994. The aviation group attaches great importance to rewarding the performance of its employees in this additional way. In order to respond to the developments of the capital markets as well as the consequences of demographic change, the Company terminated the bargaining agreement with employees regarding the Company pension plan in September 2013. The goal is to agree with the collective bargaining partners on modern, market-oriented retirement benefits that sustainably secure the Company's competitiveness. All pension entitlements previously earned under the Company pension scheme are secured and remain unchanged in any case. The Company's management has proposed a new Company pension scheme by which Lufthansa would pay amounts into an individual capital account for each employee (defined contribution system) and invest these funds on the capital market. Under this new system, the amount of the pension payments would be based on actual investment performance rather than on guaranteed pension levels (defined benefit system). In this system, the amount of pension paid out would depend on the return on capital achieved, among other factors. In addition, all employees would have the option of increasing the level of their Company pension by adding private funds.

Collective pay agreement with ver.di in Germany concluded

At the end of November 2015, the Lufthansa Group and Vereinigte Dienstleistungsgewerkschaft (ver.di) agreed to an increase of remuneration and a fundamentally reformed bargaining agreement concerning the Company retirement scheme in the context of an overall package for the roughly 30,000 ground employees in Germany at the companies Lufthansa, Lufthansa Cargo, Lufthansa Technik and LSG Sky Chefs. The bargaining agreement provides for leaving the defined benefit system over the long-term.

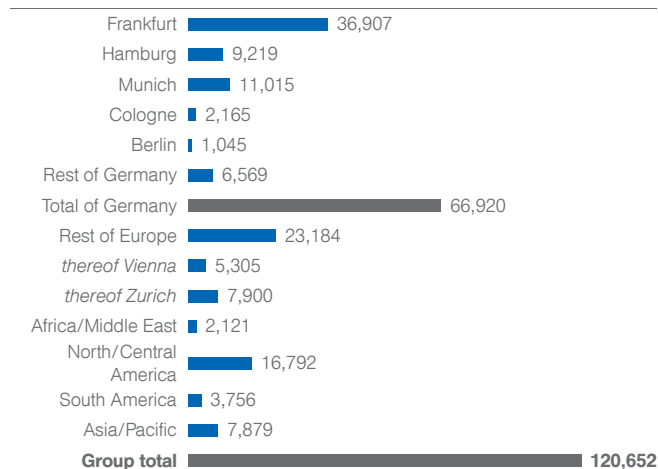
Lufthansa Group: Distribution of employees

Employees as of December 31, 2015

	2015	2014	change
Group employees	120,652	118,781	+1.6%
of which Passenger Airline Group	55,255	54,960	+0.5%
of which Logistics	4,607	4,663	-1.2%
of which MRO	20,661	20,079	+2.9%
of which Catering	34,310	32,843	+4.5%
of which Others	5,819	6,236	-6.7%

Lufthansa Group: Jobs throughout the world

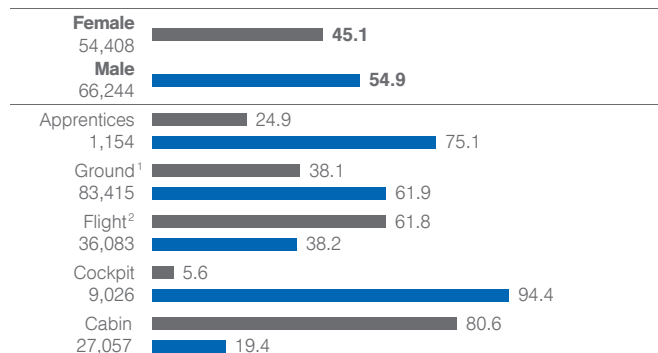
Employees as of December 31, 2015



Lufthansa Group: Number of employees by professional group and gender

Employees as of December 31, 2015, in percent

● Female employees ● Male employees



¹ Without apprentices

² Consists of cockpit and cabin



More transparency and dialogue: First Group-wide standardized employee survey

For many years, employee surveys have been an important instrument for the Lufthansa Group to capture the mood among employees, identify action areas and introduce necessary changes early on. Under the name “involve me!” the first Group-wide standardized employee survey took place in 2015 (see page 82, *Balance* 2015). The new procedure is an important step on the path towards a transparent, Group-wide dialogue and allows a direct comparison of results as well as coordinated measures across business segments. From a total of 72,000 employees in 17 companies, 52 percent seized the opportunity to participate in the survey and communicate their personal impressions anonymously.

At the core of the survey were ten topic areas reflecting the Group’s strategic agenda “7to1 – Our Way Forward” – including strategy and corporate management, the Company as employer, customer orientation, information and communication, working conditions as well as innovation and change. One important insight from “involve me!” was that employees place an emphasis on further developing and improving the error and feedback culture.

New ratio “Engagement Index”

The Executive Board took the opportunity of the publication of the survey results to announce the introduction of the new ratio “Engagement Index” in the course of 2016. It consists of three components and reflects the fact that the success of the Lufthansa Group with its international activities depends to a very significant degree on committed and motivated staff. The “Engagement Index” will be calculated regularly in the future and communicated to top management. Furthermore, a pilot project is planned in which employees can rate measures that may strengthen the “Engagement Index”. In this way, management has the opportunity to adapt measures independently of an “involve me!” survey.

With regard to the new “Engagement Index” the Lufthansa Group achieved an average of 2.3, which was marginally worse than the external comparison value of 2.2. The latter is based on responses to a company-neutral version of the “involve me!” questionnaire by 4,000 external employees in Germany and abroad. A similar picture was generated for the topic “connection with the company”: Here, the Lufthansa Group achieved an average of 2.4 (comparison value: 2.2). The most important results of the employee survey have been published on the intranet. In the future, “involve me!” will take place every two years and will be complemented by annual short surveys.

Program for professional reorientation

In 2013, the Lufthansa Group set up the COMPASS program. It addresses employees and managers whose jobs are threatened, who seek new professional challenges within or outside the Group or who would like to become self-employed. COMPASS thus makes an important contribution to shaping staff adaptation processes in socially compatible ways.

Since the program’s launch, more than 1,500 employees and over 150 managers have already used its confidential career counseling services. COMPASS consists of various service modules, including comprehensive counseling concerning professional reorientations, active accompaniment by counselors throughout the application process as well as a Company-related job exchange. Since the beginning of 2015, the job exchange has offered even more up-to-date job listings from more than 50 partner companies (see page 82, *Balance* 2015).

Talent management

Qualified and committed employees are fundamental for the Company's success and its ability to innovate. Talent management is an important field of action within the Lufthansa Group's HR function and a substantial part of its value-based entrepreneurial policy.

Changes within society and the Company demand a rethinking and reimagining of many processes and instruments within the HR function. In this context, the topic of talent management plays a significant role. To enable the implementation of a comprehensive talent management approach, the Lufthansa Group developed an inclusive talent management philosophy in 2014 (see page 83, *Balance 2015*). It comprises nine key messages and creates a uniform understanding of talent management across the entire Group under the guiding principle "Every employee has talent!" In this context, it is an important task of talent management to accompany and advance these changes by providing new and innovative concepts. For example, an important foundation was laid by introducing a transparent process for filling vacancies at the

upper management level. Initial successes have already emerged: successful candidates are increasingly coming from other Group companies or unrelated job families. Thus, the process of filling vacancies makes an important contribution to promoting the exchange of employees within the Lufthansa Group.

A significant element of HR strategy and thus also of talent management are the Leadership Principles, which were introduced in 2014 (see page 73, *Balance 2015*). These five guiding principles anchor the understanding of leadership that is applied as a guideline for all employees. For example, this leadership guideline is focused through the aspect of "fostering talent" on the role of managers as first developers of personnel and talent(s).

With the introduction of the performance management system "Profile", it became possible for the first time to link an employee's target agreement and talent assessment in one standardized Group-wide approach. This process is now being rolled out step by step for all Lufthansa Group employees in administrative functions. At the same time, the introduction of a standardized IT system supporting performance and talent management offers the opportunity to identify and develop talents across all Lufthansa companies – entirely in the spirit of the talent management philosophy "share and benefit".

A further area of emphasis in the Lufthansa Group's talent management is the introduction of Strategic Personnel Planning (SPP), which was launched in 2014. It already provides important information for securing the medium- and long-term personnel resources needed for implementing the Group's and business segments' strategies. SPP's task is to make the development of existing staff and future staff requirements transparent. Differentiated by job families, risk concerning capacities, age structures and qualifications can be identified and specified early on. This data serves as a basis on which to develop HR and talent management measures that support the strategic steering of personnel resources. In this way, SPP has a central bridge function between corporate and personnel strategy, and provides an important decision-making foundation for deriving concrete HR programs and measures.



Every employee has talent!

All employees are encouraged to enrich their working environment by using their different talents. The scope of Talent Management at Lufthansa includes all employees.

Health management and occupational safety

The Lufthansa Group's comprehensive employee health and safety protection aims at promoting and maintaining its employees' individual performance and motivation. In 2015, the aviation group's Medical Service restructured the Group health management and advanced the interlinking between health management and job safety managers.

The demands placed on a comprehensive health management system are diverse and vary between subsidiaries of the Lufthansa Group. The focus is on tailor-made offers and programs that strengthen prevention and maintain the employees' long-term health. This applies not only to administrative jobs, but also to those in production areas and flight operations.

A supervisory position in the Lufthansa Group's job safety and health protection concept is assumed by the department Group Health Management/Medical Services as an instrument of social care for employees. Its occupational, aviation and travel physicians are the first point of contact for all of the employees' health concerns. This function, whose quality management was successfully recertified in April 2015 according to DIN EN ISO 9001, has been headed since September 1, 2014 by Dr. Lothar Zell.

Comprehensive competency center

Upon the completion of its strategic realignment in 2015, the Medical Service has positioned itself as a comprehensive competency center for the Group's health management. In this role, it complements the activities specific to individual business segments with initiatives that extend to the entire Lufthansa Group. In addition, it promotes networking and exchanges between health and job safety managers at the individual Group companies.

In the reporting year, the Group's Health Management placed its emphasis on the follow-up and psychosocial care for people affected by Germanwings flight 4U9525. These programs will be continued intensively over the years ahead.

Furthermore, in 2015 the health management experts were concerned with the topic of cabin air quality (see page 71, Flight safety and health protection) and pollutant levels in the air, among other issues. In December 2015, the highest level of smog alarm applied in Peking, for instance. The Lufthansa Group took this as a cue to implement effective measures to optimally

protect the health of its crews during layovers as well as that of its employees.

During the reporting year, the employees of the Lufthansa Group's subsidiaries again benefited from numerous offers in the context of corporate health management. These were available at different Company locations and addressed topics such as healthy skin, flu protection, wellness and relaxation as well as back-saving working techniques. All initiatives are designed to strengthen the employees' own initiative.

Health index

As a result of the employee survey "involve me!" (see page 90, More transparency and dialogue: First Group-wide standardized employee survey) the Lufthansa Group established a health index for the first time. It aims at measuring health and comprehensive well-being across the Group and identifying fields of action for optimization measures. The health index is based on questions that are addressed to all employees as well as those that take into consideration the work requirements at individual subsidiaries.

Psychosocial counseling

In 2015, the Lufthansa Group restructured its social counseling services in Germany as a holistic competence center for psychosocial health under the new umbrella organization of "Psychosocial Counseling".

Available as a voluntary benefit from the aviation group, the experts of Psychosocial Counseling support employees and managers facing problems at the place of work, in crisis and conflict situations as well as in difficult private, financial or family circumstances. This broad scope of services is offered at many locations in Germany. In 2015, the department organized 168 workshops, trainings and information events. In March 2015, the department received the Soul@Work Award in the category "Corporate groups" for its health-oriented and psychosocial accompaniment of change processes and the burdens they entail.

In addition, Stiftung Gesundheitsförderung Schweiz (Foundation for Health Promotion Switzerland) awarded the label Friendly Work Space® to the corporate health management of Swiss (see cover page, Corporate Responsibility: Prizes, awards and indices).

Occupational safety

Pursuing safe, health-oriented working conditions is firmly anchored in the Group's guidelines. Successful occupational safety in the sense of sustainable, responsible business practices is understood by the Lufthansa Group as a continuous process of improvement, aimed at promoting health and reducing risks and hazards. To fulfill this philosophy of life within the Company, specific guidelines for job safety have been defined.



Dr. Lothar Zell, Head of Group Health Management/Medical Services, and Volker Schierle, Head of Group Occupational Safety, provided information concerning the protective measures for crews and local employees that the Lufthansa Group implemented in response to the highest level of smog alert in December 2015 in Peking.

Preventive measures to avoid accidents, adverse effects on health and occupational illnesses are consistently implemented within the Lufthansa Group. As a rule, the effects of new or improved products, production processes or hazardous materials are assessed in advance. This also applies to new services, planned work sites and operational equipment. The maxim is to always use new technologies and materials to improve employees' health and protection.

Risk assessments are regularly carried out to check all activities and work situations within the Company. Existing risks are evaluated and measures to minimize them are determined. Regular safety walkabouts and the exchange of information involving all parties concerned ensure the effectiveness of protective measures.

Technical facilities and the equipment in buildings and workplaces are kept up-to-date, and job safety experts and occupational physicians are consulted in the context of changes and new work sequences.

Emergency management plans have been drawn up in the companies of the Lufthansa Group and regular exercises help to identify weak areas. Emergency representatives and employees trained in first aid are present in all work areas.

The employees' individual responsibility is strengthened by recommendations for ergonomically sensible ways of working and a health-oriented lifestyle. Programs to promote health are offered in work environments that are particularly burdensome.

A photograph of a Lufthansa airplane on a tarmac. The tail of the plane is visible, featuring the Lufthansa crane logo. The fuselage has colorful footprints painted on it. In the foreground, a group of children in red school uniforms are reaching out to touch the landing gear of the plane. A person in a high-visibility vest is partially visible on the left side of the frame. The sky is overcast.

5

Corporate Citizenship

The Lufthansa Group represents responsible mobility, networking and worldwide connections. The emphasis of our corporate citizenship is on social and humanitarian projects.



Lufthansa Group Social Care

As a global player, the Lufthansa Group has been emphatically committed to social concerns for many years. All its corporate citizenship activities aim at giving help to less privileged people and to make a difference in society in a direct way. In 2015, the aviation group further focused its activities and bundled them under the umbrella of “Lufthansa Group Social Care”.

Focal point: Social and humanitarian commitment

The social and humanitarian activities are the focal point of the Lufthansa Group’s commitment in the area of corporate citizenship and are to be further expanded in the future. This is evidenced by numerous long-term aid projects and initiatives that are due to the personal dedication of employees and enjoy the support of Group management. During the reporting year, aid projects giving support to refugees made up the largest part of corporate citizenship activities.

The Lufthansa Group’s social commitment is complemented by selected activities in

the areas of culture, sports and environment. These are also to generate a benefit for social concerns, by means of charitable concerts, for example (see page 105).

Beyond that, an established part of the aviation group’s corporate citizenship concept is swift and professional emergency aid in the event of humanitarian crises and catastrophes. The graphic illustration “Swift aid from the air” in this report (see page 97) explains clearly the numerous processes that are set in motion and optimally coordinated to prepare and operate aid flights. Since February 2013, Lufthansa Cargo has been a partner in a professional

network of renowned aid organizations. This cooperation gives aid organizations direct access to Lufthansa Cargo’s logistics competence for foreign deployments.

Employee commitment

It is important for the Lufthansa Group to create a framework of conditions that enables an even more focused promotion of social commitment on the part of employees and managers. The systematic expansion of corporate volunteering takes into account that today’s talents seek not just a job, but rather a professional setting in which they can combine personal involvement and future-oriented action. The Group supports this approach and has expanded the Group-wide trainee program “ProTeam” with a four-week internship at a social business abroad. The “Haiti Entrepreneurship Camp 2015” also gave Lufthansa Group employees an opportunity during the reporting year to combine entrepreneurial initiatives and social commitment. Established in 2014, it aims at motivating young people to set up their own business and thus refute the commonly held view in Haiti that success is a question of background.



The “Haiti Entrepreneurship Camp 2015” gave Lufthansa Group employees an opportunity to combine an entrepreneurial initiative with social commitment.

Humanitarian emergency aid

For many years, the Lufthansa Group has placed its logistical resources in the service of emergency humanitarian aid. The goal is to transport relief supplies in an uncomplicated and efficient manner whenever they are needed to provide emergency assistance to people in disaster areas – be it in the wake of earthquakes, flooding, typhoons, droughts or epidemics.

Taking its cue from the expanding need, the Lufthansa Group has continuously increased its humanitarian commitment over the past years. Since February 2013, Lufthansa Cargo has strongly assisted the emergency aid alliance “Aktion Deutschland Hilft” and its strategic partner “World Vision Deutschland”. The stated goal of this partnership is to provide the 24 renowned German aid organizations joined together

by this emergency alliance with direct access to Lufthansa Cargo’s logistical infrastructure.

#CSRhumanitär

In the frame of its cooperation with “Aktion Deutschland Hilft” the Lufthansa Group is also committed to supporting #CSRhumanitär. Launched by Germany’s Federal Foreign Office, this initiative sees itself as part

of the global dialogue related to the UN’s World Humanitarian Summit. #CSRhumanitär is set up as a forum to allow regular, professional exchanges between companies and aid organizations. A key focus is on the questions regarding the potentials and boundaries of cooperative partnership. A further concern is to jointly develop innovative concepts for need-oriented and principled humanitarian action.



Swift aid from the air for refugees: In 2015, the German Red Cross and Lufthansa Cargo flew more than 15,000 camp beds from North America to Germany.

Swift aid from the air

When people somewhere around the world are plunged into an emergency situation following a natural disaster, immediate aid by means of air freight is called for. This is when the cooperation between Lufthansa Cargo and the emergency aid alliance Aktion Deutschland Hilft (ADH) steps in. The graphic below shows exactly how this works.



1

Preplanning

Lufthansa Cargo and ADH evaluate if aid flights are possible. ADH assesses the needs for aid materials in the disaster area: definition of destination, time, type and quantity of aid supplies needed, volume, weight. Lufthansa Cargo determines if a scheduled or a charter flight will be operated.

2

Preparation of flight and handling

Lufthansa Cargo's network control in Frankfurt plans the aid flight with regard to crew availability, crew safety, clarification of landing and overflight rights, routing, fueling stops, handling. Depending on local conditions, additional technicians and loadmasters are made available (including travel arrangements). ADH carries out detailed coordination of packing lists.

3

“Go!” for all players

Lufthansa Cargo has coordinated all agreements with delivering and collecting aid organizations and publishes the flight number. ADH begins the transport of aid supplies.

4

Freight delivery and loading

ADH ensures delivery of aid supplies to the Lufthansa Cargo Center in Frankfurt, following agreed logistical standards: presorting and checking of packages, security check, loading on pallets in conformity with air cargo requirements. The next step is loading the aircraft. The MD-11F is then ready for takeoff.





5

Flight routing

Depending on the distance to the disaster area, this may include a refueling stop and a crew change.

6

Landing in the disaster area

ADH takes delivery of the aid supplies and organizes their distribution by land.

7

Resumption of scheduled services

The MD-11F's mission is completed. The aircraft leaves the disaster area and resumes its regular flight operations.

At a glance

The Lufthansa Group's humanitarian emergency aid

- Refugee aid (2015)
- Earthquake, Nepal (2015)
- Ebola crisis, western Africa (2014)
- Typhoon, Philippines (2013)
- Earthquake and tsunami, Japan (2011)
- Famine, Eastern Africa (2011)
- Earthquake, Haiti (2010)
- Earthquake, Pakistan (2005)
- Tsunami, southeast Asia (2004)

MD-11F freight capacities

- 90 tonnes of aid supplies max.
- lower deck: freight hold 5:
 - 14.4 m³ loose cargo
 - rear hold: 4 positions 244 x 318 cm max. or 14 LD3 containers
 - front hold: 6 positions 244 x 318 cm max.
- main deck: 26 positions 244 x 318 cm max.

Aid supplies

- food parcels
- equipment for treating drinking water
- medicines, medical equipment
- hygiene articles, clothes
- tents, sleeping bags
- tools
- mobile kindergartens

Social Commitment

The Lufthansa Group takes advantage of its logistic, financial and organizational means to provide aid where it is needed the most – long-term, sustainably and with hands-on participation from employees.

help alliance

Help Alliance

The aviation group bundles its social commitment in the Help Alliance, an aid organization founded by employees in 1999. The registered charity works above all for poor, ill and socially disadvantaged children and youths in Africa, Asia, Central and South America as well as eastern Europe. At the center of the Help Alliance's humanitarian work, which is guided by the worldwide standards of the United Nations Convention on the Rights of the Child, are the issues of education, health care and nutrition.

Every year, the Help Alliance looks after about 40 projects in the area of development cooperation and administers annual

donations of significantly more than 1 million euros. Efficient structures and the assumption of personal responsibility by employees across the Lufthansa Group ensure that the administrative costs remain at a consistently low level.

Emphasis in 2015: Refugee aid

In the reporting year, the Lufthansa Group and the Help Alliance placed their emphasis on aid to refugees. The aid organization closely coordinates its activities with the companies of the Lufthansa Group and applies a three-level concept. It includes projects in development aid, concrete emergency relief and long-term integration projects at the Group's important locations in Germany.

Hamburg: Preparatory classes for young refugees

Starting on October 1, 2015, the Help Alliance joined forces with the Hamburg-based association basis & woge to launch a long-term learning sponsorship project. The goal is to give young refugees with an uncertain residence permit status better access to the job market and to promote their social integration. For this purpose 15 young men and women in their senior year at the Staatliche Gewerbeschule für Bautechnik (State Vocational School for Construction Technology) in Hamburg currently attend a preparatory class. Each of these students is paired with a volunteer mentor from Lufthansa Technik, who accompanies his or her mentee intensively every step of the way. The Lufthansa Group assumed the sponsorship for this project in the context of the German industry's integration initiative "Wir zusammen" ("We together"), founded in February 2016.

Düsseldorf: Educational opportunities for students in socially troubled areas

New to the Help Alliance's project portfolio since 2015 has been its cooperation with Chancenwerk e. V. in Düsseldorf. This association has developed a unique concept for the promotion of education in which three partner schools, all located in the city's socially troubled areas, participate. At the project's heart are "learning cascades", which means that university students teach older secondary school students in a subject of their choice. The latter agree, in turn, to support younger schoolmates in a similar fashion. The

"For the Help Alliance and the Lufthansa Group, it is a matter of course to provide initial aid to refugees and to open up professional perspectives for young migrants by supporting long-term measures."



Vivian Spohr
Patroness
Help Alliance e. V.



In 2015, the Help Alliance and the association basis & woge in Hamburg jointly launched a learning sponsorship project that helps young migrants gain better access to the job market.

target audience of this study coaching project are boys and girls from families that are educationally disadvantaged or have a migration background.

Rhine-Main region: Language support for migrant children

The Help Alliance also provides aid to migrants via the Flörsheim-based association Stern des Südens e. V., with which the employee has cooperated since 2007. Since 2015, Stern des Südens has offered targeted language courses for refugee children based on playful approaches to learning and also offers assistance in the area of accommodation for refugees. Launched as a pilot project, it has developed into a regular education program.

A donation of 100,000 euros to the Social Services Department in Munich

To relieve the city of Munich in registering and accommodating newly arrived refugees, the Help Alliance supported the city's Social Services Department with a donation of 100,000 euros in November 2015 toward urgently needed interpretation services. In this way, the Lufthansa Group assumed half of the costs incurred.

In addition, more than 50 Lufthansa employees answered a call from the Help Alliance

to offer their services as volunteer interpreters and translators at various locations in Germany.

Refugee aid provided by Group companies

The airlines and service companies of the Lufthansa Group provided concrete immediate aid to refugees in many ways during

the reporting year. For example, Lufthansa Cargo cooperated with the German Red Cross in September 2015 to transport 15,000 camp beds from North America to Frankfurt. Aboard the 13 flights, which the logistics specialist operated on an at-cost basis, was cargo with a total volume of nearly 120 tonnes. The camp beds came

“I’ve always regarded education as a central element when it comes to ensuring that people are able to take an active part in society. So I was pleased to respond to the Help Alliance’s call for study mentors to help young refugees in Hamburg.

The work I do is very enjoyable and I’ll definitely support my mentee with advice once he has graduated.”



Lisa Wiebusch
Group Purchasing Manager
Lufthansa Technik AG

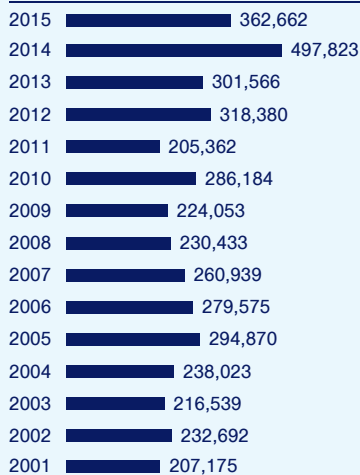


Small Change – It's a Big Help

With the aim of building bridges into a better future for people in need, the Help Alliance launched the on-board collection program Small Change – It's a Big Help in 2001. It offers Lufthansa Group passengers the opportunity to donate coins and bills in any currency they might be carrying on homeward-bound long-haul flights (see page 97, Balance 2015).

On-Board Collection Program

Development of donation volumes in euros



October 2002: start of Condor's participation
 September 2011: start of Brussels Airlines' participation
 July 2012: start of Austrian Airlines' participation

from stock held by the Canadian and U.S. Red Cross organizations. LSG Sky Chefs and its subsidiary Spiriant provided several thousand blankets, sleeping masks and hygiene articles as donations in kind for refugees in Munich and the Rhine-Main region. Austrian Airlines joined the Help Alliance in supporting refugee accommodation at Vienna Airport with sleeping bags and insulation mats.

Further Help Alliance activities in 2015/16 (selection):

- Second Haiti Entrepreneurship Camp in Port-au-Prince with the goal of promoting entrepreneurial initiatives as a contribution to sustainable economic and social development. The project is supported by 14 volunteer managers from across the Lufthansa Group
- Inauguration of a "drop-in center" for homeless children and endangered youths in Pattaya, Thailand, in cooperation with long-term Help Alliance partner Human Help Network Foundation Thailand (HHNFT)

- Cooperation with the charitable organization Homes of Hope in the context of the first Lufthansa flight to Panama City
- Fundraising activities
 - "Flight Mode App": digital time out for a worthy cause
 - www.LH.com/flightmode
 - Cooperation with the donation platforms www.betterplace.org and www.ammado.com
 - Fundraising campaigns on Facebook, YouTube, the Help Alliance blog and the on-board collection program
 - October 2015: part of the proceeds from Lufthansa's in-flight shopping are donated to the Help Alliance
 - Campaign "Give a bottle – give hope" at Munich Airport: Highly visible placement of an oversized bottle collection machine for beverage bottles and forwarding of bottle deposits to support the construction of a well in Mali

www.helpalliance.org

"When I learned last year about the Help Alliance's commitment to refugees, I signed up immediately to work as a volunteer in this area. To this day I enjoy being part of language tutoring in Flörsheim.

In their warm-hearted manner the children give me much in return and more than gratefully accept the help they need."



Michael Kopf
 Copilot A320
 Deutsche Lufthansa AG



To carry Cargo Human Care's positive message around the world, the multicolored footprints of children living at Mothers' Mercy Home have adorned the fuselage of the Lufthansa Cargo MD-11 freighter registered "Charlie Hotel" since November 2015. First destination following the makeover: Nairobi, to mark the occasion of opening the new John Kaheni Residence.



Cargo Human Care

Like the Help Alliance, the association Cargo Human Care (CHC) owes its existence to the personal involvement of committed employees. This humanitarian aid project was founded in 2007 by Lufthansa Cargo staff in cooperation with German physicians of various specialties. The registered charity provides access to free medical care to sick and suffering people in Kenya, as well as a home and a future to impoverished orphans.

Treatments are administered at Cargo Human Care's medical center in Nairobi. Its patient roster includes needy people from the surrounding area and the children living at the CHC-supported orphanage Mothers' Mercy Home. The number of medical treatments given by volunteer doctors increased to about 21,500 in 2015, benefiting about 6,000 patients. Coopera-

tion with local clinics, where German physicians perform more specialized treatments, and full, partial or educational sponsorships round off CHC's spectrum of sustained assistance. From the start, Lufthansa Cargo has backed Cargo Human Care with logistical, financial and organizational support.

New residential educational center inaugurated

November 25, 2015 saw the inauguration of the John Kaheni Residence, a new residential educational facility for youths in the Nairobi area. A major project of Cargo Human Care, the center's educational offer will provide up to 100 young people with access to high-quality professional training in future. Patron of the John Kaheni Residence is German Federal Foreign Minister Dr. Frank-Walter Steinmeier.

www.cargohumancare.de

Social projects supported by Group companies

- Lufthansa Cargo: Long-standing cooperation with the registered association "Werkstätten für Behinderte Rhein-Main e. V." (Workshops for the Disabled)
- LSG Sky Chefs: Varying by region, commitment covers educational projects, health promotion, sports events and more
- Swiss: Long-standing cooperation with the foundation SOS Children's Village and support for the Children's Foundation run by Swiss employees
- Austrian Airlines: Support for social and charitable organizations
- Brussels Airlines: Bundling of social commitment in the initiative "b.foundation for Africa", the airline's conduit for supporting numerous long-term aid projects in Africa. Annual mountain bike event "Bike for Africa" to support selected humanitarian projects.

Additional commitment

Beyond humanitarian emergency aid and the consistent social “help for self-help”, the Lufthansa Group has been committed for decades to the areas of environment, culture and sports.

Environmental sponsorship

The protection of its heraldic bird, the crane, has been a concern close to the heart of the Lufthansa Group for over 30 years and is an established part of its corporate citizenship commitment. The aviation group was a cofounder of the Crane Protection Germany working group, which will celebrate its 25th anniversary in 2016. Since 1991 it has made significant contributions to securing the breeding, resting and gathering areas of the “birds of luck”.

Its foundation goes back to a joint initiative involving Lufthansa, Naturschutzbund Deutschland (NABU) and the environmental foundation WWF Deutschland. Through Crane Protection Germany, the Lufthansa Group supports crane protection projects at home and abroad to prevent the destruction of crane habitats.

With its “Cranorama”, the charitable organization has offered a new, barrier-free observation platform since October 2015.

New observation platform “Cranorama”

The Crane Information Center, operated by Crane Protection Germany in Groß Mohrdorf, plays an important role. It allows visitors a nature-friendly way of observing the estimated 125,000 cranes that rest every year in late summer and early fall in the regions around the Darß-Zingst peninsula and near Rügen to prepare for the continuation of their journey south. Employees of the Lufthansa Group regularly work at the center as volunteer rangers in the area of environmental education.

On October 15, 2015, the Crane Information Center inaugurated the new, barrier-free and weather-protected observation platform “Cranorama” at Günzer See. The educational program is part of the combined project “Schatz an der Küste” (“Coastal Treasures”) and receives subsidies via Germany’s Federal Agency for Nature Conservation from Germany’s Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety.

📄 www.kraniche.de

📄 www.facebook.com/kranichschutz

Information about species-appropriate animal transports: 📄 www.lufthansa-cargo.com as well as *Balance* 2015, page 101)



Facts and figures

- Over the past 25 years, about 625,000 bird watchers have visited the Crane Information Center and the neighboring Günzer See.
- Since 1996, the maximum number of cranes resting each fall in the Darß-Zingst and Rügen regions has increased from 35,000 to 73,000.
- The number of crane pairs in Germany has increased from 1,960 (1993) to 8,500 (2015).
- Number of cranes ringed in Germany and abroad since 1996: 1,500
- International cooperations and projects with public administrations and non-governmental organizations
- Intensive cooperation with numerous crane protection organizations in Europe (European Crane Working Group) and Asia (Eurasian Crane Working Group)



Piano concert at a high level: Every month about 200 employees enjoy virtuoso concerts after work, which the Company offers for their relaxation.



Under the well-known "Fanhansa" motto, Lufthansa will again provide an aircraft bearing a specially designed livery during the UEFA European Football Championship 2016 in France.

Cultural commitment

The emphasis in the area of cultural commitment has been placed on supporting outstanding musical institutions and events, whose cultural resonance makes an important social contribution.

First Global Partner of Gürzenich Orchestra

In its first long-term commitment to a symphony orchestra, the Lufthansa Group has supported the Gürzenich Orchestra in Cologne since 2010 as First Global Partner. This renowned ensemble ranks among Germany's leading orchestras and enjoys an excellent reputation abroad as well. The orchestra and the Lufthansa Group joined forces for a charity concert given at Cologne's Philharmonie on October 18, 2015. Donations from this event were equally divided between the Help Alliance and the association "Wir helfen".

Support for the Lufthansa Orchestra

Since its foundation in 2011, the Group has supported the Lufthansa Orchestra, which currently counts more than 65 employees from different Group companies and diverse professional backgrounds who join their talents as active volunteer musicians. Its concerts are a fixture in the Company's cultural activities and delight Lufthansa employees and fans of classical music in Germany and abroad. In 2015, the Lufthansa Orchestra gave a performance to mark the inauguration of Lufthansa Technik's new maintenance hangar in Puerto Rico.

Charity concert organized by Lufthansa Technik

In 2015, Lufthansa Technik again set up a charity concert in the context of the Schleswig Holstein Music Festival (SHMF). The venue was once again Hangar 7 at Lufthansa Technik's base in Hamburg. Donations of 20,000 euros benefited the SHMF's pedagogical work as well as the Stiftung "phönix", which supports families of cancer patients with psychotherapeutic counseling offers and group options.

Sports sponsorship

Top performances require successful synergy among different players – both in business and in sports. For this reason, the Lufthansa Group has been a reliable partner for sports associations, institutions and clubs for many years.

German Sports Aid Foundation

Lufthansa has been a National Sponsor of the German Sports Aid Foundation since 2007. Through this cooperation the Company supports more than 3,800 athletes with and without disability, from young talents to top performers. In addition, the Lufthansa Group supports the initiatives "Your name for Germany" and "Springboard Future – Sports and Career" (see page 103, *Balance* 2015).

Olympic and paralympic organizations

As the official carrier of the German Olympic Sports Confederation and National Paralympic Committee Germany, Lufthansa traditionally flies the German national teams to the venues of Olympic and Paralympic Games. For many years, Austrian Airlines has supported the Austrian Olympic Committee as a National Partner and the Austrian Paralympic Committee as a Sponsor, as it will in 2016 in Rio de Janeiro. Since October 2015, Swiss has been the official airline and partner of the Swiss Olympic and Swiss Paralympic teams, and will operate special flights during the 2016 Olympic Games in Brazil. This partnership is set initially to run to the end of 2016. In addition, Swiss is the official airline of the Swiss Handball Association and Swiss Ice Hockey.

Football

As a partner of the German Football Association (DFB), Lufthansa has flown all German national soccer teams to their away games as well as to European and world championships since 2005. Lufthansa also supports Germany's women's football through DFB and the German Sports Aid Foundation. Furthermore, the "Airline of Sports" is also an official partner of the Eintracht Frankfurt team and Official Carrier of FC Bayern München, with whom it cooperated in 2016 to develop a "Flyrobic" video for its passengers.

www.lufthansagroup.com/sports



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Overview of the
Lufthansa Group's fleet



Glossary

A

➤ Aerosols

Aerosols are solid and/or liquid particles that are suspended in the air. They reach the atmosphere by means of natural processes (wind, desert storms, volcanic eruptions) or human activities (combustion of biomass and fossil fuels). The most important aerosols are mineral dust, sea salt, cellular (biological) particles, soot, organic compounds, and sulfates. From a climatic perspective, aerosols are the opponents of greenhouse gases, as they can reflect incident light and thus have a cooling effect.

➤ aireg e. V. – Aviation Initiative for Renewable Energy in Germany

aireg is a registered association of leading German research institutions, Lufthansa and other companies in the aviation industry, and bioenergy producers. The goal of this initiative, which was founded in 2011, is to advance the development and introduction of regenerative aviation fuels in Germany and to inform the public at large about this topic.

🌐 www.aireg.de

➤ ATM – Air Traffic Management

Air traffic management ensures both the safe and the efficient movement of aircraft in all phases of operations.

➤ Atmosphere

Mass of air surrounding the Earth. It is divided into various layers, which are separated from one another by significantly different vertical temperature distributions. Important for air traffic are the two lower layers: the troposphere and, above it, the stratosphere. 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 eight to 12 kilometers above sea

level at the poles. The temperature in the tropopause, the transition layer between troposphere and stratosphere, drops to about minus 60 degrees Celsius. It rises again in the stratosphere.

C

➤ Carbon dioxide (CO₂)

Gas resulting in nature from the burning or decomposition of organic substances (e.g. plant material). The greenhouse gas CO₂ remains in the atmosphere for about 100 years. Scientists attribute the increase in 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 2.42 percent of the CO₂ emissions due to human activities are caused by global air traffic. (Source: International Energy Agency (IEA) 2014, 2012 values)

➤ 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.

➤ CDP (previously Carbon Disclosure Project)

The CDP is an independent, charitable organization with a current membership of more than 820 institutional investors worldwide. The goal of this initiative, which was founded in 2000, is to motivate the world's largest listed corporations to make data on their greenhouse gas emissions and their

climate protection strategies transparent.

For this purpose, the CDP and its partners jointly developed two indices: the Carbon Disclosure Leadership Index, which includes companies that make their emissions transparent to a particular extent, and the Carbon Performance Leadership Index, which takes concrete climate protection achievements into account.

➤ Chapter 4 aircraft

Aircraft that comply with 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 since 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 in their entirety all measures that ensure the lawful conduct of companies, their management bodies, and their employees with regard to legal directives and interdictions.

➤ Corporate Responsibility (CR)

Corporate responsibility expresses the degree to which a company assumes accountability for the effects its business activities have on employees, customers, society, and the environment.

D

➤ Decibel

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 sound 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.

➤ 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 – Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)

The DLR serves scientific, economic, and social purposes. It maintains 33 institutes, testing facilities and research centers. Its declared 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

➤ DNWE – Deutsches Netzwerk Wirtschaftsethik (German Network for Business Ethics)

DNWE is a nonprofit organization of which Lufthansa has been a member since January 1998. DNWE has more than 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

E

➤ ECPI

The Lufthansa Group's place in the ECPI® Index family was confirmed in 2015. This index comprises the 150 highest-capitalized companies within the European economic and monetary union, which represent suitable and sustainable investments according to the ECPI's screening method. The ECPI analyzes data in the environmental, social and governance (ESG) areas of companies as well as the development, calculation and publication of ECPI indices. It monitors 4,000 issuers by means of a disciplined and certified method that covers a range of ESG criteria.

➤ EMAS – Environmental Management and Audit Scheme

European regulations concerning environmental management and certification; colloquially referred to as EU eco-audit regulations.

➤ 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 private 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 has been 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

F

➤ 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

The index was introduced in 2001 by FTSE, a wholly owned subsidiary of the London Stock Exchange. It lists only those companies that meet the internationally accepted standards for corporate responsibility in the following dimensions: environmental management, climate change, human and labor rights along the supply chain, corporate governance, and anti-corruption efforts. Lufthansa has been listed since 2001.

🔗 www.ftse.com

➤ Fuel Dump

Dumping of fuel in flight due to emergency situations to reduce a long-haul aircraft's weight to the maximum permissible landing weight before unscheduled landings (e.g. in the event of technical problems or serious passenger illness). Special air space is assigned to the aircraft, if possible above uninhabited or thinly populated areas. Fuel is usually dumped at altitudes of 4 to 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 detected so far in plant or soil samples after fuel dumps.

G**➤ Generation Y and Generation Z**

The term Generation Y applies to those born roughly between 1980 and 1995. It comes from sociology and refers to this generation's characteristic to question things. "Y" is derived from "why" in this context. Another term to describe this generation is "digital natives". The term Generation Z applies to the population group of those born after 1995; they are the second generation of digital natives.

➤ Global Compact

see "UN Global Compact"

➤ Great-circle distance

The 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 gases are carbon dioxide from the combustion of fossil fuels and methane, primarily from agriculture and industrial livestock farming. Other artificial greenhouse gases are nitrous oxide (N₂O), fluorocarbons (FCs and HFCs), sulfur hexafluoride (SF₆), and chlorofluorocarbons (CFCs).

H**➤ Hub**

In air transport, a hub is a central traffic point or an airline's transfer airport. Passengers and freight are transported from their point of departure to one of the airline's "home airports" (hub). From there, they are carried to their destination by a second flight alongside passengers and freight from other departure points, but with the same destination.

I**➤ 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 – 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.iccgermany.de

➤ 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.

➤ ISO 14001 – International environmental management system

Companies thereby 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

K

➤ 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.

L

➤ LHSB – Lufthansa School of Business

The LHSB supports processes of change within the Group and promotes a shared management culture. It has received multiple awards for the worldwide standards it establishes for the development and training of professionals and managers.

➤ Low-cost segment

Airlines offering predominantly low fares, but featuring reduced or separately charged services on the ground and in the air. Flights are most often operated to/from airports outside of major population centers.

M

➤ Mentoring

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

➤ MRO

Acronym standing for maintenance, repair, and overhaul of aircraft

➤ MSCI Global Sustainability Index Series

The US index provider MSCI launched a series of sustainability indices in September 2010. The MSCI index family comprises seven environmental, two value-based and 15 best-of-class indices. These include shares of companies with high and medium market capitalization and are based on the MSCI World Index. They depict companies that are particularly committed to environmental, social and governance (ESG) issues. Lufthansa has been included in this index series since June 2015.

🔗 www.msci.com/esg-indexes

➤ MTOW

Acronym standing for maximum takeoff weight of an aircraft

N

➤ 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. Air traffic contributes 2 to 3 percent of 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”

O

➤ oekom

The oekom Corporate Rating evaluates the social and environmental compatibility of companies according to a selection of 100 industry-specific indicators on average. Companies that rank in the top of their respective industries in the context of an oekom Corporate Rating and fulfill the industry-specific minimum criteria are awarded the oekom Prime Status by oekom research.

🔗 www.oekom-research.com

➤ 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

Molecule formed in the stratosphere and consisting of three oxygen atoms. 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 to 4 percent on the heavily-flown North Atlantic routes.

P

➤ Passenger kilometer (PKO/PKT)

Measure for transport performance in passenger carriage (number of passengers multiplied by distance flown). A distinction is made between available transport performance (PKO, passenger kilometers offered, or, synonymously, SKO, seat kilometers offered) and actual transport performance (PKT, passenger kilometers transported).

➤ Pro Recycling Paper Initiative

Founded in 2000, the initiative unites companies from various industries and aims at improving the acceptance of recycling paper and promoting its increased use. Lufthansa is one of the initiative's founding members.

🌐 www.papiernetz.de

R

➤ RSB – Roundtable on Sustainable Biomaterials

International initiative to develop a global standardization and certification system for agofuels.

🌐 <http://rsb.org>

S

➤ SAFUG – Sustainable Aviation Fuel Users Group

Initiative of airlines, aircraft manufacturers, and providers of refinery technology whose goal is to accelerate the development and commercialization of sustainable fuels for the air transport industry.

🌐 www.safug.org

➤ Seat kilometer

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

➤ Seat load factor (SLF)

Passenger-related measure of aircraft capacity utilization: the ratio of transport performance (PKT, passenger kilometers transported) to capacity (PKO, passenger kilometers offered).

➤ SES – Single European Sky

Describes the efforts of the European Commission since the late 1990s to restructure European airspace for the purpose of optimizing traffic flows. Its goal is to dissolve the airspace's fragmented structure by creating a limited number of Functional Airspace Blocks (FABs).

➤ 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.

T

➤ Tonne kilometer (TKT/TKO)

Measure of transport performance (payload multiplied by distance). A distinction is made 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.

➤ Town Meeting

Information event for employees at different locations of a company.

➤ Transparency International

Anti-corruption organization, of which Lufthansa has been a member since 1999.

🌐 www.transparency.de

U

➤ UHC – Unburned hydrocarbons

Organic mixture of carbon and hydrogen that results from the incomplete combustion of fuels containing hydrocarbons or from the evaporation of fuel.

➤ UN 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. Deutsche Lufthansa AG has been a member since 2002.

🌐 www.unglobalcompact.org

V

➤ VOC – Volatile Organic Compounds

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.

W

➤ Water vapor

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 kilogram of kerosene burned, 1.24 kilograms 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.

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Notes on the scope of consolidation and methodology for calculating absolute and specific consumption and emissions

Scope of consolidation

Reporting on transport performance, kerosene consumption, and emissions from flight operations in 2015 is – unless noted otherwise – based on the following scope of consolidation:

- Lufthansa (including Lufthansa CityLine, Air Dolomiti, Eurowings), Germanwings, Swiss (including Edelweiss Air), Austrian Airlines and Lufthansa Cargo. Not included are services performed by third parties, as their performance and the aircraft they use are beyond our control.
- Types of flight service: all scheduled and charter flights.

Methodology of calculations

Kerosene in absolute terms

Kerosene consumption is calculated on the basis of actual flight operations (i.e. using actual load factors and flight routings) according to the gate-to-gate principle. This covers all phases of a flight, from taxiing on the ground to flying detours and holding patterns in the air.

Emissions in absolute terms

The emissions from flight operations are calculated on the basis of actual transport performance and hence on actual load factors and the actual absolute quantity of kerosene consumed in the reporting year. Transport performance is measured in tonne kilometers; i.e., payload transported over a distance. For passengers and their luggage, an average of 100 kilograms is the standard estimate; for freight, it is its

scale weight. Each aircraft/engine combination present in the fleet is considered separately, and the associated values are calculated with the aid of computer programs provided by the aircraft and engine manufacturers. The annual average flight profile for each subset of 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 (UHC) in particular. Carbon dioxide (CO₂) emissions do not require special calculation methods, as they are generated in a fixed ratio 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 relation to transport performance. For example, the ratio liters per 100 passenger kilometers (l/100 pkm) is calculated on the basis of actual load factors along with the quantity of kerosene actually consumed. The distances used in the calculations are great-circle distances. In combination flights (freight and passenger transport in one aircraft), fuel consumption is attributed on the basis of its share of the total payload to calculate the passenger- and freight-specific figures.

Since 2013 the DIN EN 16258 standard has provided a guide for standardized calculation of greenhouse gas emissions for transport processes. This guide uses the same estimates for calculating payload as the Lufthansa Group. When traveled distances are calculated, 95 kilometers must be added to the great-circle distance

according to the guidelines of the EU emission allowance trading scheme. The International Air Transport Association (IATA) has separately developed its own calculation proposals, which deal with the division of fuel consumption between freight and passengers and attribute a larger share of fuel consumption to passengers because of the passenger-specific infrastructure. Although this method has no effect on the overall efficiency of a flight, it changes the apportionment between passengers and freight. There are still divergences between the two methods (including from the method used up to now by Lufthansa). We would welcome a standardized, internationally harmonized and accepted method.

Environmental management system

The Lufthansa Group collected the environmental data used in this report with the aid of its environmental management system. This system also defines how data are verified and transmitted to the Group Environmental Issues division. The basis for data collection is Lufthansa's own environmental database.

Accuracy

For presentation purposes the figures in the charts and tables are rounded. Changes from the previous year's figures and share percentages refer in each case to precise figures, however. For this reason it is possible that a reported value may remain the same from one year to the next even though a relative change is reported. Because of the rounding of share percentages, it is also possible that the sum of their addition may differ from the sum of the unrounded percentages. For example, as a result of rounding, share percentages may not add up to 100 percent even though it would be logical to expect them to.

Verification statement Scope 1-3

verification statement

MÜLLER-BBM CERT GMBH

Müller-BBM Cert GmbH, accredited verifier DAkkS D-VS-18709-01-01, accredited and approved for air transportation confirms, that CO₂ emissions data in the submitted Climate Change 2016 CDP final report, dated 2016/06/23 and those in figure “Direct and indirect CO₂ emissions of the Lufthansa Group” on page 41 of the sustainability report *Balance*, issue 2016, of

Deutschen Lufthansa AG and affiliates*

are verified under the verification standards

- EU Emissions Trading Scheme (EU ETS) Directive and EU ETS related national implementation laws
- Airport Carbon Accreditation (ACA) of Airports Council International Europe

with following uncertainties:

Scope 1	28,601,347 t CO _{2eq} (high assurance)
Scope 2	343,438 t CO _{2eq} (limited assurance)
Scope 3	8,005,651 t CO _{2eq} (limited assurance)

Kerpen, 30 June 2016



Müller-BBM Cert GmbH

*Scope of application from organizations at CDP-report 2016: Deutsche Lufthansa AG, Lufthansa Cargo AG, Lufthansa Technik AG, Lufthansa CityLine GmbH, Swiss International Air Lines AG, Edelweiss Air AG, Austrian Airlines AG, Air Dolomiti S.p.A, Germanwings GmbH, Eurowings Aviation GmbH, LSG Lufthansa Service Holding AG, Lufthansa AirPlus Servicekarten GmbH, Lufthansa Global Business Services GmbH, Lufthansa Training and Conference Center GmbH, Seeheim, Miles & More GmbH, Lufthansa Process Management GmbH, Lufthansa Systems GmbH & Co. KG, Lufthansa Industry Solutions GmbH & Co. KG, Lufthansa Flight Training GmbH, LZ-Catering GmbH.

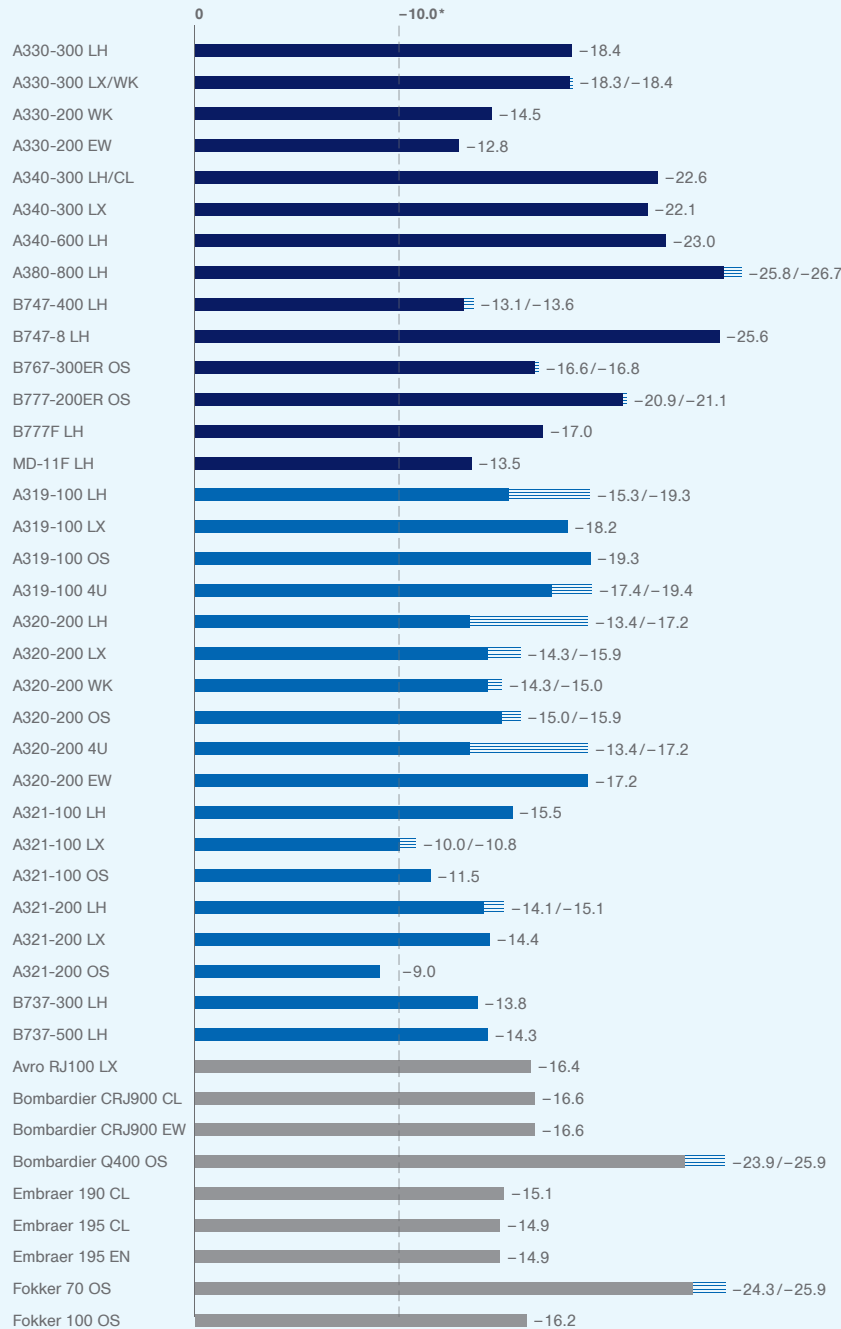
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Most stringent noise standards for the Lufthansa Group's fleet

Margins below the noise limit of ICAO Chapter 3 and Chapter 4

Active fleet of the Lufthansa Group on December 31, 2015
in EPNdB



Of the 595 aircraft in the Lufthansa Group's active fleet, 592 fulfill the stringent Chapter 4 noise standard of the International Civil Aviation Organization (ICAO). The most important element of Chapter 4 is the minus 10 EPNdB criterion (Effective Perceived Noise dB); see the vertical broken line in the overview on the left. The limits depend on the aircraft's maximum takeoff weight and number of engines.

The bar chart 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 for the previous issues of *Balance*, which include the individual noise certificate data of all Group aircraft. Different versions of an aircraft and its engines by year of construction are thus better taken into account. Accordingly, the value ranges from the lowest to the highest cumulated margin are indicated for many fleets. The analysis also takes 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. In addition, numerous additions and withdrawals in individual fleets lead to changes in the value ranges reported.

Grouping of aircraft types according to MTOW (maximum takeoff weight):

- under 50t
- 50 to 150t
- more than 150t

This division generally corresponds to a grouping of regional, continental, and inter-continental aircraft

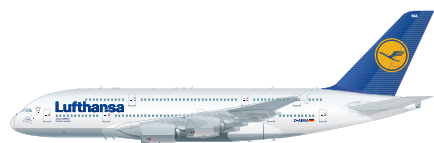
- 4U = Germanwings
- CL = Lufthansa CityLine
- EN = Air Dolomiti
- EW = Eurowings
- LH = Lufthansa, Lufthansa Cargo
- LX = Swiss
- OS = Austrian Airlines
- WK = Edelweiss Air

* New ICAO Chapter 4 limit, which has been effective for new aircraft since 2006: -10EPNdB when compared to Chapter 3.

The operating fleet of the Lufthansa Group

(as of December 31, 2015)

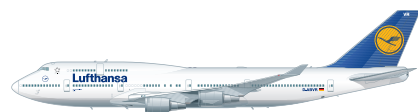
Lufthansa and regional partners



Airbus A380-800 LH: 14 aircraft, 509 seats, 12,400 km range



Boeing 747-8 LH: 19 aircraft, 364 seats, 13,000 km range



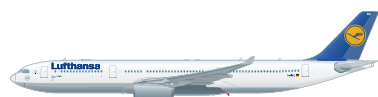
Boeing 747-400 LH: 13 aircraft, 371 seats, 12,400 km range



Airbus A340-600 LH: 24 aircraft, 297 seats, 12,900 km range



Airbus A340-300 LH: 15 aircraft, 279 seats, 11,850 km range
CL: 3 aircraft, 298 seats, 11,700 km range



Airbus A330-300 LH: 19 aircraft, 236 seats, 9,850 km range



Airbus A321-100/200 LH: 64 aircraft, 200 seats, 4,150 km range



Airbus A320-200 LH: 51 aircraft, 168 seats, 3,200 km range



Airbus A319-100 LH: 30 aircraft, 138 seats, 3,350 km range



Boeing 737-500 LH: 2 aircraft, 120 seats, 1,900 km range



Boeing 737-300 LH: 8 aircraft, 140 seats, 2,000 km range



Embraer 195 CL: 23 aircraft, 120 seats, 2,300 km range
EN: 10 aircraft, 120 seats, 2,300 km range



Embraer 190 CL: 9 aircraft, 100 seats, 3,500 km range



Bombardier CRJ900 CL: 19 aircraft, 90 seats, 2,100 km range

Eurowings and Germanwings



Airbus A330-200 EW: 2 aircraft, 310 seats, 10,450 km range



Airbus A320-200 EW/4U: 26 aircraft, 180 seats, 4,000 km range



Airbus A319-100 EW/4U: 43 aircraft, 150 seats, 2,900 km range

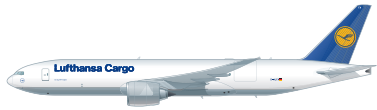


Bombardier CRJ900 EW: 16 aircraft, 90 seats, 2,100 km range

Lufthansa Cargo



Boeing MD-11F LH: 14 aircraft, 579 m³/89.4t, 6,700 km range



Boeing 777F LH: 5 aircraft, 657 m³/103t, 8,900 km range

Swiss and Edelweiss Air



Airbus A340-300 LX: 15 aircraft, 219 seats, 13,000 km range



Airbus A330-300 LX: 14 aircraft, 236 seats, 9,850 km range



Airbus A321-100/200 LX: 8 aircraft, 219 seats, 2,100 km range



Airbus A320-200 LX: 22 aircraft, 180 seats, 2,700 km range



Airbus A319-100 LX: 5 aircraft, 138 seats, 3,350 km range



Avro RJ100 LX: 16 aircraft, 97 seats, 2,150 km range



Airbus A330-300 WK: 1 aircraft, 315 seats, 9,000 km range



Airbus A330-200 WK: 1 aircraft, 275 seats, 10,800 km range



Airbus A320-200 WK: 6 aircraft, 168 seats, 4,150 km range

Austrian Airlines



Boeing 777-200ER OS: 5 aircraft, 308 seats, 12,100 km range



Boeing 767-300ER OS: 6 aircraft, 214 seats, 10,250 km range



Airbus A321-100/200 OS: 6 aircraft, 200 seats, 4,150 km range



Airbus A320-200 OS: 16 aircraft, 168 seats, 4,150 km range



Airbus A319-100 OS: 7 aircraft, 138 seats, 3,350 km range



Fokker 100 OS: 14 aircraft, 100 seats, 2,100 km range



Fokker 70 OS: 6 aircraft, 80 seats, 2,250 km range



Bombardier Q400 OS: 18 aircraft, 76 seats, 1,350 km range

Range indicated in general with maximum number of passengers or payload, respectively. In part, different versions are in operation.

Legend

4U = Germanwings	EW = Eurowings	LX = Swiss
CL = Lufthansa CityLine	LH = Lufthansa, Lufthansa Cargo	OS = Austrian Airlines
EN = Air Dolomiti		WK = Edelweiss Air

Corporate Responsibility: Prizes, awards and indices



Every year, the Lufthansa Group and the Group companies receive numerous prizes and awards. Here is a selection of those related to the topic of Corporate Responsibility:

2015

- The US trade publication Air Transport World named the Lufthansa Group as **Eco Airline of the Year 2015** – already the second time in three years.
- At the travel fair ITB in Berlin the Swiss climate protection organization myclimate honored the AirPlus Green Company Account of Lufthansa subsidiary AirPlus with the **myclimate Award 2015** for being a pioneer for sustainable financial products in the travel industry.
- The project Free Route Airspace Maastrecht and Karlsruhe (FRAMaK), supported by Lufthansa, Deutsche Flugsicherung and Eurocontrol won the **IHS Jane's ATC Award 2015** in the category "Environment".
- The initiative Ludwig Erhard Prize honored LZ-Catering with the **Recognized for Excellence 4 Stars** rating. The subsidiary of the European Foundation for Quality Management acknowledged the high level of entrepreneurial performance of the Lufthansa Group's experts for company restaurants with the four-star certificate.
- The Lufthansa career portal www.Be-Lufthansa.com was recognized by the research institute Trendence as **best career website** in Germany. The jury praised among other criteria the convincing design with high recognition value, clear presentation of contents, lively animation and clear navigation.
- The internal healthcare management of Swiss was honored with the **Friendly Work Space®** Label by Stiftung Gesundheitsförderung Schweiz (Foundation for Health Promotion Switzerland). The label is awarded according to

practice-oriented quality criteria. Friendly Work Space® companies systematically support favorable working conditions for their employees.

- Lufthansa Social Counseling has received the **Soul@Work Award** for the health-oriented accompaniment of corporate restructuring processes.
- Lufthansa Technical Training (LTT) was awarded the **Partner in Education Award** by Temasek Polytechnic in Singapore. Temasek Polytechnic is a leading teaching institution that trains mechanics for the aviation industry, among others.
- Austrian Airlines has participated in the environmental initiative "ÖkoBusiness-Plan" of the City of Vienna since 2005. The city supports companies in implementing ecologically and economically relevant measures. As in the preceding years, the airline received the **ÖkoProfit Award** for numerous projects in 2015 as well.
- The Air Transport Action Group (ATAG), a global association of partners across the aviation industry, accepted two outstanding efficiency projects of the Lufthansa Group for publication in **ATAG Aviation Climate Solutions**. The latter highlights 100 groundbreaking projects in the aviation industry related to the established four-pillar strategy for climate protection.
- The Lufthansa Group airlines Lufthansa, Swiss and Austrian Airlines were awarded a **gold rating** in the study "With a good conscience" for responsible corporate management. The business magazine Focus Money conducted the representative survey together with Deutschland Test and the analytical company ServiceValue.

2016

- The US trade publication Air Transport World honored the partners of the E-PORT AN initiative, which also includes the Lufthansa Group, as **Eco-company Partnership of the year**. It thus acknowledges the initiative's pioneering role and its commitment for more electromobility on the apron.
- Lufthansa was honored for being the **Quietest Overall Airline** by San Francisco Airport with the award that is given in the context of the "Fly Quiet Program". The airport's Round Table Initiative praised above all the airline's efforts in the areas of fleet modernization and noise reduction.
- For its analysis software OMEGA, which it jointly developed with IT company Aviaso, Lufthansa received the **Innovation Award of German Aviation** in the category emissions reduction.

The Lufthansa Group is currently listed in the following sustainability indices and received the following ratings:

- FTSE4Good
- Ethibel Excellence Investment Register and Ethibel Sustainability Index (ESI) Excellence Europe
- ECPI
- MSCI Global Sustainability Index Series
- oekom Prime Rating



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