



POLICY BRIEF

For decision-makers in politics, the media and business

4/18



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Reliability in aviation

ACHIEVING MORE QUALITY TOGETHER

More than a third of all European flights were delayed this summer. This figure is unacceptable for the aviation industry. On 5 October, representatives from the fields of politics, airlines, airports and air traffic control agreed on measures to ensure more reliability and quality.

The German aviation industry displays clear weaknesses. Air traffic control suffers from having too few air traffic controllers despite significantly increasing traffic. At airports, capacity bottlenecks are common in the areas of passenger and baggage handling. The security checkpoints turn out to be chokepoints. And there are problems with the airlines, too. The main causes are initial difficulties in the course of the Air Berlin integration as well as delayed aircraft deliveries on account of engine problems.

Lufthansa is investing

As Europe's largest airline, Lufthansa takes its responsibility seriously and carries out its own measures to increase quality:

- **Capacities:** In order to compensate for the delayed deliveries and above-average level of maintenance work for the new aircraft type, the Airbus A320neo, in the short term, Lufthansa is purchasing nine additional aircraft of

its predecessor model, the A320ceo. In addition, more reserve aircraft will be available from 2019 onward.

- **Quality assurance:** In order to stabilize flight operations, the Lufthansa Group will be investing around a quarter of a billion euros in the coming months. This means that 600 additional employees will be recruited to ensure operational quality alone.
- **Communication:** Lufthansa will inform its customers faster and even earlier about any changes. In addition, compensation processes will also be speeded up.

All fields of reform – political as well as entrepreneurial – have to now be addressed together and swiftly, so that the German aviation security will once again stand not only for security but for reliability, too.

ENSURING QUALITATIVE GROWTH TOGETHER

Over the past 20 years, passenger numbers at German airports have almost doubled. In order to once again facilitate qualitative growth, all system partners will have to perform to the best of their ability. And they will all have to work together efficiently.

“All system partners will now have to do their best. Airlines, airports and air traffic control. The fact is that the performance of the system is determined by the performance of the weakest link in the chain.”

CARSTEN SPOHR
CEO Lufthansa Group

+98 %
Passengers at
German airports



Source: ADV

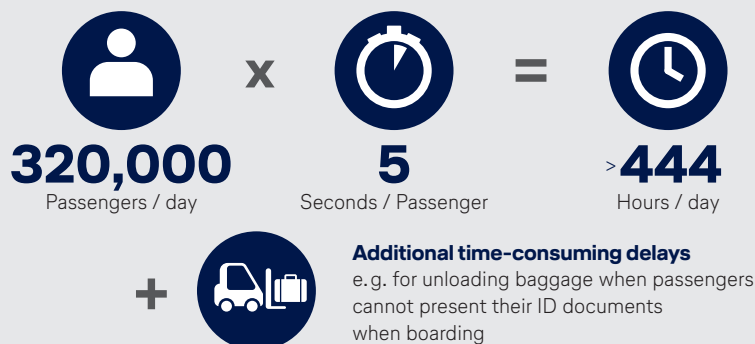
Additional boarding checks

ONLY THE RISK OF DELAY IS CERTAIN

Politics and the aviation industry want to make concerted efforts to ensure more punctuality in aviation, according to the unanimous statement made at the „Aviation Summit“. Essential for this are efficient processes at the airports in particular. At the same time, however, federal states in Germany are considering the idea that airlines should, in the future, compare the boarding passes with travelers' identity documents. This would delay boarding and thus thwart the aim to achieve better punctuality – and all without generating any gain in security. This would also be contrary to the recommendation of the European Commission.

CHECK-IN TIMES WOULD CLEARLY INCREASE

About 320,000 passengers take off from German airports every day. And every identity check takes an average of 5 seconds, according to the German Aviation Association (BDL). And if passengers have already handed in their luggage, but don't have their ID documents for boarding at hand, their suitcase will have to be unloaded again – massive delays will be inevitable.



CONSEQUENCES

- There will be more crowding at the gate
- The risk of further delays will increase

The aim of the legislative initiative is to record the travel routes and travel plans of potential offenders. In order to do so, airline employees should, firstly, check the ID documents of travelers when boarding and, secondly, compare them with the booking data – an approach that is not very convincing:

- Airline employees are not policemen:** Airline employees are trained to check tickets and make traveling easier for guests. Conversely, they are not qualified to verify the authenticity of identity documents. That is a task for the police.
- Flight tickets are not suitable for the purpose:** On boarding cards, names are shortened and numerous characters, such as accents, are displayed differently compared to the ID documents. For passengers with foreign names and papers, this aspect is exacerbated even more. The legislative proposal does not say how this should be handled.
- No wanted lists are available:** In order to assess whether a passenger is wanted by the police, airline staff would have to be able to access sensitive files, such as wanted lists. For good reasons, however, only the authorities are allowed to access them.

- “Early on” is not for the airport:** The legislature wants to record the travel plans of suspicious people “early on”. This objective is impossible to achieve when the checks are done immediately before a traveler boards an aircraft.
- Other modes of transport are excluded:** Similar measures are not being considered with cross-border rail, bus and car transport within the Schengen area – and for good reasons.
- Further complications:** If passengers do not have their passport at hand, their checked-in luggage will have to be unloaded again. The resulting delays will be enormous.

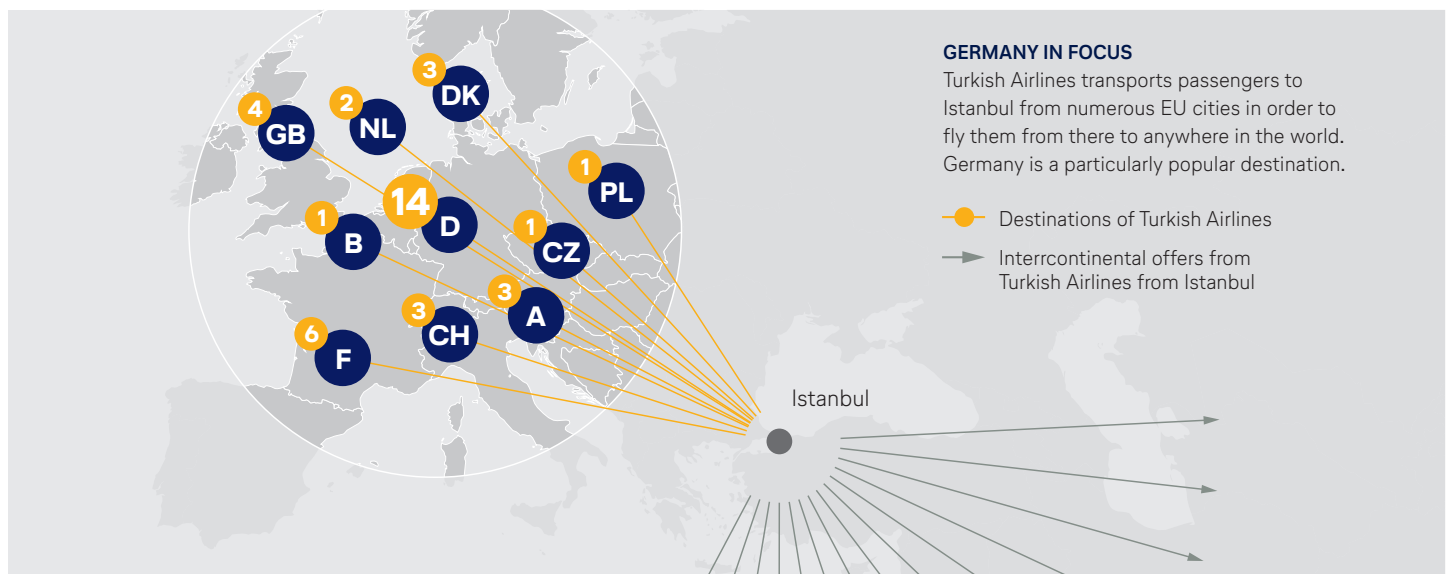
Danger prevention focuses on safety on board

Aviation safety is about preventing dangerous objects or substances from being brought on board. Checking people's identity contributes nothing to this. The EU has, therefore, deliberately decided against this measure, which is now being proposed in Germany. Accordingly, there is no ID card requirement for travelers in the Schengen Area. Only the police can establish identities beyond doubt. Obliging airline employees to carry out this task does not offer any added value in terms of security – but will lead to millions of delays in boarding.

New hub in Istanbul

GERMAN AVIATION
UNDER PRESSURE

Turkey will be opening the doors to its new airport in Istanbul at the end of October. The airport capacity is such that it will be able to handle 90 million passengers a year – and even 200 million travelers in the final stage. By comparison, around 64.5 million passengers took off and landed in Frankfurt in 2017. The Turkish infrastructure policy aims to draw away transfer passengers also from EU airports.



Istanbul as a hub is unthinkable without Turkish Airlines as its home carrier. The parastatal company is pursuing ambitious growth plans. Its passenger fleet will grow by about 50 per cent to 460 aircraft by the end of 2023. The planes are also intended to serve routes to the EU countries. Turkish Airlines will thus be able to transport even more passengers from the EU to Istanbul where they will then be transported in long-haul aircraft to the Far East and Africa. Istanbul is thus competing for the same passengers as London, Frankfurt or Munich.

The German market plays a key role in all this. These days, Turkish Airlines already flies to Germany an average of 38 times a day. In total, there are 14 airports in Germany on the Turkish Airlines flight plan. In comparison, Turkish Airlines serves six destinations in France, and four in the UK.

Unequal framework conditions

The Turkish state is forcing through this expansion of aviation by means of tailor-made framework conditions. Some examples:

- **Taxes:** Special charges such as the aviation tax that is applicable in Germany are not levied in Turkey – as in the vast

majority of EU member states. In Germany, the financial burden in 2017 alone amounted to over 1.1 billion euros.

- **Aviation security checks:** In Germany, airlines have to pay the costs themselves – including for passenger and luggage checks. Frankfurt Airport charges nine euros per passenger, for example. In Turkey, the state covers part of the cost and the airlines pay about 1.60 euros per traveler.
- **Operating restrictions:** In Istanbul, airplanes can fly around the clock. This means that the expensive infrastructure can be utilized most efficiently. This is not the case in Frankfurt and Munich, where extensive restrictions prevail.

The Lufthansa Group has had to reduce its Turkey programme by 50 per cent over the past 5 years. The new airport in Istanbul is considering to draw off further passenger traffic. This will be comparatively easy, as airlines at the Bosphorus can work under much better general conditions. Against this backdrop, the EU, the German government and the federal states are being called upon to relieve the domestic aviation industry of unilateral burdens and to actively support the modernization of our infrastructure.

Aircraft noise

BUILDING PERMITS COUNTER-ACT NOISE REDUCTION

The desire for more mobility – whether for personal or business reasons – is one of the megatrends around the world. Road, rail and air traffic are being called on to facilitate mobility that is as sustainable and thus as quiet as possible. Airlines and airports have been on the right path for years. However, successes are being counteracted by questionable building permits.

Building permits contradict ICAO objectives

The UN aviation organization, the ICAO, provides worldwide binding guidelines to solve noise problems near airports. This includes, in particular, a responsible settlement policy. However, not all municipalities and federal states actually shoulder the associated responsibility. According to a study conducted by the University of Bonn and the RWTH Aachen, residential and commercial areas are getting ever closer to the airports on account of the building on vacant lots, the densification of existing settlements or even the designation of completely new settlement areas. Frankfurt, Munich, Dusseldorf, Hamburg, Cologne/Bonn and Hanover were examined.

More people are being exposed to aircraft noise

This authorization practice is leading to increasing numbers of people living and working near an airport. The impact of people moving to such areas was recently quantified at Zurich Airport. According to the current Airport Report of the Canton of Zurich, the population around the airport increased by 1,600 from

2015 to stand at 83,000 in 2016. This influx of new residents has been observed for years and is the main reason why more and more people are being exposed to aircraft noise. This is “also a product of the cantonal spatial planning concept, which envisages intensified settlement development near the airport”.

Lufthansa Group is investing in quieter aircraft

Only by working together the spheres of politics and business can unite to relieve people of aircraft noise. It should be the task of municipalities and federal states to keep new developments around airports as low as possible. In turn, the main task of the airlines is to use the quietest aircraft possible. The Lufthansa Group is shouldering its responsibility here, in particular by investing in the latest aircraft. Take the current example: At the end of September, the company ordered, at a list price of around 3 billion euros, 27 more Airbus A320neo and A321neo aircraft. Their noise carpets are only half those of its predecessor models.

**EXAMPLE
COLOGNE/BONN**

In the vicinity of the Cologne/Bonn airport, settlement areas – both within and outside the noise protection zones – have been continuously developed over the past 50 years. Since the 1980s, the densification of existing residential areas has been in the foreground.

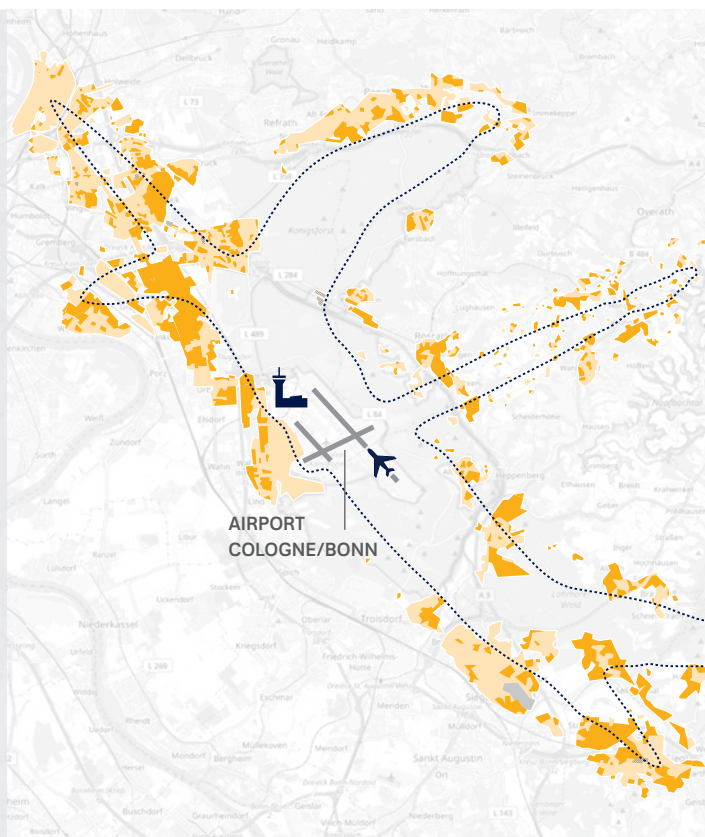
**RESIDENTIAL SETTLEMENTS
INDUSTRIAL AREAS**

- until 1961
- 1961 to 2013



NIGHT PROTECTION ZONE
between 10 p.m. – 6 a.m.
55 dB(A) continuous sound level
(6 individual cases 57 dB(A))

Sources: RWTH Aachen,
University of Bonn

**AVIATION ADVANTAGE:
NOISE HAS A LOCAL IMPACT**

According to the Federal Environment Agency, surveys carried out in line with the Environmental Noise Directive state that 8.7 million people throughout Germany are affected by road noise, 6.4 million by railway noise and 0.8 million by aircraft noise.

Between 10 p.m. and 6 a.m., the differences are even greater: road noise affects 5.6 million, rail noise 5.2 million and aircraft noise 0.2 million people.

**AIRCRAFT NOISE PROTECTION LAW
CONSTITUTES A SUFFICIENT BASIS**

In 2007, after intensive consultation, the Bundestag comprehensively amended the Aircraft Noise Act of 1971. Since then, noise impact research has produced no new findings. This is also confirmed by the recent case law of the Higher Administrative Court of Kassel. Any change in the Aircraft Noise Act in the context of the current evaluation would be, given the facts, unfounded.

Lounge

SO YOU CAN ALSO ENJOY
TASTY FOOD UP IN THE SKY

The senses react very differently to flavors on the ground and at high altitudes. This means that if meals were not prepared carefully, they would taste rather bland over the clouds, as though you were suffering from a cold. Specialized cooks at the Lufthansa subsidiary LSG Group develop recipes suitable for these conditions – whether for passengers in airplanes or astronauts on the ISS space station.

Giving good taste a helping hand

Air pressure, but also humidity and vibrations, which all increase during the flight, have a considerable impact on one's taste buds. For example, fruit and table sugar taste – so it seems – 15 to 20 percent less sweet when cruising at a height of about 10,000 meters. For salt, the reduction in the perceived taste is even up to 30 percent.

On the other hand, sour tastes are perceived more strongly – which is why dashes of lemon juice in desserts and sauces are forgone. However, just adding more salt or sugar to the food does not help to overcome the problem of the food tasting bland. Rather, using more herbs and other spices is the solution here – whether at a height of 10 kilometers or 400 kilometers above planet Earth.

Cheese noodles in outer space

Since the beginning of June, Alexander Gerst has been working with five colleagues on the ISS space station. He has taken six different meals on board with him, meals which he requested from the LSG and tried out in advance. These meals supplement the usual astronaut food and are designed to be eaten on special occasions. The aviation caterers have been working on these meals for a year. They include cheese noodles, pelmeni and bread and butter pudding with roasted plums, all in line with the ideas of Alexander Gerst and the specifications of the European Space Agency ESA.

The astronauts have to be able to eat the food easily despite the absence of gravity. Individual pieces of food should not fall apart so easily and waft through the space station. And in line with the ESA requirements, the food has to be durable for at least two years and still contain all the vital nutrients. Conventional food preservation methods reach their limits here and LSG has made use of novel methods – a knowledge advantage that may someday also benefit civil aviation.



The flying dining room

Food on board an Airbus A380
from Munich to Los Angeles:



420
vegetarian
meals



780
meals
with meat



300
bottles and
cans of beer



16
different
soft drinks



20
varieties of
hot drinks



3,000
pieces
of cutlery



1,200
loaves of bread
and bread rolls



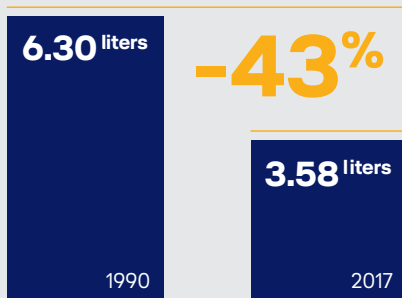
900
liters
of water

Telegram

Climate protection

LUFTHANSA GROUP INVESTS A FURTHER 3 BILLION EURO IN ITS FLEET

Investing in a fleet of aircraft that is as fuel-efficient as possible is the best form of climate protection. To this effect, the Lufthansa Group ordered 27 Airbus A320neo and A321neo aircraft at the end of September. Thanks to their efficient engines and aerodynamic wing tips, the short- and medium-haul aircraft will save up to 20 percent kerosene per seat kilometer. According to the list prices, the investment costs total around 3 billion euros. All in all, the Lufthansa Group has ordered 149 „Neos“, 13 of which are already flying for Lufthansa.

CONSUMPTION IN LITER
PER PASSENGER AND 100 KILOMETERS

Recent figures from the German Aviation Association (BDL) underline that the company is taking the right course. German airlines consumed only 3.58 liters of kerosene per passenger and 100 kilometers in 2017, thus setting a new efficiency record. By comparison, in 1990, the value was 6.3 liters, and consumption has fallen by 43 percent since then – especially because of extensive fleet renewals.

Stakeholder Survey 2018

YOUR OPINION COUNTS!

The Lufthansa Group seeks to maintain continuous communication with its stakeholders. On 15 October 2018, the Group will once again launch an online stakeholder survey on key sustainability issues. We would like to invite you to take part in this survey.

Your assessments will help us to focus on our commitment to upholding sustainable and responsible business practices. As of 15 October, [this link](#) will take you to the survey, which will take you about ten minutes to complete.

Lufthansa Technik

TRAINING
OFFENSIVE 2019

158 young people have recently started their apprenticeship or a dual course of study at Lufthansa Technik. At the same time, the selection for the coming year is already up and running. The goals are ambitious: Starting in 2019, Lufthansa Technik will almost double the number of apprenticeships offered directly in Hamburg and Frankfurt. The subsidiaries will also increase their commitment further – Lufthansa Technik AERO Alzey in particular wants to again enable significantly more young people to start their careers.

Women in the cockpit

LUFTHANSA WANTS TO MARKEDLY INCREASE THEIR NUMBERS

More than 10,000 pilots work in the cockpits of the Lufthansa Group. Only about 6 percent of them are women. This figure clearly contradicts the company-wide goal of achieving a fair share of women in management positions. After all, already 15 percent of the candidates in the current courses of the European Flight Academy, which trains pilots for the Lufthansa Group, are female. And Lufthansa Aviation Training is actively seeking additional female applicants – with, for example, a focus campaign for women, which is soon to be initiated.



AUGUST 1988

Nicola Lunemann and Evi Lausmann are the first two female pilots to take off for Lufthansa.

Lufthansa Group

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