

Airlines have to pay a plethora of landside and airside charges to airports. The tariff structures that airports set for the various charges are complex. There is a wide variation between airports in how tariffs are constructed. The fees charged by a selection of airports are examined.

Primary & secondary airport user charges

Airlines have to consider a range of airport and user charges as part of their operating cost budgets. At any standard international airport, the owner imposes charges for aircraft parking, landing and take-off, baggage processing, passenger processing and security. There will also be charges from third-party service providers for items such as passenger handling, baggage handling, lounges, aircraft cleaning, catering and airside buses.

While the first group of charges is unavoidable and can often be state-regulated, the second group of charges is more variable, and depends on the level of service a carrier wishes to offer their passengers. All published fees are those for ad-hoc visiting aircraft, so operators with regular routes often have discounts on the published rates, as do those aircraft that are based at the airport.

The United States (US) and Europe have a large influence on airport business and the system for charging, because they account for 21 of the world's 30 busiest airports in terms of passenger numbers, and 27 out of 30 in terms of traffic movements. The nine non-US and European airports in the top 30 for passenger numbers are located in China, Japan, United Arab Emirates, Singapore, Indonesia and Australia.

Regulations & ownership

The two main regulating authorities in aviation are the Federal Aviation Administration (FAA) and the European Aviation Safety Agency (EASA). When it comes to airport charges, they are generally limited to safety aspects and adjudicating airport rate disputes, while the International Civil Aviation Organisation (ICAO) issues recommended policies. The regulation of airport rates is often left to the relevant states to decide. The European Union

(EU) has recently become more involved in regulating airport charges and issued a directive in March 2009 that will be implemented in the United Kingdom (UK) in spring 2011, for airports processing over five million passengers per year. The regulations call for transparency in the way charges are shown. There should be no discrimination between users, encouragement for common charging systems within member states or airports serving the same city, incentives for new routes, and systems to look into complaints. It will not affect navigation charges. Rod Gander, regulation policy adviser at the UK Civil Aviation Authority (CAA) says that the finer details are still up in the air and that the UK government is still consulting the CAA.

While every state acts differently, it is generally accepted that only airports in busy hub areas will have their charges regulated, and then it tends to be just the main landing fees that are capped. This is to ensure that no airport can take advantage of a monopoly. Examples of this can be found in the UK, Ireland (through the commission for aviation regulation) and Australia.

The UK CAA sets price caps on the the airport charges levied by 'designated' airports decided by the British Government. These currently include three London airports: Heathrow (LHR), Gatwick (LGW) and Stansted (STN). These price caps are set every five years and involve advice from the Competition Commission. According to Gander, the price cap involves a limit on the total amount an airport can gain from landing, passenger and parking charges. For Heathrow this figure is set at £12 (\$20) per passenger. It can include many additional charges such as security charges, but does not necessarily include baggage-system charges or reduced-mobility passengers or check-in desk

rental. An airport increases its profits by expanding the retail and estate side of the business. Gatwick Airport Ltd believes that 50% of its revenue comes from aeronautical charges, the vast majority of which are capped.

The FAA issues guidance to airports on the legal requirement to be fair, reasonable and not unjustly discriminating. The guidance sets out the methods that an airport can use to charge aeronautical fees, as well as restrictions on the level of revenue gained when compared to the operating costs of the existing airfield facilities and services. In other words, an American airport cannot make any profit from aeronautical charges. The FAA allows at this point for another airport's costs to be covered by the main airport's revenue. This means that a small local airport can be assisted by an international airport nearby.

When British Airways (BA) and Virgin Atlantic thought that they were not being treated fairly at New York airports, they challenged the fees. BA says "Like all other international airlines, we are subject to user charges. The amounts vary per airport and country. We always seek value for money, and will challenge airports where we do not think we receive the desired service. As an individual airline, we have little control over the charges levied on us by airports and governments, but we work with industry groups such as the International Air Transport Association (IATA) to ensure that we are getting a fair deal."

FAA regulation 158.43 of 14 CFR states that for each departing passenger, a charge of \$4.50 should be collected by the airport. For UK airports, government charges, such as air passenger duty, are collected from the airlines by HM Revenue and Customs, and are not charged by the airports. In the past many airports, especially in the Asia Pacific regions, charged a cash fee upon

AIRPORT CHARGES FOR DOMESTIC FLIGHTS

Airport		Landing charges	Navigational charges	Infrastructure charges	Passenger charges	Total
London Heathrow	737	1,304	224	0	3,016	4,544
	A330	1,865	465	0	4,731	7,061
Bristol	737	1,515	414	18	4,133	6,080
	A330	5,301	619	28	6,483	12,431
London Luton	737	412	193	0	1,638	2,243
	A330	1,264	624	0	2,569	4,457
Frankfurt	737	318	279	1,051	3,199	4,847
	A330	947	637	3,878	5,018	10,480
Friedrichshafen	737	1,044	289	0	1,315	2,648
	A330	3,383	934	0	2,063	6,380
Munich	737	878	279	142	3,287	4,586
	A330	2,053	637	223	5,155	8,068
Paris-CDG	737	403	360	462	3,871	5,096
	A330	1,516	1,036	724	6,069	9,345
Paris-Orly	737	439	360	0	3,790	4,589
	A330	1,563	1,036	0	5,943	8,542
Toulouse	737	408	360	63	2,962	3,793
	A330	1,691	1,036	125	4,645	7,497
Nice	737	328	360	56	3,147	3,891
	A330	1,686	1,036	56	4,935	7,713
Toulon St. Tropez	737	350	360	97	3,102	3,909
	A330	1,726	1,036	97	4,864	7,723
San Francisco Int.	737	571	0	58	595	1,224
	A330	1,576	0	58	36	2,563
Oakland Int., Calif.	737	629	0	700	595	1,924
	A330	1,734	0	805	0	3,468
John F. Kennedy	737	1,025	0	0	595	1,620
	A330	3,313	0	0	0	4,242
Newark Liberty	737	1,142	0	0	595	1,737
	A330	3,698	0	0	0	4,627
Miami	737	317	0	2,097	595	3,009
	A330	871	0	3,251	0	5,051
San Diego Int.	737	300	0	323	595	1,518
	A330	970	0	507	0	2,406
Singapore Changi	737	446	0	173	2,912	3,531
	A330	1,658	0	347	4,567	6,572
Hong Kong Int.	737	804	0	0	429	1,233
	A330	2,213	0	0	673	2,886
Kuala Lumpur	737	188	0	28	533	749
	A330	736	0	28	837	1,601
Mumbai	737	305	119	12	985	1,421
	A330	1,175	119	12	1,544	2,850
Trivandrum	737	305	119	12	665	1,101
	A330	1,175	119	12	1,041	2,347
Marrakech Menara	737	266	0	0	736	1,002
	A330	1,020	0	0	1,155	2,175
Cape Town Int	737	396	302	0	1,228	1,926
	A330	1,231	535	0	1,926	3,692
Aircraft:	A330-300		737-800			
Seats:	295		189			
MTOW:	217		67			
MLW:	180		65.3			
Load Factor:		70%				
Route Type:		Domestic				
Turnaround:	120 minutes		60 minutes			
Currency:		US\$				

Data: airportcharges.com

departure. This is a government tax, which is often included in the airfare and often bypasses the airport, although some, such as US airports, still manage it.

Airport groups

Whether an airport is state-owned, privately-owned, independent or part of multiple airport groups can have a big effect on charges, although public or private ownership no longer has as much of an effect on the level of airport charges as it used to. This has a lot to do with city- and state-run airports being run just

like a private company, with the same emphasis on financial success.

There are a number of airport groups, both state and private. When the state-run British Airports Authority (BAA) was privatised, the new company operated three airports in London, three in Scotland, and one on the UK south coast. Recent rulings have meant that LGW has had to be sold. Another London airport, Luton (LTN), is managed by Abertis Airports. The charges at these airports are not necessarily similar, with some even having different methods of charging, but experience across the company and safety

in numbers means that the rates charged should remain fair but competitive.

Competition is often regulated. For example, the main London airports have a cap on how much they can charge in total per passenger, although LHR is still notorious for being considerably more expensive than the others. Historical factors mean an airline can charge up to 25% more for a flight to and from LHR.

In the US, airports are owned by the city, county or port authority and are therefore considered state-owned, while private companies can have a concession to manage them. The three main New York airports, for example, are owned and run by the Port of New York, and do not compete. If they were privately owned, there is a good chance that prices would rise or one would compete too successfully for the business of another. Within Europe, the majority of airports are privately run.

Landing & navigation fees

There are many different methods of pricing landing charges, involving a combination of basic landing fees, take-off fees and navigation fees. In addition, they can occasionally be connected to passenger (pax) and parking fees.

The most popular landing charge is for each and every landing that an operator undertakes. There are generally two methods of charging.

The first method is calculated per tonne of the aircraft's maximum take-off weight (MTOW). For example an A320-100 landing at Munich Airport (MUC) would be charged 2.22EUR (\$3) X 66 tonnes, equalling 146.52EUR (\$198). In addition MUC and many other German airports charge per tonne of mail/cargo on board a passenger aircraft. This method can also be calculated per maximum landing weight (MLW), as at many US airports. Some airports charge for take-off (T/O) only, such as Newark (EWR) and John F. Kennedy (JFK), while some such as Frankfurt (FRA) will charge for both T/O and landing.

The second method is a set fee per landing and/or per T/O. It can be used as a standalone fee, or in conjunction with the first method of charging. For example, LTN combines both methods by charging £103.63 (\$172) per landing as well as £1.54 (\$2.50) per tonne of MTOW per landing. LHR and STN charge a set fee for each landing, although both have separated landing and navigation fees. LHR charges £659-698 (\$1,087-1,151), depending on noise level, per landing plus navigation fees. The navigation fees are £71.43 (\$118) per landing and £0.97 (\$1.65) per MTOW tonne. STN is a more low-cost and regional alternative airport to LHR, owned by the same company that owns

LHR. It charges a standard landing fee of £113.22-243.18 (\$186-400) depending on the aircraft weight class. Higher fees of £152.55-429.84 (\$252-710) are charged during the summer season. In addition, the navigation fees are £115.50 (\$191) per landing. Using an A320-100 again, LHR's total landing fees could be a minimum of £795.05 (\$1,311), while Stansted's would be a minimum of £255.90 (\$422).

Navigation fees are generally included in the landing and/or T/O fees, with only a few airports separating them. When they are separated they can be charged as set fees or per tonnage, or even per departing passenger.

A landing fee can in some cases include a fee that is calculated per departing passenger. This not the same as the standard passenger fee, but one that is directly connected to landing and T/O. Many German airports, in addition to the landing charge per MTOW, also charge per passenger. Cologne Bonn (CGN) charges 0.28EUR (\$0.40) per pax while FRA charges 1.02EUR (\$1.38). This discrepancy is due to a big difference in how the airport charges other landing fees, and because CGN is a much smaller regional airport compared to FRA which has many long-haul operations.

Some airports, such as Belfast International, will also differentiate between international and domestic flights, with the latter having lower fees.

There are two factors related to landing fees that can increase the final charge considerably. These are night operating fees, and fees for use of the ramp and runway. Originally these charges would have been included in the landing fees, but as regulations have increased as well as competition and airline bargaining power, additional fees have been added to the calculations. This can make an airport seem financially reasonable but when everything is added up, the little extras make a big difference.

Night operations

With environmental considerations being a big part of aviation these days, noise pollution has to be addressed. Many airports have developed near to residential areas, and during night hours it is not uncommon for an airport to close. For those that remain open for part or all of the night, certain requirements are put in place so that only the quietest aircraft are allowed to operate, or only certain flight procedures are undertaken.

There are two ways of structuring airport charges. Stockholm Skavsta (NYO) and LHR charge per movement (SK500 for a 2.5 X base landing charge), while CGN and MUC charge per tonne. LTN uses both methods simultaneously, while Amsterdam Schiphol (AMS)

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	A330	5,301	619	28	6,483	12,431
London Luton	737	413	193	0	2,361	2,967
	A330	1,264	624	0	3,703	5,591
Frankfurt	737	318	279	1,051	4,102	5,750
	A330	911	637	3,878	6,432	11,858
Friedrichshafen	737	1,044	289	0	1,680	3,013
	A330	3,383	934	0	2,633	6,950
Munich	737	878	279	142	3,442	4,741
	A330	2,053	637	223	5,397	8,310
Paris-CDG	737	403	360	462	6,161	7,386
	A330	1,516	1,036	724	9,662	12,938
Paris-Orly	737	439	360	0	6,080	6,819
	A330	1,563	1,036	0	9,535	12,134
Toulouse	737	408	360	63	3,887	4,718
	A330	1,691	1,036	125	6,097	8,949
Nice	737	328	360	56	3,836	4,580
	A330	1,686	1,036	56	6,014	8,792
Toulon St. Tropez	737	403	360	97	3,506	4,366
	A330	2,013	1,036	97	5,499	8,645
San Francisco	737	571	0	58	595	1,224
	A330	1,576	0	58	929	2,563
Oakland Int., Calif.	737	629	0	700	595	1,924
	A330	1,734	0	805	929	3,468
John F. Kennedy	737	1,025	0	0	595	1,620
	A330	3,313	0	0	929	4,242
Newark Liberty	737	1,142	0	414	595	2,151
	A330	3,698	0	1,340	929	5,967
Miami	737	317	0	2,318	595	3,230
	A330	871	0	3,595	929	5,295
San Diego Int.	737	300	0	323	595	1,218
	A330	970	0	507	929	2,406
Singapore	737	446	0	173	2,912	3,531
	A330	1,658	0	347	4,567	6,572
Hong Kong Int.	737	804	0	0	1,046	1,850
	A330	2,213	0	0	1,640	3,853
Kuala Lumpur	737	188	0	28	2,538	2,754
	A330	736	0	28	3,980	4,744
Mumbai	737	408	158	226	2,587	3,379
	A330	1,566	158	226	4,057	6,007
Trivandrum	737	408	158	226	665	1,457
	A330	1,566	158	226	1,041	2,991
Marrakech Menara	737	361	0	0	2,468	2,829
	A330	1,785	0	0	3,869	5,654
Cape Town Int.	737	762	383	0	3,346	4,491
	A330	2,407	681	0	5,247	8,335
Aircraft:	A330-300		737-800			
Seats:	295		189			
MTOW:	217		67			
MLW:	180		65.3			
Load Factor:		70%				
Route Type:		Domestic				
Turnaround:	120 minutes		60 minutes			
Currency:		US\$				

Data: airportcharges.com

charges for weight per landing and T/O, with landing being cheaper than T/O. MUC and AMS both charge more for older, more noisy, aircraft.

Runway & ramp fees

Different airports will call this by different names, but these fees are still part of landing charges. They cover the use of the ramp and runways, and go towards their upkeep.

Sydney Airport (SYD) charges a runway fee of AU\$3.70 (\$3) per arriving and departing pax for domestic flights only, while for international flights the

charge is included in the passenger service charges. This is in addition to a per tonne fee for both landing and T/O, but the airport does not seem to have any other landing fees.

Manchester (MAN) is a rarity in the UK, since it is not privately owned: it is wholly owned by its surrounding local authorities. It is another airport that charges for runway use, but this time it is as an alternative to landing fees. The charge per MTOW tonne varies depending on whether the flight is during peak hours, and the weight category of the aircraft. MAN charges separately for navigation fees with the same calculation

as for its runway fees. These two charges are their only landing fees and could easily be made into one. This is in contrast to many other airports around the world that have many levels of charges that would be almost impossible to combine into one landing charge, because some rates are per passenger, some per landing and/or T/O. A good few are per tonne, but include some set fees also.

The simplest landing charges are those that have been reduced to one fee. Airports where this is practised include LGW and the New York Port Authority Airports.

Passenger fees

All airports have a passenger service charge (PSC), but there a variety of different aspects may be included.

The basic fee is generally charged per departing pax, with a few exceptions, predominantly in Australia, that also charge for arriving pax as well.

Within a departure fee there will often be differences for domestic and international pax. Within Europe there is also an intra-EU charge option. For example, FRA charges per pax: 14.70EUR (\$20) for domestic flights, 17.40EUR (\$23) for EU flights, and

19.00EUR (\$26) for flights to the rest of the world. Some airports do not differentiate between pax type, and have one set fee per pax. These include American airports and regional Australian airports. All airports in the US charge the same amount for a passenger facilities charge (PFC), which is currently set at US\$4.50. Within the EU there is no set amount, although UK airports tend to charge £9-11 (\$15-18) per international pax, with a few exceptions (MAN is £4.80 (\$8.00) during the winter and LHR is £22.97 (\$38)). It follows that the smaller the airport, the less it can charge for a PSC. If an airport is likely to have a large proportion of transfer or transit pax, it will often have a special rate for them as well, which is less than the corresponding pax charge. So FRA charges 10.20EUR (\$17), while MUC charges 12.71EUR (\$21) per domestic transfer pax and 13.20EUR (\$22) per international transfer passenger.

As part of the pax process, the hold luggage needs to be screened to international standards. Although an airline or handling agent will check the bags in and load them on the aircraft, the screening process in the middle will be controlled by the airport. The airport will therefore charge the operator for the pleasure, although it is often included as

part of the PSC. For those airports that list the fee separately, it is generally per pax, with Belfast International (BFS) listing £0.32 (\$0.53) per pax, comparable to Las Vegas McCarran (LAS) which charges \$0.65, and FRA which charges 0.68EUR (\$1.2) (0.25EUR (\$0.41) per transit passenger). This is compared to MAN which charges £1.08 (\$1.78) and LHR, which has a very high fee of £3.11 (\$5.13) per departing bag, not per passenger. Paris-Charles de Gaulle (CDG) charges from 2.50EUR (\$4.12) per departing bag.

Customs, immigration and terminal services are usually included in the PSC, but for some airports these are charged separately, or are only charged in certain situations. EWR charges \$15.55 per arriving pax as a government inspection charge that includes customs, immigration, health and quarantine. This is only for international passengers coming into Terminal B, and is in addition to \$7 per departing international pax that is charged in both terminals. Both Alice Springs and Darwin charge just over AU\$7 (\$5.80) as an airport services/terminal charge, while SYD includes it in the PSC.

In Singapore there is an Aviation Levy tax per passenger that works out at \$6.10 if travelling from terminals 1, 2 and 3 of

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Singapore Changi, \$2.20 from its budget terminal and \$3.10 when flying from the smaller Seletar Airport.

All airports need to have facilities for passengers with reduced mobility (PRM). This will involve disabled access to most areas as well as transport for these passengers from check-in to the aircraft (wheelchairs and electric buggies along with personnel to man them). These costs need to be met somehow and it is considered unfair to charge only those that are unable to get to an aircraft seat without assistance. Airports can therefore put an additional charge on to every departing passenger to cover the cost. Examples of charges are £0.22-0.27 (\$0.36-0.45) in the UK (with LHR being at least double), 0.17-0.34EUR (\$0.23-0.46) in Germany, and Paris airports ranging from 0.61EUR (\$0.820 at Paris-Orly to 1.05EUR (\$1.42) at CDG.

Parking fees

There are few occasions when an aircraft would be able to fly all day, since turnaround times, flight schedules, maintenance and crew numbers would make this difficult. Therefore, aircraft are often parked at airports for hours at a time, especially at night.

Charges for aircraft parking fall into

two areas: those that are calculated on the aircraft's weight and those that are calculated on the aircraft's location.

Many airports offer a certain amount of free time to airlines before charging commences. This can vary from 15 minutes at LTN to four hours at Frankfurt Hahn (with up to 12 hours free for aircraft based at Hahn). For some small airports, free parking can be offered as an incentive to operators to base their aircraft at that airport. This is the case for many business jets at Farnborough Airport in the UK. Many of the major international airports, such as FRA, San Francisco and LHR, offer no free parking, although some smaller airports do not offer it either if their space is limited. Once the free period is over, a fee per tonne per minute is charged. This is usually per MTOW, but not exclusively, with US airports tending to go for MLW. This rate will reduce after eight hours and then again after 12 and 24 hours.

Larger airports in the UK as well as NYO and SYD charge a set rate per 15 minutes that an aircraft is parked. This can be as well as, or instead of, the weight-related charges. The UK varies from £2.94/15mins (\$4.80) at Stansted, to £7.08/15 (\$11.68) minutes at LHR. SYD charges Aus\$38.50/15 (\$32) minutes and NYO adds SEK150-400

(\$19-51) per stand depending on the aircraft weight category. Singapore Changi charges \$49-97 depending on an aircraft's length and wingspan.

The location of the aircraft can have a big difference on the parking charges. If it is placed on a remote stand the parking fee will be a lot lower than if it had an airbridge connection to the terminal. On the other hand being parked on a remote stand will incur pax transport costs with buses needed to transport them to the terminal. At LGW, there are specialist departure gates with easy access to buses, enabling efficient boarding of aircraft parked on remote stands. The airline would need a contract with a handling agent and an airside bus operator in order to take advantage of remote-stand reduced costs. At LTN the hire of a bus and driver for a one-way trip between the terminal and aircraft is £124 (\$205) but the average passenger disembarkation would cost twice to six times that. If a contact stand is required, LHR and LGW charge three times the parking fee during peak hours. BFS charges twice and LTN charges 1.25 times the standard parking fees. Other airports will charge a set fee, on top of parking, for contact stands, with LAS charging \$280 for narrowbody aircraft and \$400 for widebodies. SIN charges an additional \$85-500 for an



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airbridge stand, with the rate depending on the aircraft's seat capacity. This rate is for the first three hours, after which the same amount is charged per hour. Within the UK many airports initially charge for stands as if they are contact stands, with reductions then applied if a remote stand is issued. This can be 20% off the standard parking fee or a rebate off the pax charge. A parking charge will occasionally be calculated based on the number of departing pax. This is the case at MUC where a stand at the terminal will be charged at 0.58EUR/pax (\$0.78) and a boarding station is charged at 0.29EUR/pax (\$0.39). MUC boarding stations are like remote stands except they still have airbridges, with escalators that take the pax to waiting buses. These charges are in addition to a charge of 0.0018EUR (\$0.003) per minute per MTOW tonne after an initial free time of four hours.

The parking fees can also be related to handling and ramp use, and are known as infrastructure or central handling charges. LAS is one of those airports, with a charge made per aircraft for covered or uncovered terminal access.

Handling fees

All commercial passenger operations need a handling agent to perform numerous airport services, including manning the ticket and sales desk; checking passengers in; dealing with excess/oversized or lost luggage; loading and off-loading baggage from the aircraft; boarding passengers on to the aircraft; offering information and assistance airside; delivering PRM; managing executive lounges; and dispatching the aircraft with the relevant

paperwork. A few airlines such as the major national carriers will undertake all handling themselves in-house, even at outstations. Other airlines will contract out every part of the process to handling agents such as Servisair or Menzies Aviation.

There will be a large group of carriers that fall in the middle, and will retain some of the process and need to subcontract other parts. One favourite to keep in-house is the executive lounge, in order to keep an eye on standards and keep premium passengers happy. Virgin Atlantic and Flybe have chosen to subcontract much of their passenger handling, but have kept their lounges in-house. At LAS the first-class lounge is run by the airport which charges an airline \$10 per passenger.

At airports that are municipally run, the handling agent may in fact be part of the airport company. In Europe it is now rare to find handling provided by the airport owner. "At one point a lot of European airports were handling agents too, but then the EU said that it had to open up to competition and now there are not so many," explains Bob Bullock, group business development director at Abertis Airports. "This now means that an airline can sign one handling contract instead of negotiating many different aspects of an aircraft's turnaround." Abertis Airports owns three European airports, has concessions for 21 airports mainly in South America and manages five airports in the US.

Whether an airline undertakes the handling itself or employs a handling agent, it will still need to pay the baggage charges already mentioned. It will also need to pay for the rental of check-in desks and their alternatives, such as

Air bridges are built, serviced and maintained by airports, and are charged for as an element of parking fees.

kiosks. At SYD the charge is AU\$24.95 (\$20.80) per hour, while at EWR it is \$5.60 per hour (desks with no baggage belt are available at \$4.25 per hour) and at MAN it is £10.81 (\$17.84) per hour. With so many of the airlines at LHR having dedicated check-in areas and multiple flights per day, the charge is £20.40 (\$33.70) per day. At LGW numerous methods of check-in are available. The traditional check-in desk is £0.82-2.21 (\$1.35-3.00) per pax, while kiosks are £0.67-0.70 (\$1.10-1.15) per pax. The check-in of a transfer pax at the airside flight connections centre is also £0.67 (\$1.10) per pax. Most airlines now offer internet check-in and LGW charges an airline £0.59 (\$1.00) per pax to process that person through the system. If an airline wishes to open check-in desks in the evening before an early flight, the airport will charge 50p (\$0.90) per passenger for day-before check-in.

Ticket desks at Ronald Reagan Washington National Airport are available at \$135.65-285.83 depending on the terminal used. The larger Washington Dulles International Airport does not have more expensive ticket desks, and in fact charges less for use of aircraft tugs and baggage areas.

Security charges

One of the most important features of an airport is its security, for passengers going through with their hand luggage and hold luggage, as previously touched on. Airports must undertake Triple-A baggage reconciliation and screening. To enable airports to keep up with requirements and technology, they often choose to increase or develop new charges. This is in part the cause of security charges. The general rule of thumb is a charge per passenger, although it does vary for international, domestic and transfer pax. Both Singapore airports charge \$8, while German airports vary from 0.68EUR (\$0.92) to 1.21EUR (\$1.63), with the amount not necessarily relating to the airport size. SYD includes its security charge in with the PSC, but strangely its domestic charge is an additional Aus\$2.19 (\$1.80) per passenger, while Melbourne charges a single reduced rate per passenger of Aus\$0.27 (\$0.23). Separate security fees do not seem to be charged by US airports, but are standard in Europe with Amsterdam being as high as 12.94EUR (\$17.50) per passenger. Some German airports will also charge a security fee for

each tonne of cargo or mail that a passenger aircraft carries.

Environmental charges

The environmental impact of aviation is a subject heavily discussed by both industry and governments. Aircraft are being better designed, alternative fuels are on the edge of commercial use and airports are integrating environmentally friendly ideas in their buildings. It sometimes happens that an airline can have a spillage of a pollutant as various aircraft fluids, or cargo items. In these cases the airline will be liable for the cost of cleaning up the pollution, which is charged by the airport. MUC charges 46EUR (\$62) per bag of absorber for liquid chemical spillages, and 38EUR (\$51) for a bag of oil absorber.

Airports also play their part in the global reduction of CO₂ and NO_x emissions, as well as noise, by restricting older aircraft.

Noise restrictions are the most common on two levels: noise reduction for the nearby residents, and restrictions of older aircraft as their engines are often the noisiest and largest polluters. Those aircraft that are listed by ICAO as failing to meet Chapter 3 noise standards are charged more per landing. Fees at LGW are three times the standard landing fees. There is an increase of just 150% for

Chapter 3 high aircraft which includes, among others the BAC 1-11, 727, DC-9 and 747-100/200/300/SP.

MUC is similar, with a detailed breakdown of what each aircraft type should be charged. This will depend on both the MTOW and the certification according to ICAO Annex 16. This means that a 747-300 will be charged about five times as much as an Embraer ERJ-145. BFS, on the other hand, does not currently charge an additional fee, but is considering the introduction of a noise-related landing charge.

European legislation means there is a complete ban on Chapter 2 aircraft, but despite this, AMS still has a charge option for them if they land for any reason. At AMS aircraft such as the 727, A310 and older 747s will be charged an additional 40%. The A320, 737NG and ATR are charged the standard rate. Aircraft such as the A318, A340 and CRJ-100/-200 have the charge reduced by 15%.

There are also airport charges for NO_x emissions. At LTN a NO_x levy is applied to all departing aircraft where the engine NO_x emissions exceed 400g per pax or per 100kg of cargo. This is calculated from the ICAO landing and take-off (LTO) cycle figures, as shown in Annex 16, volume II. LTN then charges £0.005 (\$0.008) per gram of engine NO_x emissions above 400g per pax. MUC and

CGN are among many that charge for NO_x emissions, with CGN charging 3EUR per kg of NO_x within the LTO cycle per landing.

As the pressure from various areas increases and less polluting aircraft become available, environmental charges will increase. It is one area that is unlikely to see opposition from passengers and governments. Total revenue gained would be likely to remain the same as the number of noisier (and higher emission-producing) aircraft decline.

Miscellaneous fees

When an aircraft is parked at the airport on a turnaround, a number of tasks are completed along with the engineering and passenger handling.

Fuel will be needed, ready for the outbound flight. This will involve a contract with one or more fuel suppliers, such as AirBP or Shell. Large discounts on fuel will depend on the level of contract, the amount, and airline purchases across the world and the local market.

For every turnaround, an aircraft's interior will need a basic clean and every so often a deep clean. A basic clean can be completed in 10 minutes or less and have no effect on a turnaround time. For some low-cost carriers (LCCs), such as Southwest and easyJet, costs are reduced



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by having cabin crew clean the cabins and galleys as they complete security checks. Other airlines contract a company to supply a cleaning team on every turnaround. OCS and Airline Services are two such companies, which will deep clean the aircraft. This level of cleaning is completed less often, since it is more expensive and involves a much longer period of downtime. Cleaning the outside of the aircraft is a much more specialist area and is sometimes undertaken by the same people who, during the winter, de-ice aircraft. De-icing is an essential but costly service. At LTN where the need is limited to a small period in the winter, the cost is £1,000 (\$1,650). At MUC, where the service is required all of the time for most of the winter, the cost is 0.198EUR (\$0.27) per departing pax and 0.008EUR (\$0.01) per workload tonne. While many cleaning companies can offer generators in their vehicles for their equipment, an aircraft still needs ground power. A ground power unit (GPU) is offered at MUC at 25EUR (\$34) per 30 minutes. A GPU may also be offered as part of a handling contract.

At some airports the cleaning will be completed as a part of the handling agent's abilities. This is typical at smaller airports, or those where the airport's own in-house handling agent has developed to cover all areas of aircraft service such as at FRA with Fraport. Fraport runs the airport and offers all services an operator might need. For example, the catering can be offered by Airport Cater Services and the cleaning and de-icing by ASG Airport Services, both subsidiaries of Fraport. It is rare to find a handling agent that is still totally airport-owned, as most, especially in the EU, have been sold off or become an autonomous subsidiary, such as at

FRA. In the Middle East all areas of the airport operation are controlled by the airport company.

If an aircraft needs emergency service support, there may be additional charges at some airports. Singapore Changi, for example, will charge \$350 per hour for a fire vehicle and \$25 per hour for a firefighter, while MUC offers firefighters at 60EUR (\$80) per hour.

All airline personnel, both crew and ground staff, must have an airport identification. Airports will charge an airline to cover the many security checks that are undertaken before issuing airport identification, and to maintain the associated equipment. This can be equipment that gains access, only with a valid ID, to the airport's airside locations. At LHR the charge is £114.91 (\$190) per staff identity card, with a re-issue being £99.06 (\$163.45). In addition, the cost of staff car parks can be offset by charging airlines for the use. LHR charges £664-1,900 (\$1,095-3,135) per staff pass for perimeter and terminal adjacent parking. LHR will also charge if an operator wishes to have a vehicle airside. This works out at £59.53 (\$98.22) per pass-holding driver per year. The drivers must hold airside driving permits, which are charged at £67 (\$110) per permit at LTN.

Rebates

Reductions for more environmentally friendly aircraft and remote-stand parking have already been mentioned, but there are other areas where an airline can reduce its airport charges.

AMS has a large scheme called the airline reward programme that seeks to sustain the growth of the airport. On short-haul, if an airline wishes to start a

De-icing can be offered by the airport, handling agent or other third party provider. Flat rate fees are charged per aircraft.

route not already offered by AMS, then no PSC will be charged for the first year and only 50% for the second year. New long-haul destinations (or additional frequency) for an airline will mean a 100% reduction in PSC for one year, and a 50% PSC reduction for the second year. Bangkok's Suvarnabhumi Airport offers rebates on landing fees for increases in the number of international passengers an airline has carried through the airport, but it does not include transit pax. Ten airlines have taken advantage of the scheme this year, including Thai carriers, LCCs, Middle Eastern airlines and other Asian national carriers.

Scottish airports, such as Aberdeen and Glasgow, have rebates for certain services. Short-distance flights within Scotland have a 65% reduction in the weight-related landing charge. Short routes outside Scotland have a 26% reduction. New international services are rewarded with a 50% reduction of airport charges for the first year, 30% for the second year and up to 10% for the third year. There is a lesser reduction for new domestic routes. There are also reductions for double-stop flights where passengers are collected at one place and then set down at two destinations. This can happen with flights to small regional airports and the Greek islands, to enable an airline to operate a full flight.

Airports are constantly evolving as newer designs and standard practices are developed. As old terminals, many dating from the 1950s, need renovation and development, airports need to invest large amounts of money. One method is to add additional infrastructure charges to airlines that operate out of these new or renovated terminals for a certain period after it is opened. This has happened at Chicago O'Hare, where airlines are to be charged a 15-17% increase in rental rates and a 38% increase in landing fees for 2010. These sharp increases are to pay off debt for a 2003 expansion programme. The affected airlines are talking to the city's Aviation Department about reducing the fees. If they are not reduced, the airlines will withdraw all support for the second phase of the development, because the increase is exacerbating their financial difficulties and threatening competitiveness. **AC**

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