CO_2 emissions of private aviation in Europe

CE Delft

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2 Introduction

The European Union aims to emit 55% less greenhouse gases by 2030 compared to 1990 levels and to become climate neutral by 2050 in order to contribute to the global effort to address climate change. Some Member States have set higher goals. The Netherlands, for example, strives for 60% GHG reduction compared to 1990 levels (Rijksoverheid, 2023), and Germany strives for 65% GHG reduction in 2030 compared to 1990 levels (Bundesministerium der Finanzen, 2022).

In 2022, ICAO (the UN agency for civil aviation) adopted a long-term global aspirational goal of net-zero carbon emissions by 2050, which would be achieved by innovative aircraft technologies, more efficient flight operations and the use of sustainable aviation fuels (ICAO, 2022). Business aviation leaders have also pledged in 2021 to achieve net-zero CO_2 emissions by 2050 by expanding the set of climate commitments they made a decade ago (NBAA, 2021).

Worldwide air passenger traffic has been increasing almost uninterruptedly from before the 1980s until the COVID-19 pandemic, which caused an aviation decline of such an extent that has never seen before. Despite this decline, aviation accounted for over 2% of global energy-related CO_2 emissions in 2021 (IEA, 2022).

Private flights have significantly higher emissions per passenger kilometre than other modes of transport. According to Transport and Environment, private jets are 5 to 14 times more polluting per passenger than commercial flights, and 50 times more polluting than trains (Transport & Environment, 2021). Some private jets emit two tonnes of CO_2 per hour (Transport & Environment, 2021), while the carbon footprint of inhabitants of the EU27 was equal to 6.8 tonnes of per person in 2019 (Eurostat, 2022). According to Eurostat, the sector "transportation and storage" is the sector with the highest increase of GHG emissions (Eurostat, 2023). Within the transport sector, the largest increases of GHG emissions up to 2030 are projected in the aviation sector (European Environment Agency, 2022).

The aim of this report is to provide a detailed overview of private flights and their emissions in Europe (defined as EU27, Norway, Switzerland and the United Kingdom), and also on national level for these the countries. This report presents figures for the total private aviation CO_2 emissions, the most frequently used private aviation routes , the shortest private aviation routes, the routes with the highest CO_2 intensity, the most frequented private aviation routes under 100 km and 500 km, and the private aviation distance distribution for each year. The report also identifies commonly used routes for which other modes of transport provide attractive alternatives.

2.1 Methodology

CE Delft has built a database for this project which contains information on all private flights departing from and arriving in the EU27 countries including Norway, Switzerland and the United Kingdom, disaggregated by year, route and aircraft type, and the CO_2 emissions for each flight. The flight data have been provided by CIRIUM[1] and include all private/ business flight operations departing from and arriving in European countries. Flights with aircraft with less than three seats have been excluded from the analysis, as well as flights to and from airports without an IATA code, and flights that arrive at the same airport as they have departed from. The reasons are that small aircraft are used for leisure rather

[1] www.cirium.com/

than for business or private flights; that airports without an IATA code typically serve leisure aviation, parachute jumping flights, et cetera; and that round trips are often also for leisure or training purposes.

The flight data include medical or military flights, as long as these flights were executed with aircraft typically used in business aviation (see Table 379 through Table 381). According to the EBAA, medical plus military flights made up around 15% of general aviation of the EU27 in 2020-2022 (EBAA, 2022). In Norway, Sweden and Finland, the situation is different. For departing flights from Finland for the years 2020, 2021 and 2022, "private/business aviation" includes 71.23%, 47.52% and 44.58% military/governmental flights respectively. For departing flights from Norway for the years 2020, 2021 and 2022, "private/business aviation" includes 92.25%, 78.98% and 65.18% medical/special flights respectively. For departing flights from Sweden for the years 2020, 2021 and 2022, "private/business aviation" includes 52.60%, 31.83% and 36.02% medical/special flights respectively. The total number of flights for Norway and Sweden in a given year have been adjusted by the percentages above to draw a more representative picture. Because military and governmental flights (the largest share of private/business flight purposes in Finland) are more substitutable than medical/special flights, we have decided to keep the total number of flights and CO_2 emissions. The CO_2 emissions have been adjusted based on the type of aircraft that is mainly used for the purpose we control for in the specific country. In Norway in all researched years, BE20 aircrafts are mainly used for medical/special purposes. In Sweden, BE20 aircrafts are mainly used for medical/special purposes in 2020 and 2021, but in 2022, Sweden started to use mainly PC24 aircrafts according to our dataset. By using the percentages to calculate the total medical/special flights for each country for each year, we were able to make an estimation of the amount of CO_2 emissions of medical/special flights for Norway and Sweden to deduct from the grand total, assuming that only the most common ambulance aircraft types per country per year are used for medical/special flights. The flight routes in Norway and Sweden that are (almost) only used by the above specified aircrafts have been left out of all the following tables. For the calculation of the most flown routes and shortest routes for Sweden and Norway, we have left out the main types of aircraft used as ambulance aircraft in Sweden (BE20 and PC24) and Norway (BE20).

Table 379 through Table 381 in the annex show how many flights for each aircraft were included in the analysis for the years 2020, 2021 and 2022. Some larger aircraft have also been included that are used primarily for commercial purposes, but also for private/business purposes to some smaller extent. As the dataset only includes private/business flights, this does not lead to increased uncertainty or misrepresentation.

The carbon dioxide emissions of all flights have been calculated by using the Eurocontrol Small Emitters Tool (latest version at the time of writing, 2021) (Eurocontrol, 2021). Other greenhouse gas emissions have not been taken into account, as we are looking at the direct CO_2 emissions of business aviation, and not the CO_2 equivalent.

For each geographical area, we report the aggregated number of flights and CO_2 emissions for the years 2020, 2021 and 2022. The calculation of flights and CO_2 emissions for each country per year has been executed by using only the departing flights from that specific country. Because business and private flights in Europe are mainly on intra-European routes, most flights would be double counted of both departing and arriving flights would be counted. As most flights are return flights, meaning that a flight from London to Paris is commonly accompanied by a flight from Paris to London, it would lead to more representative results to only count this as one flight for the United Kingdom and one flight for France, instead of two flights for the United Kingdom and two flights for France.

Tables of the shortest flight routes for each country exclude routes with fewer than 10 flights per year. These tables and tables showing the most CO_2 intense routes exclude routes within the same city, as it is likely that these are repositioning flights or flights for training purposes, aerial photographing or leisure compared.

The city in which an airport is located within the CIRIUM dataset depends on the metropolitan area codes of the airport. It is not uncommon for airports within a greater city area to share the same metropolitan area. A well-known example is London (United Kingdom). There are many airports which all fall under the metropolitan area code LON, such as London Heathrow, London City Airport, London Gatwick, London Luton and London Biggin Hill to name a few. This means that all these airports have 'London' as their city. Farnborough does not fall under this metropolitan area code, which means that the city of this airport is not London, but Farnborough. Table 378 in the annex gives a few cities as an example together with which airports are located in that city based on metropolitan area airport codes. A similar situation also occurs for other cities with multiple airports, such as Paris, Stockholm and Milan, which have also been explained in the table. Because airports in and around London are the most evident case, this has been illustrated in this example.

Corrigendum

After publication of the report, it was brought to our attention that one of the airports referenced in the report, Böblingen in Germany, is no longer operational. Some flights that departed from or arrived at Stuttgart were incorrectly assigned to Böblingen in our dataset. This means that the shortest route in Germany in 2022 was not 15 but 22 kilometres (Friedrichshafen-Altenrhein), and Stuttgart-Böblingen is not amongst the most CO_2 intensive routes in Europe. Correcting for the fact that Böblingen is closed does not alter the number of flights in Germany or Europe, and the calculated CO_2 emissions by private aviation has not changed either. The route between Stuttgart and Böblingen has been removed from the relevant tables in the report.

Background

Flights to and from Böblingen are included in the dataset CE Delft has obtained from Cirium, a leading aviation data and analytics provider, which served as a basis for the calculations. The dataset included all non-commercial flights executed with fixed-wing aircraft and arriving at or departing from European airports. The source of the dataset is publicly available flight-tracking data, for example from ADS-B or MLAT, which contains, amongst others, information on airport of departure, airport of destination and aircraft type. In a few cases, flight tracking data does not report all the information and some data fields are manually entered in the database. This mainly occurs for flights that are not required to file a flight plan with an ANSP. In most cases, these are small turboprops flying short distances. This publicly available data is collected, analyzed and categorized by our data expert Cirium, who specializes in extracting business and leisure flights from the available dataset. Cirium has informed us that, because Böblingen airport had not been marked as "inactive" in their reference data, the received positional information of certain flights led to a linear projection to the ground in the close vicinity of the inactive Böblingen airport, to which the flights were appointed. If Böblingen airport would have been marked inactive, these flights would have been assigned to Stuttgart airport (which would mean a round flight in the cases of Stuttgart – Böblingen). Round flights have not been taken into account in the dataset. Because the number of flights is low (18 flights on the Stuttgart-Böblingen route in 2022, out of 58,424 flights departing from German airports), and because they were executed using turboprop aircrafts, the influence on the overall number of flights and CO2-emissions is negligible. Most flights in our database are performed by jets and 95% of emissions are also from jet aircraft.

3 Private aviation in Europe

Our used dataset contains 118,756 private flights for the year of 2020, emitting approximately 354,690 tonnes of CO_2. The number of flights was lower than in 2021 and 2022 due to the COVID-19 pandemic being at its peak, which led to aviation experiencing a large dip due to travel warnings and multiple constraints on travelling as well as, probably, a reduced number of business meetings. For 2021, the dataset contains 350,078 private flights emitting around 1,637,623 tonnes of CO_2. This is a large increase in both the number of flights (almost tripled) and CO_2 emissions (more than quadrupled) compared to 2020. The number of flights in the dataset in 2022 is 572,806 (over 1.5 times the number of flights in 2021) emitting about 3,385,538 tonnes of CO_2 emissions (more than doubled compared to 2021). This could be explained by private aviation becoming more popular after the COVID-19 pandemic. During the pandemic, there were more first-time private flyers (Globeair, 2020).

3.1 Distance distribution

Figure 1 shows the distribution of flight distances of all flights in 2020. The largest category of flights is between 251 and 500 km distance and the second highest category is between 0 and 250 km distance. It is clear that most of the flights are for short distances, because 58% of all private flights in 2020 were used for a distance lower than 500 km.

Figure 1 - Histogram containing the distances of all flights in 2020

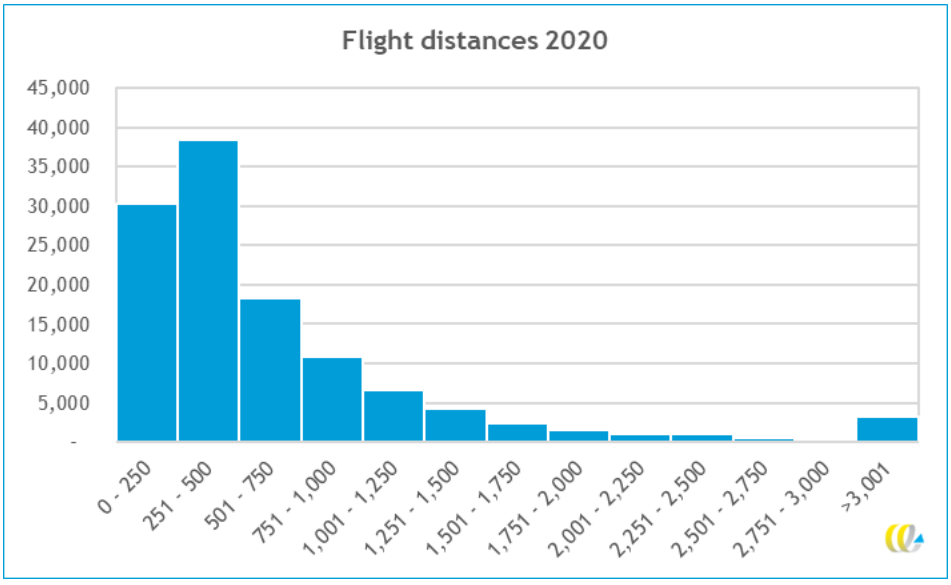


Figure 2 shows the distribution of flight distances of all flights in 2021. The pattern remains the same, with the categories between 251 and 500 km (26% of all flights) and between 0 and 250 (18% of all flights) containing the most private flights. The category of flights between 501 and 750 km (16% of all flights) is almost on the same level as the category of 0-250 km. There are also a lot more flights, both in relative and absolute terms, that exceeded 3,001 km (6% of all flights, compared to 3% of all flights in 2020).

Figure 2 - Histogram containing the distances of all flights in 2021

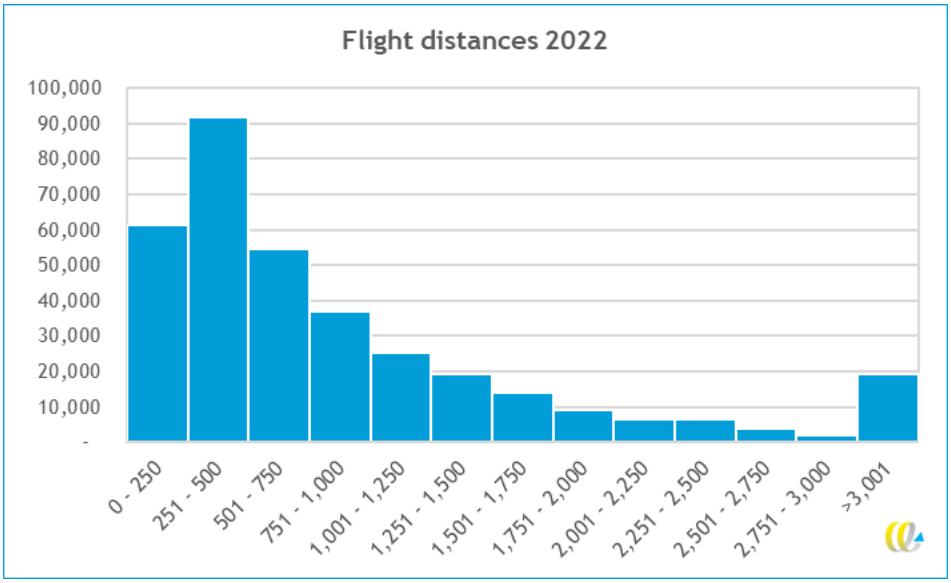


Figure 3 shows the distribution of distances of all flights in the year 2022. The category between 251 and 500 km still has the highest number of flights (24% of all flights). It stands out that the category between 501 and 750 km now has the second highest number of flights (16% of all flights), followed by the category between 0 and 250 km (15% of all flights). The category over 3,001 km has increased even further, now containing 9% of all flights in 2022. Figure 4 shows the distribution of flight distances of all years in one graph, which makes the differences between years more clear.

Figure 3 - Histogram containing the distances of all flights in 2022

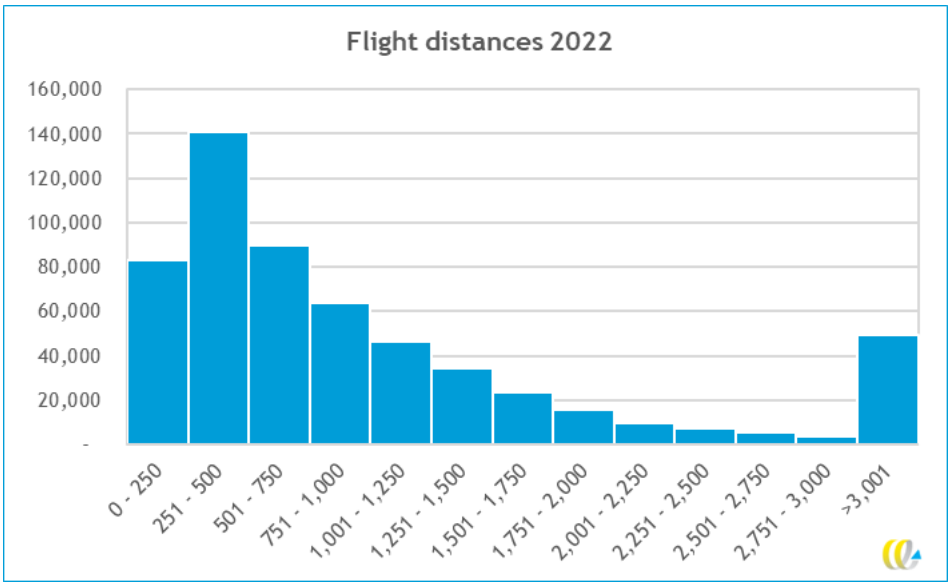
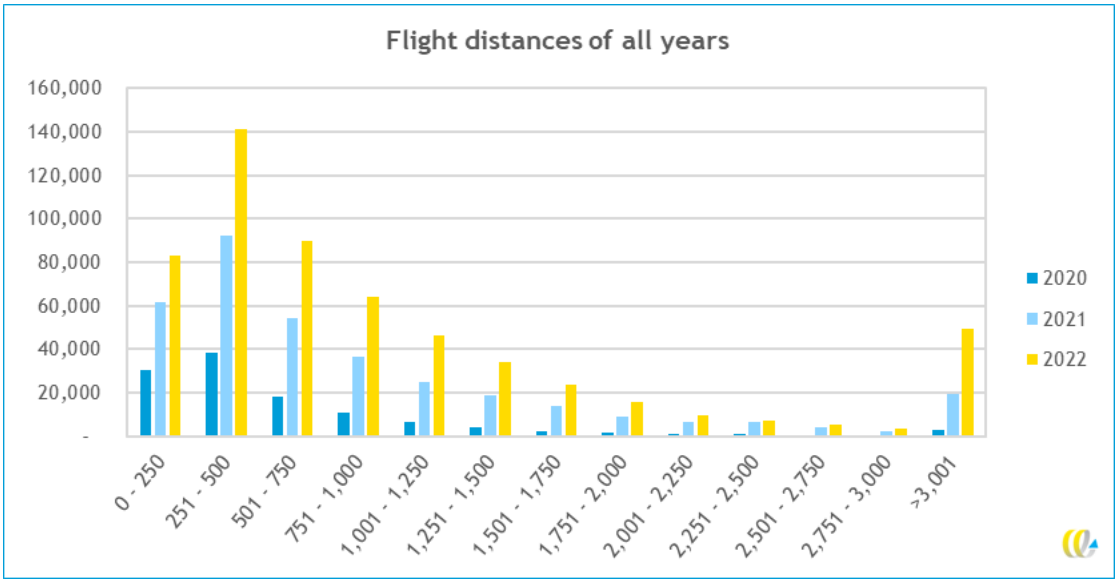


Figure 4 - Distribution of flight distances of 2020, 2021 and 2022 in one graph



3.2 Most frequent flight routes

2020

Table 1 shows the routes with the most private flights in 2020, including their CO_2 emissions. A number of the routes connect economic centres like Paris, London, Geneva and Milan. Other routes can be partly explained by businesses that benefit from a frequent route to/from their headquarters, such as the route regarding Barrow-In-Furness, where BAe Systems is located that has its own aircrafts, and the route between Guernsey and Southampton, where an aircraft of Specsavers flied regularly.

Table 1 - Most used flight routes in 2020, including number and CO_2 emissions

City Pairs	City Pairs2	Number of flights	CO_2 emissions (tonnes)
Paris-Geneva	Geneva-Paris	636	1,180
Paris-London	London-Paris	419	883
Barrow-In-Furness-Bristol	Bristol-Barrow-In-Furness	404	356
Geneva-Nice	Nice-Geneva	396	673
Barrow-In-Furness-Farnborough	Farnborough-Barrow-In-Furness	388	375
Paris-Nice	Nice-Paris	384	1,005
London-Nice	Nice-London	316	1,357
Rome-Milan	Milan-Rome	286	578
Guernsey-Southampton	Southampton-Guernsey	278	208
London-Geneva	Geneva-London	270	901

Note: Routes that are mainly used for medical purposes, military purposes or are being exploited by airlines offering scheduled flights using business jets have been excluded from table 1 to table 12.

Table 2 shows the most frequent flight routes of 100 km or less. The routes in this list are mainly being flown by turboprop aircrafts; jets are used more on longer routes.

Table 2 - Most used flight routes under 100 km in 2020, including number and CO_2 emissions

City Pairs	City Pairs2	Number of flights	CO_2 emissions (tonnes)
London-Farnborough	Farnborough-London	131	202
Maastricht-Liege	Liege-Maastricht	113	124
Brussels-Antwerp	Antwerp-Brussels	100	114
Antwerp-Rotterdam	Rotterdam-Antwerp	100	104
Geneva-Sion	Sion-Geneva	89	104
Lille-Ostend	Ostend-Lille	67	78
Zurich-Buochs	Buochs-Zurich	61	68
Berne-Buochs	Buochs-Berne	59	67
Brussels-Liege	Liege-Brussels	59	67
Antwerp-Liege	Liege-Antwerp	54	55

Table 3 shows the most used flight routes and their CO_2 emissions 500 km or less in 2020. The list is quite similar to the list of Table 1, only the last 4 of the top 10 are different. This shows that private aviation is mainly focused on routes that are 500 km or lower.

Table 3 - Most used flight routes under 500 km in 2020, including number and CO_2 emissions

City Pairs	City Pairs2	Number of flights	CO_2 emissions (tonnes)
Paris-Geneva	Geneva-Paris	636	1,180
Paris-London	London-Paris	419	883
Barrow-In-Furness-Bristol	Bristol-Barrow-In-Furness	404	356
Geneva-Nice	Nice-Geneva	396	673
Barrow-In-Furness-Farnborough	Farnborough-Barrow-In-Furness	388	375
Guernsey-Southampton	Southampton-Guernsey	278	208
Geneva-Zurich	Zurich-Geneva	233	421
Geneva-Saint Tropez	Saint Tropez-Geneva	230	310
London-Dublin	Dublin-London	219	448
Rome-Milan	Milan-Rome	214	452

Table 4 shows the airports where the most private flights departed or arrived in 2020. Airports that are known for their high frequencies of business related aviation are high on this list, such as airports in and around London, Swiss airports, Nice, Paris and Milan. Palma de Mallorca Airport, a hotspot for holiday and leisure traffic, closes the top 10 of 2020.

Table 4 - Airports with the most private flights in 2020

Airport ICAO	Airport	Flights
LSGG	Geneva Airport	5,962
LFMN	Nice Côte d'Azur Airport	5,432
LSZH	Zurich Airport	4,500
LFPB	Paris-Le Bourget Airport	3,839
EGLF	Farnborough Airport	2,547
LFPG	Charles de Gaulle Airport (Paris)	2,416
EGGW	London Luton Airport	2,271
EGKB	London Biggin Hill Airport	2,234
LIML	Milan Linate Airport	2,232
LEPA	Palma de Mallorca Airport	2,195

2021

Table 5 shows the most frequently used private aviation routes in 2021, including their CO_2 emissions. There was a large increase of the number of flights for the top 10 frequently flown city pairs, and the CO_2 emissions are also higher. The largest part of the top 10 flight routes are again the very large and business orientated cities, such as Paris, London and Geneva. Airports within regions more focused on tourism are also represented in the top 10, such as Nice Côte d'Azur Airport and Palma de Mallorca Airport. Note that the route between London and Farnborough is in the top 10. The goal of these trips is not clear, but a share of the flights likely are repositioning flights.

Table 5 - Most used flight routes in 2021, including number and CO_2 emissions

City Pairs	City Pairs2	Number of flights	CO_2 emissions (tonnes)
Paris-Geneva	Geneva-Paris	1,945	4,706
Paris-Nice	Nice-Paris	1,488	5,331
Rome-Milan	Milan-Rome	1,473	4,642
Paris-London	London-Paris	1,461	3,757
London-Nice	Nice-London	1,195	6,343
Geneva-Nice	Nice-Geneva	1,020	2,367
Ibiza-Palma de Mallorca[2]	Palma de Mallorca-Ibiza	851	1,029
London-Geneva	Geneva-London	841	3,084
London-Farnborough	Farnborough-London	764	1,488
Riga-Moscow	Moscow-Riga	758	3,532

Table 6 shows the most frequently used private aviation routes under 100 km in 2021. Five of the routes are also mentioned in the table of the most frequented routes under 100 km in 2020 in Table 2, such as Farnborough and London, Brussels and Antwerp, and the route between Geneva and Sion. Flights from or towards London, Antwerp and Rotterdam are well represented within this table of flights under the 100 km. The route between London and Farnborough is by far the most frequently used route under 100 km, which can probably be partly explained by repositioning flights.

Table 6 - Most used flight routes under 100 km in 2021, including number and CO_2 emissions

City Pairs	City Pairs2	Number of flights	CO_2 emissions (tonnes)
London-Farnborough	Farnborough-London	764	1,488
Nice-Cannes	Cannes-Nice	214	274
London-Blackbushe	Blackbushe-London	214	410
Brussels-Antwerp	Antwerp-Brussels	163	184
Geneva-Sion	Sion-Geneva	160	232
Antwerp-Rotterdam	Rotterdam-Antwerp	143	159
London-Northolt	Northolt-London	139	248
Zurich-Basel, Switzerland/Mulhouse	Basel, Switzerland/Mulhouse-Zurich	135	229
Amsterdam-Rotterdam	Rotterdam-Amsterdam	132	173
Guernsey-Jersey	Jersey-Guernsey	114	104

[2] The route between Ibiza and Palma de Mallorca is uncertain, as many BE20 aircraft fly on this route, which could suggest air ambulance services

Table 7 shows the most frequently used private aviation routes under 500 km in 2021 and their CO_2 emissions. The table shows many similarities to Table 5, because a very large share of private aircrafts mainly fly distances between 0 and 500 km. There is a pattern between the routes that show the largest CO_2 emissions, which are mostly routes between London, Paris, Milan, Geneva, Rome and other large cities where there is a lot of business activity.

Table 7 - Most used flight routes under 500 km in 2021, including number and CO_2 emissions

City Pairs	City Pairs2	Number of flights	CO_2 emissions (tonnes)
Geneva-Paris	Paris-Geneva	1,945	4,706
London-Paris	Paris-London	1,461	3,757
Rome-Milan	Milan-Rome	1,301	4,238
Geneva-Nice	Nice-Geneva	1,020	2,367
Palma de Mallorca-Ibiza	Ibiza-Palma de Mallorca	851	1,029
London-Farnborough	Farnborough-London	764	1,488
Barcelona-Madrid	Madrid-Barcelona	688	1,952
Paris-Farnborough	Farnborough-Paris	650	1,725
Barrow-In-Furness-Bristol	Bristol-Barrow-In-Furness	649	571
Barrow-In-Furness-Farnborough	Farnborough-Barrow-In-Furness	578	559

Table 8 shows the airports where the most private flights departed or arrived in 2021. Paris Le Bourget has the highest amount of flights, while in 2020 it had the fourth highest number of private flights. The distribution makes sense compared to the most frequently used flight routes, and are airports that are within or just outside the larger European cities with a lot of business activity.

Table 8 - Airports with the most private flights in 2021

Airport	City	Flights
LFPB	Paris-Le Bourget Airport	21,984
LFMN	Nice Côte d'Azur Airport	19,957
LSGG	Geneva Airport	17,669
LSZH	Zurich Airport	13,177
EGLF	Farnborough Airport	11,495
EGGW	London Luton Airport	11,203
LIML	Milan Linate Airport	11,088
LIRA	Rome Ciampino Airport	10,441
EGKB	London Biggin Hill Airport	9,706
LEPA	Palma de Mallorca Airport	9,493

2022

Table 9 shows the most frequently used private aviation routes in 2022 and their CO_2 emissions. The list shows many similarities to Table 5, which shows the most used private flight routes in 2021. The routes between London, Paris, Nice and Geneva are now the busiest private jet routes. There is not a single flight route with total CO_2 emissions lower than 2,500 tonnes of CO_2 emissions, which can be explained by the larger number of flights per destination compared to previous years, and the relative high amount of jets (also many heavy jets which in general consume more fuel than midsize and light jets) on the routes. London is the most important hub in the private aviation network, followed by Paris, Nice and Geneva.

Table 9 - Most used flight routes in 2022, including number and CO_2 emissions

City Pairs	City Pairs2	Number of flights	CO_2 emissions (tonnes)
Paris-London	London-Paris	3,357	9,629
Nice-London	London-Nice	2,896	15,435
Paris-Geneva	Geneva-Paris	2,745	6,916
Paris-Nice	Nice-Paris	2,311	8,615
Geneva-London	London-Geneva	1,997	8,008
Geneva-Nice	Nice-Geneva	1,671	3,886
Rome-Milan	Milan-Rome	1,667	5,358
Milan-London	London-Milan	1,355	6,235
London-Farnborough	Farnborough-London	1,343	2,692
London-Amsterdam	Amsterdam-London	1,298	3,219

Table 10 shows the most used private flight routes and CO_2 emissions of 100 km or less in 2022. Just like in all the other tables of flights under 100 km, the most frequently used private aviation route is between London and Farnborough. Many routes lower on the list have a low number of CO_2 emissions. This can mainly be explained by the lower amount of flights that are performed on the route, but also by a relatively lower share of (heavy) jets on the smaller routes. The route between London and Oxford for example has a larger share of jets than for example the route between Geneva and Sion, where the PC12 turboprop (Swiss manufactures Pilatus) are more common.

Table 10 - Most used flight routes under 100 km in 2022, including number and CO_2 emissions

City Pairs	City Pairs2	Number of flights	CO_2 emissions (tonnes)
London-Farnborough	Farnborough-London	1,343	2,692
Zurich-Basel, Switzerland/Mulhouse	Basel, Switzerland/Mulhouse-Zurich	268	337
Lille-Kortrijk	Kortrijk-Lille	239	255
Brussels-Antwerp	Antwerp-Brussels	204	243
Guernsey-Jersey	Jersey-Guernsey	199	192
Geneva-Sion	Sion-Geneva	183	283
Zurich-Altenrhein	Altenrhein-Zurich	172	224
Geneva-Chambery	Chambery-Geneva	165	245
London-Oxford	Oxford-London	161	279
Nice-Cannes	Cannes-Nice	159	203

Table 11 shows the most frequently used private flight routes under 500 km in 2022. Many of the cities and routes that are mentioned in Table 9 also appear in this table. The main exceptions are the cities of Amsterdam (traffic would mainly be business), Dublin (traffic would also mainly be business) and the route between Ibiza and Palma de Mallorca (mainly holiday traffic and perhaps entertainment industry related).

Table 11 - Most used flight routes under 500 km in 2022, including number and CO_2 emissions

City Pairs	City Pairs2	Number of flights	CO_2 emissions (tonnes)
Paris-London	London-Paris	3,357	9,629
Paris-Geneva	Geneva-Paris	2,745	6,916
Geneva-Nice	Nice-Geneva	1,671	3,886
Rome-Milan	Milan-Rome	1,522	4,877
Farnborough-London	London-Farnborough	1,343	2,692
Amsterdam-London	London-Amsterdam	1,298	3,219
Dublin-London	London-Dublin	1,260	3,751
Nice-Milan	Milan-Nice	1,159	2,664
Palma de Mallorca-Ibiza	Ibiza-Palma de Mallorca	1,145	1,526
Paris-Farnborough	Farnborough-Paris	1,104	3,138

Table 12 shows the airports where the most private aircrafts departed from and arrived on in 2022. The French cities of Nice and Paris are on top of this list, followed by Geneva, Luton (near London) and Zurich. The list is very similar to the 2021 list in Table 8. The airports are exactly the same, but the order has been switched up.

Table 12 - Airports with the most private flights in 2022

Airport	City	Flights
LFMN	Nice Côte d'Azur Airport	34,710
LFPB	Paris-Le Bourget Airport	33,496
LSGG	Geneva Airport	28,630
EGGW	London Luton Airport	24,359
LSZH	Zurich Airport	22,057
EGLF	Farnborough Airport	20,343
LIML	Milan Linate Airport	18,002
LEPA	Palma de Mallorca Airport	16,015
EGKB	London Biggin Hill Airport	15,026
LIRA	Rome Ciampino Airport	13,639

3.3 Train alternatives of frequently flown routes

The overview in Section 3.2 indicates that a large share of the private flights spans a distance of 500 km or less. Based on Section 3.1, the category of flights between 250 and 500 km is for all researched years the category with the highest amount of flights. This paragraph will take a closer look for train alternatives between frequently flown routes.

Between Paris and Geneva, a route that is in the top 10 of frequently flown private aviation routes, there is a direct train connection that takes around 3 hours and 15 minutes one way. According to Lyria (TGV Lyria, 2023), there are around 8 return services per day on this route.

Between Paris and London, a route that is in the top 10 of frequently flown private aviation routes each year as well, there is a direct train connection that takes around anywhere between 2 hours and 17 minutes to 2 hours and 37 minutes, which will take you from city centre to city centre. There are up to 10 trains each way per day (Eurostar, 2023).

Between Paris and Nice, a route that is in the top 10 of frequently flown private aviation routes each year, the average train trip takes just over 7 hours. A solution could be the SNCF Intercités de Nuit, which is a night train that connects Paris and Nice. It rides every night and takes around 12 hours to complete the voyage between Paris and Nice (Rail.cc, 2023).

Between Rome and Milan, a route that is in the top 10 of frequently flown private aviation routes each year, there is a direct train connection of which the quickest trains take just over 3 hours. The frequency of the trains is very high, with sites saying anywhere between 48 to 72 trains each way per day (Italiarail, 2023) (Trainline, 2023).

Between London and Amsterdam, a route that is within the top 10 of frequently flown private aviation routes in 2022, there is a direct train connection that takes around 4 hours. Approximately 8 trains ride this route per day each way (Eurostar, 2023).

For the routes under 100 km, train alternatives are even more plentiful. A few quick examples are the flight between Maastricht and Liege, which is a 32 minutes train ride. The flight between Brussels and Antwerp can be replaced by a 40 to 50 minutes train ride. The flight between Nice and Cannes could be replaced by a train route of around 30 minutes. The train ride that could replace flights between Amsterdam and Rotterdam would take around 40 minutes. A direct train connection between Geneva and Chambery would take around 1 hour and 19 minutes. A train ride between Zurich and Basel would take around an hour. For the majority of the routes, good alternatives are available, but part of these flights are for repositioning purposes.

Some routes under 100 km are less convenient to switch out for a train ride. For example the route between Lille and Ostend can be replaced by a train ride of about two hours with at least 1 transfer, because a detour over Brussel is needed. Between Geneva and Sion, a relatively large detour around lake Geneva is necessary, which leads to a travel time of around 1 hour 45 minutes to 2 hours.

3.4 CO_2 intensity

The CO_2 intensity is the total CO_2 emissions divided by the number of flights and the distance, so it could be seen as the average CO_2 that would be emitted by the average jet flying 1 km. The small emitters tool uses an increment that compensates for the extra CO_2 emissions of taking off and landing which is equal to an additional 95 km of flying, it is obvious that shorter routes will have a higher CO_2 intensity, because the 95 km increment would hold higher relative weight, and because of the fuel used for take-off. The other variable that plays a role in CO_2 intensity is the type of aircraft that is flown the most on the route, as heavier less efficient jets would emit more CO_2 per kilometre. The ranking is based on how relatively polluting a route is. If the CO_2 intensity is high, it means that the

average CO_2 emissions per flown kilometre on this route are higher than the routes that are lower in this top 10.

Table 13 shows the top 10 most CO_2 intense routes for 2020. Like beforementioned, all routes are relatively short routes. A few of the city pairs are routes that are flown on a reasonably frequent basis, as two out of the ten routes had more than 100 flights in 2020.

Table 13 - Most CO_2 intense routes in Europe in 2020 with 10 or more flights

Route	Route2	Country	Country2	Flights	Distance (km)	CO_2 emissions (tonnes)	CO_2 intensity (kg CO_2/km)
Paris-Toussus-le-Noble	Toussus-le-Noble-Paris	France	France	44	18.52	45.6	56.01
London-Farnborough	Farnborough-London	United Kingdom	United Kingdom	131	31.48	201.5	48.86
Friedrichshafen-Altenrhein	Altenrhein-Friedrichshafen	Germany	Switzerland	15	22.22	15.8	47.50
Nice-Cannes	Cannes-Nice	France	France	35	24.08	37.2	44.15
Munich-Oberpfaffenhofen	Oberpfaffenhofen-Munich	Germany	Germany	32	48.15	61,7	40.01
Saint Tropez-Toulon	Toulon-Saint Tropez	France	France	26	29.63	27.3	35.44
Geneva-Annecy	Annecy-Geneva	Switzerland	France	38	33.34	41.6	32.82
Erfurt-Eisenach	Eisenach-Erfurt	Germany	Germany	87	33.34	93.7	32.30
London-Shoreham By Sea	Shoreham By Sea-London	United Kingdom	United Kingdom	16	37.04	17.5	29.58
Liege-Maastricht	Maastricht-Liege	Belgium	Netherlands	113	37.04	123.7	29.54

Table 14 shows the top 10 routes with the highest CO_2 intensity in 2021. On average, the routes are shorter than in the year 2020, which can be explained by the threshold of 10 or more flights that might be a reason why some of these routes were not included in Table 13. There are two routes in this top 10 with more than 100 flights (of which one has over 200 flights), and one route with just under 100 flights.

Table 14 - Most CO_2 intense routes in Europe in 2021 with 10 or more flights[3]

Route	Route2	Country	Country2	Flights	Distance (km)	CO_2 emissions (tonnes)	CO_2 intensity (kg CO_2/km)
Farnborough-Blackbushe	Blackbushe-Farnborough	United Kingdom	United Kingdom	17	7.41	37.9	300.81
Kortrijk-Mouscron	Mouscron-Kortrijk	Belgium	Belgium	23	9.26	23.7	111.36
Lisbon-Tires	Tires-Lisbon	Portugal	Portugal	97	20.37	189.3	95.82
Oxford-Upper Heyford	Upper Heyford-Oxford	United Kingdom	United Kingdom	39	11.11	40.4	93.12
Oxford-Brize Norton	Brize Norton-Oxford	United Kingdom	United Kingdom	20	20.37	30.8	75.71
Emmen-Buochs	Buochs-Emmen	Switzerland	Switzerland	14	14.82	14.6	70.47
Dusseldorf-Essen	Essen-Dusseldorf	Germany	Germany	17	18.52	17.6	55.77

[3] The route between Stuttgart and Böblingen has been removed due to an inaccuracy in the Cirium dataset. Because Böblingen airport was not put into inactive status after it was closed, some flights that used Stuttgart airport were incorrectly assigned to Böblingen airport.

Nice-Cannes	Cannes-Nice	France	France	214	24.08	273.9	53.16
Le Havre-Deauville	Deauville-Le Havre	France	France	104	20.37	109.4	51.65
Nottingham-Leicestershire	Leicestershire-Nottingham	United Kingdom	United Kingdom	39	20.37	41.0	51.65

Table 15 shows the top 10 highest CO_2 intense routes in 2022. The route distances are comparable to the distances in 2021. Three of the routes have more than 100 flights in 2022, and one of the routes comes very close to 200 flights per year, which is relatively frequent. Also, more routes have a very low frequency (just over the 10 flights per year limit) than in the years prior.

Table 15 - Most CO_2 intense routes in Europe in 2022 with 10 or more flights[4]

Route	Route2	Country	Country2	Flights	Distance (km)	CO_2 emissions (tonnes)	CO_2 intensity (kg CO_2/km)
Farnborough-Blackbushe	Blackbushe-Farnborough	United Kingdom	United Kingdom	13	7.41	23.1	240.23
Lisbon-Tires	Tires-Lisbon	Portugal	Portugal	118	20.37	261.3	108.68
Paris-Villa Coublay	Villa Coublay-Paris	France	France	52	12.96	73.3	108.66
Liverpool-Chester	Chester-Liverpool	United Kingdom	United Kingdom	21	18.52	23.6	60.60
Lille-Mouscron	Mouscron-Lille	France	Belgium	11	18.52	11.5	56.63
Wiesbaden-Frankfurt	Frankfurt-Wiesbaden	Germany	Germany	11	18.52	11.0	53.94
Dusseldorf-Essen	Essen-Dusseldorf	Germany	Germany	15	18.52	14.7	52.99
Nice-Cannes	Cannes-Nice	France	France	159	24.08	202.7	52.96
Nottingham-Leicestershire	Leicestershire-Nottingham	United Kingdom	United Kingdom	198	20.37	208.3	51.65
Friedrichshafen-Altenrhein	Altenrhein-Friedrichshafen	Germany	Switzerland	39	22.22	44.6	51.41

[4] The route between Stuttgart and Böblingen has been removed due to an inaccuracy in the Cirium dataset. Because Böblingen airport was not put into inactive status after it was closed, some flights that used Stuttgart airport were incorrectly assigned to Böblingen airport.

4 Private aviation in European countries

For all countries that are part of the EU27, plus Norway, Switzerland and United Kingdom, tables have been made that show the following details: the total number of flights departing from the country and their CO_2 emissions, the most used airports for private aviation, the most used private aviation routes including the CO_2 emissions, and the shortest private aviation routes which had more than 10 flights for each year, including the number of flights and CO_2 emissions. This has been divided into the years 2020, 2021 and 2022.

4.1 Private aviation in Austria

Private flights departing from Austria have increased from 2,988 flights in 2020 to 15,088 flights in 2022, and the CO_2 emissions have increased from 7,914 tonnes in 2020 to 54,377 tonnes in 2022. The most used airport for private aviation is Vienna International Airport (LOWW), with 5,985 departing flights in 2022. The most used routes for private aviation changes every year, but for 2022 it was the route between Vienna and Nice respectively. The shortest route for private aviation with 10 or more flights per year is between Vienna and Bratislava for all years.

2020

Table 16 - Number of departing private flights and the CO_2 emissions in Austria in 2020

Flights	CO_2 emissions (tonnes)
2,988	7,914

Table 17 - Top three airports of Austria with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LOWW	Vienna International Airport	1,027
LOWS	Salzburg Airport	703
LOWL	Linz Airport	481

Table 18 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Austria in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Vienna-Zurich	Zurich-Vienna	108	249
Vienna-Linz	Linz-Vienna	89	119
Vienna-Salzburg	Salzburg-Vienna	84	129

Table 19 - Shortest private flight routes of Austria (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Vienna-Bratislava	Bratislava-Vienna	48.15	26	28
Graz-Maribor	Maribor-Graz	61.12	37	42
Salzburg-Linz	Linz-Salzburg	101.86	72	76

2021

Table 20 - Number of departing private flights and the CO_2 emissions in Austria in 2021

Flights	CO_2 emissions (tonnes)
7,971	26,480

Table 21 - Top three airports of Austria with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LOWW	Vienna International Airport	3,134
LOWS	Salzburg Airport	2,115
LOWL	Linz Airport	1,040

Table 22 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Austria in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Vienna-Moscow	Moscow-Vienna	342	2,588
Vienna-Salzburg	Salzburg-Vienna	247	393
Vienna-Zurich	Zurich-Vienna	216	637

Table 23 - Shortest private flight routes of Austria (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Vienna-Bratislava	Bratislava-Vienna	48.15	29	38
Graz-Maribor	Maribor-Graz	61.12	42	46
Innsbruck-Bolzano	Bolzano-Innsbruck	88.90	10	12

2022

Table 24 - Number of departing private flights and the CO_2 emissions in Austria in 2022

Flights	CO_2 emissions (tonnes)
15,088	54,377

Table 25 - Top three airports of Austria with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LOWW	Vienna International Airport	5,958
LOWS	Salzburg Airport	3,924
LOWI	Innsbruck Airport	2,163

Table 26 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Austria in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Vienna-Nice	Nice-Vienna	407	1,681
Vienna-London	London-Vienna	388	2,217
Vienna-Zurich	Zurich-Vienna	376	1,162

Table 27 - Shortest private flight routes of Austria (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Vienna-Bratislava	Bratislava-Vienna	48.15	82	114
Graz-Maribor	Maribor-Graz	61.12	47	47
Innsbruck-Bolzano	Bolzano-Innsbruck	88.90	35	39

4.2 Private aviation in Belgium

Private flights departing from Belgium have increased from 2,794 flights in 2020 to 10,618 flights in 2022, and the CO_2 emissions have increased from 6,819 tonnes in 2020 to 40,965 tonnes in 2022. The most used airport for private aviation in 2020 for private aviation is Antwerp International Airport (EBAW) with 928 departing flights. In 2021 and 2022, the most used airport for private aviation is Brussels Airport (EBBR) with 2,500 and 4,346 departing flights respectively. The most used routes in 2020, 2021 and 2022 are between Brussels and Paris, Brussels and London, and Brussels and Geneva, but the order changes every year. In 2022, the route between Brussels and London was the most frequently used route for private aviation. Between 2020-2022, the route between Kortrijk and Mouscron was the shortest route for private aviation (9.26 km) with 10 or more flights in one year.

2020

Table 28 - Number of departing private flights and the CO_2 emissions in Belgium in 2020

Flights	CO_2 emissions (tonnes)
2,794	6,819

Table 29 - Top three airports of Belgium with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EBAW	Antwerp International Airport	928
EBBR	Brussels Airport	755
EBCI	Brussels South Charleroi Airport	616

Table 30 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Belgium in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Brussels-Geneva	Geneva-Brussels	146	294
Brussels-Paris	Paris-Brussels	142	212
Brussels-London	London-Brussels	133	241

Table 31 - Shortest private flight routes of Belgium (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Liege-Maastricht	Maastricht-Liege	37.04	113	124
Ostend-Lille	Lille-Ostend	72.23	67	78
Antwerp-Eindhoven	Eindhoven-Antwerp	72.23	42	54

2021

Table 32 - Number of departing private flights and the CO_2 emissions in Belgium in 2021

Flights	CO_2 emissions (tonnes)
6,963	25,276

Table 33 - Top three airports of Belgium with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EBBR	Brussels Airport	2,500
EBAW	Antwerp International Airport	1,650
EBCI	Brussels South Charleroi Airport	1,107

Table 34 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Belgium in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Brussels-Paris	Paris-Brussels	374	707
Brussels-Geneva	Geneva-Brussels	345	906
Brussels-London	London-Brussels	299	658

Table 35 - Shortest private flight routes of Belgium (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Kortrijk-Mouscron	Mouscron-Kortrijk	9.26	23	24
Kortrijk-Lille	Lille-Kortrijk	27.78	34	36
Liege-Maastricht	Maastricht-Liege	37.04	87	94

2022

Table 36 - Number of departing private flights and the CO_2 emissions in Belgium in 2022

Flights	CO_2 emissions (tonnes)
10,618	40,965

Table 37 - Top three airports of Belgium with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EBBR	Brussels Airport	4,346
EBAW	Antwerp International Airport	2,228
EBCI	Brussels South Charleroi Airport	1,322

Table 38 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Belgium in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Brussels-London	London-Brussels	647	1,603
Brussels-Paris	Paris-Brussels	545	1,140
Brussels-Geneva	Geneva-Brussels	407	1,046

Table 39 - Shortest private flight routes of Belgium (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Mouscron-Lille	Lille-Mouscron	18.52	11	11,536
Kortrijk-Lille	Lille-Kortrijk	27.78	239	254,846
Liege-Maastricht	Maastricht-Liege	37.04	62	71,170

4.3 Private aviation in Bulgaria

Private flights departing from Bulgaria have increased from 416 flights in 2020 to 2,164 flights in 2022, and the CO_2 emissions have increased from 1,164 tonnes in 2020 to 9,895 tonnes in 2022. The most used airport for private aviation is Sofia Airport (LBSF) with 1,604 departing flights in 2022. The most frequently used route for private aviation remains the same route between 2020-2022, which is the route between Sofia and Athens. The route between Bourgas and Varna (79.64 km) is the shortest route for private aviation with 10 or more flights per year for 2020, 2021 and 2022.

2020

Table 40 - Number of departing private flights and the CO_2 emissions in Bulgaria in 2020

Flights	CO_2 emissions (tonnes)
416	1,164

Table 41 - Top three airports of Bulgaria with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LBSF	Sofia Airport	262
LBWN	Varna Airport	63
LBBG	Burgas Airport	41

Table 42 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Bulgaria in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Sofia-Athens	Athens-Sofia	36	52
Sofia-Bucharest	Bucharest-Sofia	36	35
Bourgas-Varna	Varna-Bourgas	28	34

Table 43 - Shortest private flight routes of Bulgaria (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Bourgas-Varna	Varna-Bourgas	79.64	28	34
Sofia-Skopje	Skopje-Sofia	168.53	13	10
Sofia-Bucharest	Bucharest-Sofia	294.47	21	18

2021

Table 44 - Number of departing private flights and the CO_2 emissions in Bulgaria in 2021

Flights	CO_2 emissions (tonnes)
1,485	6,441

Table 45 - Top three airports of Bulgaria with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LBSF	Sofia Airport	1,043
LBWN	Varna Airport	173
LBBG	Burgas Airport	148

Table 46 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Bulgaria in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Sofia-Athens	Athens-Sofia	118	249
Sofia-Istanbul	Istanbul-Sofia	88	267
Sofia-Nice	Nice-Sofia	86	423

Table 47 - Shortest private flight routes of Bulgaria (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Bourgas-Varna	Varna-Bourgas	79.64	31	36
Sofia-Plovdiv	Plovdiv-Sofia	137.05	18	25
Sofia-Gorna Orechovitsa	Gorna Orechovitsa-Sofia	188.90	16	23

2022

Table 48 - Number of departing private flights and the CO_2 emissions in Bulgaria in 2022

Flights	CO_2 emissions (tonnes)
2,164	9,895

Table 49 - Top three airports of Bulgaria with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LBSF	Sofia Airport	1,604
LBWN	Varna Airport	241
LBBG	Burgas Airport	159

Table 50 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Bulgaria in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Sofia-Athens	Athens-Sofia	183	461,631.64
Sofia-Nice	Nice-Sofia	147	648,052.86
Sofia-Belgrade	Belgrade-Sofia	118	239,377.55

Table 51 - Shortest private flight routes of Bulgaria (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Varna-Bourgas	Bourgas-Varna	79.64	37	46
Sofia-Plovdiv	Plovdiv-Sofia	137.05	21	39
Sofia-Skopje	Skopje-Sofia	168.53	13	19

4.4 Private aviation in Croatia

Private flights departing from Croatia have increased from 1,192 flights in 2020 to 5,642 flights in 2022, and the CO_2 emissions have increased from 3,091 tonnes in 2020 to 21,299 tonnes in 2022. The most used airport for private aviation is Zagreb Airport (LDZA) with 1,392 departing flights in 2022. The most frequently used route for private aviation changes every year, but was the route between Zagreb and Vienna in 2022. In 2021 and 2022, the shortest route for private aviation with 10 or more flights per year was the route between Dubrovnik and Tivat (42.60 km) and in 2020, this route was between Pula and Venice (140.75 km)

2020

Table 52 - Number of departing private flights and the CO_2 emissions in Croatia in 2020

Flights	CO_2 emissions (tonnes)
1,192	3,091

Table 53 - Top three airports of Croatia with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LDZA	Zagreb Airport	293
LDSP	Split Airport	217
LDZD	Zadar Airport	210

Table 54 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Croatia in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Zagreb-Verona	Verona-Zagreb	45	83
Zadar-Bratislava	Bratislava-Zadar	44	86
Zadar-Prague	Prague-Zadar	36	75

Table 55 - Shortest private flight routes of Croatia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Pula-Venice	Venice-Pula	140.75	10	9
Zagreb-Pula	Pula-Zagreb	190.76	29	22
Zagreb-Vienna	Vienna-Zagreb	268.54	24	39

2021

Table 56 - Number of departing private flights and the CO_2 emissions in Croatia in 2021

Flights	CO_2 emissions (tonnes)
4,020	13,673

Table 57 - Top three airports of Croatia with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LDZA	Zagreb Airport	805
LDSP	Split Airport	793
LDDU	Dubrovnik Airport	725

Table 58 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Croatia in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Zadar-Budapest	Budapest-Zadar	72	148
Zagreb-Pula	Pula-Zagreb	71	78
Zadar-Bratislava	Bratislava-Zadar	67	133

Table 59 - Shortest private flight routes of Croatia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Dubrovnik-Tivat	Tivat-Dubrovnik	42.60	36	55
Split-Bol	Bol-Split	42.60	12	17
Split-Zadar	Zadar-Split	98.16	43	70

2022

Table 60 - Number of departing private flights and the CO_2 emissions in Croatia in 2022

Flights	CO_2 emissions (tonnes)
5,642	21,299

Table 61 - Top three airports of Croatia with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LDZA	Zagreb Airport	1,392
LDDU	Dubrovnik Airport	1,050
LDSP	Split Airport	999

Table 62 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Croatia in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Zagreb-Vienna	Vienna-Zagreb	191	449
Zadar-Bratislava	Bratislava-Zadar	172	379
Zagreb-Verona	Verona-Zagreb	154	309

Table 63 - Shortest private flight routes of Croatia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Dubrovnik-Tivat	Tivat-Dubrovnik	42.60	23	43
Pula-Portoroz	Portoroz-Pula	68.52	25	31
Split-Zadar	Zadar-Split	98.16	51	86

4.5 Private aviation in Cyprus

Private flights departing from Cyprus have increased from 265 flights in 2020 to 1,777 flights in 2022, and the CO_2 emissions have increased from 2,537 tonnes in 2020 to 13,881 tonnes in 2022. The most used airport for private aviation is Larnaca International Airport (LCLK) with 1,374 departing flights in 2022. The most frequently used route in 2020 and 2021 was the route between Larnaca and Moscow, but in 2022 the most frequently used route for private aviation is between Larnaca and Athens. The shortest route for private aviation with 10 or more flights per year in 2020 was between Larnaca and Rhodes (525.97 km), but in 2021 and 2022 the shortest route is between Paphos and Rhodes (440.78 km).

2020

Table 64 - Number of departing private flights and the CO_2 emissions in Cyprus in 2020

Flights	CO_2 emissions (tonnes)
265	2,537

Table 65 - Top three airports of Cyprus with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LCLK	Larnaca International Airport	197
LCPH	Paphos International Airport	66
LCEN	Ercan International Airport	2

Table 66 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Cyprus in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Larnaca-Moscow	Moscow-Larnaca	85	920
Paphos-Moscow	Moscow-Paphos	33	353
Larnaca-Athens	Athens-Larnaca	28	138

Table 67 - Shortest private flight routes of Cyprus (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Larnaca-Rhodes	Rhodes-Larnaca	525.97	13	47
Larnaca-Mykonos	Mykonos-Larnaca	794.51	14	120
Larnaca-Athens	Athens-Larnaca	929.70	28	138

2021

Table 68 - Number of departing private flights and the CO_2 emissions in Cyprus in 2021

Flights	CO_2 emissions (tonnes)
1,679	13,673

Table 69 - Top three airports of Cyprus with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LCLK	Larnaca International Airport	1,270
LCPH	Paphos International Airport	398
LCEN	Ercan International Airport	8

Table 70 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Cyprus in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Larnaca-Moscow	Moscow-Larnaca	474	4,881
Larnaca-Athens	Athens-Larnaca	236	1,099
Larnaca-Kiev	Kiev-Larnaca	118	849

Table 71 - Shortest private flight routes of Cyprus (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Paphos-Rhodes	Rhodes-Paphos	440.78	19	450
Larnaca-Rhodes	Rhodes-Larnaca	525.97	99	325
Paphos-Mykonos	Mykonos-Paphos	709.32	27	130

2022

Table 72 - Number of departing private flights and the CO_2 emissions in Cyprus in 2022

Flights	CO_2 emissions (tonnes)
1,777	13,881

Table 73 - Top three airports of Cyprus with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LCLK	Larnaca International Airport	1,374
LCPH	Paphos International Airport	380
LCRA	RAF Akrotiri	14

Table 74 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Cyprus in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Larnaca-Athens	Athens-Larnaca	303	1,424
Larnaca-Rhodes	Rhodes-Larnaca	176	530
Larnaca-London	London-Larnaca	163	2,413

Table 75 - Shortest private flight routes of Cyprus (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions
Paphos-Rhodes	Rhodes-Paphos	440.78	46	137
Larnaca-Rhodes	Rhodes-Larnaca	525.97	176	530
Larnaca-Kos	Kos-Larnaca	625.98	15	50

4.6 Private aviation in Czech Republic

Private flights departing from Czech Republic have increased from 1,481 flights in 2020 to 7,438 flights in 2022, and the CO_2 emissions have increased from 3,516 tonnes in 2020 to 30,920 tonnes in 2022. The most used airport for private aviation is Václav Havel Airport Prague (LKPR) with 5,424 departing flights in 2022. The most frequently used route for private aviation in 2020 and 2021 was the route between Prague and Ostrava, but in 2022 the most frequently used route is between Prague and Bratislava. The shortest route for private aviation with 10 or more flights per year in 2020 was between Prague and Karlovy Vary (96.30 km), but in 2021 and 2022 the shortest route is between Brno and Uherske Hradiste (55.56 km).

2020

Table 76 - Number of departing private flights and the CO_2 emissions in Czech Republic in 2020

Flights	CO_2 emissions (tonnes)
1,481	3,516

Table 77 - Top three airports of Czech Republic with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LKPR	Prague Airport	861
LKMT	Ostrava Airport	237
LKTB	Brno-Tuřany Airport	173

Table 78 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Czech Republic in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Prague-Ostrava	Ostrava-Prague	149	236
Prague-Bratislava	Bratislava-Prague	106	171
Prague-Brno	Brno-Prague	83	123

Table 79 - Shortest private flight routes of Czech Republic (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Prague-Karlovy Vary	Karlovy Vary-Prague	96.30	27	30
Prague-Pardubice	Pardubice-Prague	105.56	45	48
Brno-Bratislava	Bratislava-Brno	114.82	21	26

2021

Table 80 - Number of departing private flights and the CO_2 emissions in Czech Republic in 2021

Flights	CO_2 emissions (tonnes)
4,684	14,224

Table 81 - Top three airports of Czech Republic with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LKPR	Prague Airport	3,214
LKMT	Ostrava Airport	580
LKTB	Brno-Tuřany Airport	465

Table 82 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Czech Republic in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Prague-Ostrava	Ostrava-Prague	268	411
Prague-Bratislava	Bratislava-Prague	266	439
Prague-Vienna	Vienna-Prague	200	343

Table 83 - Shortest private flight routes of Czech Republic (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Brno-Uherske Hradiste	Uherske Hradiste-Brno	55.56	14	14
Prague-Karlovy Vary	Karlovy Vary-Prague	96.30	50	56
Prague-Pardubice	Pardubice-Prague	105.56	58	66

2022

Table 84 - Number of departing private flights and the CO_2 emissions in Czech Republic in 2022

Flights	CO_2 emissions (tonnes)
7,438	30,920

Table 85 - Top three airports of Czech Republic with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LKPR	Prague Airport	5,424
LKMT	Ostrava Airport	801
LKTB	Brno-Tuřany Airport	680

Table 86 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Czech Republic in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Prague-Bratislava	Bratislava-Prague	572	1,247
Prague-London	London-Prague	436	2,053
Prague-Ostrava	Ostrava-Prague	340	612

Table 87 - Shortest private flight routes of Czech Republic (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Brno-Uherske Hradiste	Uherske Hradiste-Brno	55.56	29	30
Prague-Karlovy Vary	Karlovy Vary-Prague	96.30	96	107
Prague-Pardubice	Pardubice-Prague	105.56	79	158

4.7 Private aviation in Denmark

Private flights departing from Denmark have increased from 1,400 flights in 2020 to 5,898 flights in 2022, and the CO_2 emissions have increased from 3,117 tonnes in 2020 to 24,888 tonnes in 2022. The most used airport for private aviation is Roskilde Airport (EKRK) with 1,573 departing flights in 2022. The most frequently used route for private aviation in 2020 and 2021 was the route between Aalborg and Copenhagen, but in 2022 the most frequently used route is between Copenhagen and London. The shortest route for private aviation with 10 or more flights changes every year, but for 2022 it was the route between Copenhagen and Malmo (77.78 km).

2020

Table 88 - Number of departing private flights and the CO_2 emissions in Denmark in 2020

Flights	CO_2 emissions (tonnes)
1,400	3,117

Table 89 - Top three airports of Denmark with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EKRK	Copenhagen Roskilde Airport	421
EKYT	Aalborg Airport	203
EKBI	Billund Airport	177

Table 90 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Denmark in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Aalborg-Copenhagen	Copenhagen-Aalborg	96	134
Aalborg-Bremen	Bremen-Aalborg	65	119
Copenhagen-London	London-Copenhagen	49	158

Table 91 - Shortest private flight routes of Denmark (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Sonderborg-Odense	Odense-Sonderborg	66.67	27	30
Copenhagen-Malmo	Malmo-Copenhagen	77.78	13	12
Aarhus-Billund	Billund-Aarhus	111.12	12	13

2021

Table 92 - Number of departing private flights and the CO_2 emissions in Denmark in 2021

Flights	CO_2 emissions (tonnes)
3,553	12,773

Table 93 - Top three airports of Denmark with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EKRK	Copenhagen Roskilde Airport	1,064
EKCH	Copenhagen Kastrup Airport	694
EKBI	Billund Airport	542

Table 94 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Denmark in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Copenhagen-Aalborg	Aalborg-Copenhagen	217	355
Copenhagen-London	London-Copenhagen	158	605
Copenhagen-Billund	Billund-Copenhagen	126	230

Table 95 - Shortest private flight routes of Denmark (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Esbjerg-Billund	Billund-Esbjerg	44.45	12	12
Odense-Sonderborg	Sonderborg-Odense	66.67	20	22
Copenhagen-Malmo	Malmo-Copenhagen	77.78	23	23

2022

Table 96 - Number of departing private flights and the CO_2 emissions in Denmark in 2022

Flights	CO_2 emissions (tonnes)
5,898	24,888

Table 97 - Top three airports of Denmark with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EKRK	Copenhagen Roskilde Airport	1,573
EKCH	Copenhagen Kastrup Airport	1,354
EKBI	Billund Airport	1,049

Table 98 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Denmark in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Copenhagen-London	London-Copenhagen	356	1,568
Copenhagen-Stockholm	Stockholm-Copenhagen	294	902
Copenhagen-Billund	Billund-Copenhagen	219	468

Table 99 - Shortest private flight routes of Denmark (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Copenhagen-Malmo	Malmo-Copenhagen	77.78	41	46
Odense-Billund	Billund-Odense	79.64	20	34
Odense-Aarhus	Aarhus-Odense	94.45	12	14

4.8 Private aviation in Estonia

Private flights departing from Estonia have increased from 246 flights in 2020 to 983 flights in 2022, and the CO_2 emissions have increased from 521 tonnes in 2020 to 4,869 tonnes in 2022. The most used airport for private aviation is Tallinn Airport (EETN) with 870 departing flights in 2022. The most frequently used route for private aviation and the shortest route used for private aviation (with 10 or more flights per year) is the route between Tallinn and Helsinki for all years, which spans a distance of 100.01 km.

2020

Table 100 - Number of departing private flights and the CO_2 emissions in Estonia in 2020

Flights	CO_2 emissions (tonnes)
246	521

Table 101 - Top three airports of Estonia with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EETN	Tallinn Airport	233
EETU	Tartu Airport	6
EEKA	Kärdla Airport	3

Table 102 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Estonia in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Tallinn-Helsinki	Helsinki-Tallinn	195	143
Tallinn-Stockholm	Stockholm-Tallinn	92	159
Tallinn-Moscow	Moscow-Tallinn	18	77

Table 103 - Shortest private flight routes of Estonia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Tallinn-Helsinki	Helsinki-Tallinn	100.01	195	143
Tallinn-Stockholm	Stockholm-Tallinn	387.07	92	159
Tallinn-Moscow[5]	Moscow-Tallinn	855.62	13	61

[5] The difference between this route and the route in Table 102 can be explained by the fact that Moscow has multiple airports, and this route represents only one of these airports that leads to the shortest route possible.

2021

Table 104 - Number of departing private flights and the CO_2 emissions in Estonia in 2021

Flights	CO_2 emissions (tonnes)
762	2,855

Table 105 - Top three airports of Estonia with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EETN	Tallinn Airport	707
EETU	Tartu Airport	34
EEKE	Kuressaare Airport	6

Table 106 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Estonia in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Tallinn-Helsinki	Helsinki-Tallinn	391	370
Tallinn-Moscow	Moscow-Tallinn	150	614
Tallinn-Saint Petersburg	Saint Petersburg-Tallinn	122	301

Table 107 - Shortest private flight routes of Estonia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Tallinn-Helsinki	Helsinki-Tallinn	100.01	386	364
Tallinn-Tartu	Tartu-Tallinn	164.83	16	21
Tallinn-Tampere	Tampere-Tallinn	231.50	10	15

2022

Table 108 - Number of departing private flights and the CO_2 emissions in Estonia in 2022

Flights	CO_2 emissions (tonnes)
983	4,869

Table 109 - Top three airports of Estonia with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EETN	Tallinn Airport	870
EETU	Tartu Airport	71
EEKE	Kuressaare Airport	17

Table 110 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Estonia in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Tallinn-Helsinki	Helsinki-Tallinn	221	257
Tallinn-London	London-Tallinn	76	514
Tallinn-Stockholm	Stockholm-Tallinn	70	157

Table 111 - Shortest private flight routes of Estonia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Tallinn-Helsinki	Helsinki-Tallinn	100.01	220	256
Tallinn-Parnu	Parnu-Tallinn	112.97	12	14
Tallinn-Hyvinkaa	Hyvinkaa-Tallinn	137.05	10	13

4.9 Private aviation in Finland[6]

Private flights departing from Finland have increased from 2,758 flights in 2020 to 6,104 flights in 2022, and the CO_2 emissions have increased from 521 tonnes in 2020 to 19,535 tonnes in 2022. The most used airport for private aviation is Helsinki-Vantaa Airport (EFHK) with 1,749 departing flights in 2022. The most frequently used route for private aviation in in all years was the route between Helsinki and Jyvaskyla, with 501 flights in 2022. The shortest route used for private aviation (with 10 or more flights per year) in 2021 and 2022 was the route between Tampere and Kuorevesi (62.97 km).

2020

Table 112 - Number of departing private flights and the CO_2 emissions in Finland in 2020

Flights	CO_2 emissions (tonnes)
2,758	521

Table 113 - Top three airports of Finland with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EFHK	Helsinki Airport	256
EFPO	Pori Airport	57
EFTU	Turku Airport	39

Table 114 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Finland in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Helsinki-Jyvaskyla	Jyvaskyla-Helsinki	457	667
Jyvaskyla-Rovaniemi	Rovaniemi-Jyvaskyla	323	610
Jyvaskyla-Tampere	Tampere-Jyvaskyla	267	348

Table 115 - Shortest private flight routes of Finland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Pori-Tampere	Tampere-Pori	96.30	19	24
Helsinki-Tallinn	Tallinn-Helsinki	100.01	195	143
Pori-Turku	Turku-Pori	109.27	15	20

[6] In 2020, 2021 and 2022, the shares of military/governmental flights for Finland were around 71%, 48% and 45% respectively. We have decided to keep these flights in the dataset, as these flights are more substitutable than for example medical/special flights.

2021

Table 116 - Number of departing private flights and the CO_2 emissions in Finland in 2021

Flights	CO_2 emissions (tonnes)
4,669	12,175

Table 117 - Top three airports of Finland with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EFHK	Helsinki Airport	1,055
EFTU	Turku Airport	110
EFRO	Rovaniemi Airport	90

Table 118 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Finland in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Helsinki-Jyvaskyla	Jyvaskyla-Helsinki	478	695
Helsinki-Tallinn	Tallinn-Helsinki	391	370
Tampere-Jyvaskyla	Jyvaskyla-Tampere	351	459

Table 119 - Shortest private flight routes of Finland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Tampere-Kuorevesi	Kuorevesi-Tampere	62.97	20	22,655.45
Kouvola-Lappeenranta	Lappeenranta-Kouvola	68.52	52	59,450.50
Tampere-Pori	Pori-Tampere	96.30	24	29,194.43

2022

Table 120 - Number of departing private flights and the CO_2 emissions in Finland in 2022

Flights	CO_2 emissions (tonnes)
6,104	19,535

Table 121 - Top three airports of Finland with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EFHK	Helsinki Airport	1,749
EFTP	Tampere-Pirkkala Airport	237
EFRO	Rovaniemi Airport	200

Table 122 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Finland in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Helsinki-Jyvaskyla	Jyvaskyla-Helsinki	501	730
Tampere-Jyvaskyla	Jyvaskyla-Tampere	464	597
Helsinki-Stockholm	Stockholm-Helsinki	389	999

Table 123 - Shortest private flight routes of Finland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Tampere-Kuorevesi	Kuorevesi-Tampere	62.97	33	36
Kouvola-Lappeenranta	Lappeenranta-Kouvola	68.52	15	16
Tampere-Pori	Pori-Tampere	96.30	16	19

4.10 Private aviation in France

Private flights departing from France have increased from 18,451 flights in 2020 to 84,885 flights in 2022, and the CO_2 emissions have increased from 47,502 tonnes in 2020 to 383,061 tonnes in 2022. The most used airport for private aviation in 2020 was Nice Côte d'Azur Airport (LFMN) with 2,743 departing flights in 2020. In 2021 and 2022, Paris-Le Bourget Airport (LFPB) was the most used airport with 11,600 and 19,027 private flights in 2021 and 2022 respectively. The most frequently used route for private aviation in 2020 and 2021 was the route between Paris and Geneva, and in 2022 the most private aviation route was between Paris and London. The shortest route used for private aviation with 10 or more flights per year differed for each year, but for 2022 it was the route between Paris and Villa Coublay (12.96 km). Another short route that is often flown every year is the route between Nice and Cannes (24.08 km).

2020

Table 124 - Number of departing private flights and the CO_2 emissions in France in 2020

Flights	CO_2 emissions (tonnes)
18,451	47,502

Table 125 - Top three airports of France with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LFMN	Nice Côte d'Azur Airport	2,743
LFPB	Paris-Le Bourget Airport	2,077
LFPG	Charles de Gaulle Airport	1,169

Table 126 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in France in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Paris-Geneva	Geneva-Paris	636	1,180
Paris-London	London-Paris	419	883
Nice-Geneva	Geneva-Nice	396	673

Table 127 - Shortest private flight routes of France (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Paris-Toussus-le-Noble	Toussur-le-Noble-Paris	18.52	10	10
Nice-Cannes	Cannes-Nice	24.08	35	37
Saint Tropez-Toulon	Toulon-Saint Tropez	29.63	26	27

2021

Table 128 - Number of departing private flights and the CO_2 emissions in France in 2021

Flights	CO_2 emissions (tonnes)
54,742	198,689

Table 129 - Top three airports of France with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LFPB	Paris-Le Bourget Airport	11,600
LFMN	Nice Côte d'Azur Airport	9,842
LFMD	Cannes Mandelieu Airport	3,134

Table 130 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in France in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Paris-Geneva	Geneva-Paris	1,945	4,706
Paris-Nice	Nice-Paris	1,488	5,331
Paris-London	London-Paris	1,461	3,757

Table 131 - Shortest private flight routes of France (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Le Havre-Deauville	Deauville-Le Havre	20.37	104	109
Cannes-Nice	Nice-Cannes	24.08	214	274
Lille-Kortrijk	Kortrijk-Lille	27.78	34	36

2022

Table 132 - Number of departing private flights and the CO_2 emissions in France in 2022

Flights	CO_2 emissions (tonnes)
84,885	383,061

Table 133 - Top three airports of France with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LFPB	Paris-Le Bourget Airport	19,027
LFMN	Nice Côte d'Azur Airport	16,873
LFMD	Cannes Mandelieu Airport	3,760

Table 134 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in France in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Paris-London	London-Paris	3,357	9,629
Nice-London	London-Nice	2,896	15,435
Paris-Geneva	Geneva-Paris	2,745	6,916

Table 135 - Shortest private flight routes of France (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Paris-Villa Coublay	Villa Coublay-Paris	12.96	23	38
Lille-Mouscron	Mouscron-Lille	18.52	11	12
Nice-Cannes	Cannes-Nice	24.08	157	200

4.11 Private aviation in Germany

Private flights departing from Germany have increased from 12,765 flights in 2020 to 58,424 flights in 2022, and the CO_2 emissions have increased from 29,725 tonnes in 2020 to 208,645 tonnes in 2022. The most used airport for private aviation in 2020 was Hamburg Airport (EDDH) with 959 departing flights in 2020. In 2021 and 2022, Berlin Brandenburg Airport (EDDB) was the most used airport with 3,225 and 6,526 private flights in 2021 and 2022 respectively. The most frequently used route for private aviation differed for each year, but in 2022, the route between Berlin and Cologne was the most flown route by private aircrafts, with 784 flights. The shortest private aviation route with more than 10 flights per year for 2020 and 2022 is the route between Friedrichshafen and Altenrhein (22.22 km).

2020

Table 136 - Number of departing private flights and the CO_2 emissions in Germany in 2020

Flights	CO_2 emissions (tonnes)
12,765	29,725

Table 137 - Top three airports of Germany with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EDDH	Hamburg Airport	959
EDDW	Bremen Airport	937
EDDL	Düsseldorf Airport	783

Table 138 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Germany in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Bremen-Erfurt	Erfurt-Bremen	401	597
Dusseldorf-Hamburg	Hamburg-Dusseldorf	156	266
Dusseldorf-London	London-Dusseldorf	136	263

Table 139 - Shortest private flight routes of Germany (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Friedrichshafen-Altenrhein	Altenrhein-Friedrichshafen	22.22	15	16
Erfurt-Eisenach	Eisenach-Erfurt	33.34	87	94
Munich-Oberpfaffenhofen	Oberpfaffenhofen-Munich	48.15	32	62

2021

Table 140 - Number of departing private flights and the CO_2 emissions in Germany in 2021

Flights	CO_2 emissions (tonnes)
33,252	108,976

Table 141 - Top three airports of Germany with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EDDB	Berlin Brandenburg Airport	3,225
EDDM	Munich Airport	3,037
EDDH	Hamburg Airport	2,324

Table 142 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Germany in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Stuttgart-Braunschweig	Braunschweig-Stuttgart	300	861
Berlin-London	London-Berlin	278	1,086
Berlin-Zurich	Zurich-Berlin	262	969

Table 143 - Shortest private flight routes of Germany (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021[7]

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Norderney-Juist	Juist-Norderney	11.11	115	119
Baltrum-Juist	Juist-Baltrum	22.22	35	37
Friedrichshafen-Altenrhein	Altenrhein-Friedrichshafen	22.22	18	18

2022

Table 144 - Number of departing private flights and the CO_2 emissions in Germany in 2022

Flights	CO_2 emissions (tonnes)
58,424	208,646

Table 145 - Top three airports of Germany with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EDDB	Berlin Brandenburg Airport	6,526
EDDM	Munich Airport	5,753
EDDH	Hamburg Airport	4,302

[7] The route between Stuttgart and Böblingen has been removed due to an inaccuracy in the Cirium dataset. Because Böblingen airport was not put into inactive status after it was closed, some flights that used Stuttgart airport were incorrectly assigned to Böblingen airport.

Table 146 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Germany in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Berlin-Cologne	Cologne-Berlin	784	3,703
Berlin-London	London-Berlin	680	3,358
Munich-London	London-Munich	500	2,299

Table 147 - Shortest private flight routes of Germany (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022[8]

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Friedrichshafen-Altenrhein	Altenrhein-Friedrichshafen	22.22	39	45
Oberpfaffenhofen-Augsburg	Augsburg-Oberpfaffenhofen	46.30	21	24
Munich-Oberpfaffenhofen	Oberpfaffenhofen-Munich	48.15	133	210

4.12 Private aviation in Greece

Private flights departing from Greece have increased from 1,062 flights in 2020 to 14,283 flights in 2022, and the CO_2 emissions have increased from 5,750 tonnes in 2020 to 88,644 tonnes in 2022. The most used airport for private aviation is Athens International Airport (LGAV) with 5,631 departing flights in 2022. The most frequently used route for private aviation in 2020 was the route between Athens and London, and in 2021 and 2022 the most used route for private aviation was between Athens and Mykonos. The shortest used route for private aviation with 10 flights or more per year changes every year, but in 2022 it was the route between Mykonos and Syros Island (35.19 km).

2020

Table 148 - Number of departing private flights and the CO_2 emissions in Greece in 2020

Flights	CO_2 emissions (tonnes)
1,062	5,750

Table 149 - Top three airports of Greece with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LGAV	Athens International Airport	376
LGMK	Mykonos Airport	118
LGIR	Heraklion International Airport	114

Table 150 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Greece in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Athens-London	London-Athens	45	456
Athens-Geneva	Geneva-Athens	37	203

[8] The route between Stuttgart and Böblingen has been removed due to an inaccuracy in the Cirium dataset. Because Böblingen airport was not put into inactive status after it was closed, some flights that used Stuttgart airport were incorrectly assigned to Böblingen airport.

Athens-Sofia	Sofia-Athens	36	52

Table 151 - Shortest private flight routes of Greece (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Athens-Mykonos	Mykonos-Athens	135.20	28	58
Athens-Kerkyra	Kerkyra-Athens	396.33	13	27
Kerkyra-Sofia	Sofia-Kerkyra	450.04	20	23

2021

Table 152 - Number of departing private flights and the CO_2 emissions in Greece in 2021

Flights	CO_2 emissions (tonnes)
8,619	52,351

Table 153 - Top three airports of Greece with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LGAV	Athens International Airport	3,228
LGMK	Mykonos Airport	1,089
LGTS	Thessaloniki Airport	761

Table 154 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Greece in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Mykonos-Athens	Athens-Mykonos	250	544
Moscow-Thessaloniki	Thessaloniki-Moscow	244	2,241
Larnaca-Athens	Athens-Larnaca	236	1,099

Table 155 - Shortest private flight routes of Greece (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Rhodes-Dalaman	Dalaman-Rhodes	72.23	49	86
Kos-Bodrum	Bodrum-Kos	72.23	22	35
Samos-Bodrum	Bodrum-Samos	83.34	10	15

2022

Table 156 - Number of departing private flights and the CO_2 emissions in Greece in 2022

Flights	CO_2 emissions (tonnes)
14,283	88,644

Table 157 - Top three airports of Greece with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LGAV	Athens International Airport	5,631

LGMK	Mykonos Airport	2,104
LGKR	Corfu International Airport	1,002

Table 158 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Greece in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Athens-Mykonos	Mykonos-Athens	592	1,176
Athens-London	London-Athens	499	5,602
Athens-Geneva	Geneva-Athens	358	2,761

Table 159 - Shortest private flight routes of Greece (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Mykonos-Syros Island	Syros Island-Mykonos	35.19	11	12
Paros-Syros Island	Syros Island-Paros	42.60	16	18
Naxos, Cyclades Islands-Syros Island	Syros Island-Naxos, Cyclades Islands	51.86	16	18

4.13 Private aviation in Hungary

Private flights departing from Hungary have increased from 301 flights in 2020 to 3,306 flights in 2022, and the CO_2 emissions have increased from 1,259 tonnes in 2020 to 16,052 tonnes in 2022. The most used airport for private aviation is Budapest Ferenc Liszt International Airport (LHBP) with 3,084 departing flights in 2022. The most frequently used route for private aviation in 2020 was the route between Budapest and Prague. In 2021 and 2022, the most used route for private aviation was between Budapest and London.
The shortest used route for private aviation with 10 flights or more per year changes every year, but in 2022 it was the route between Sarmellek and Vienna (164.83 km).

2020

Table 160 - Number of departing private flights and the CO_2 emissions in Hungary in 2020

Flights	CO_2 emissions (tonnes)
301	1,259

Table 161 - Top three airports of Hungary with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LHBP	Budapest Airport	266
LHSM	Hévíz-Balaton Airport	19
LHDC	Debrecen International Airport	13

Table 162 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Hungary in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Budapest-Prague	Prague-Budapest	39	79

Budapest-Belgrade	Belgrade-Budapest	19	22
Budapest-London	London-Budapest	19	117

Table 163 - Shortest private flight routes of Hungary (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Budapest-Vienna	Vienna-Budapest	214.83	11	15
Budapest-Belgrade	Belgrade-Budapest	301.88	19	22
Budapest-Rzeszow	Rzeszow-Budapest	361.14	11	11

2021

Table 164 - Number of departing private flights and the CO_2 emissions in Hungary in 2021

Flights	CO_2 emissions (tonnes)
2,001	9,824

Table 165 - Top three airports of Hungary with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LHBP	Budapest Airport	1,819
LHSM	Hévíz-Balaton Airport	85
LHDC	Debrecen International Airport	75

Table 166 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Hungary in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Budapest-London	London-Budapest	228	1,458
Budapest-Prague	Prague-Budapest	137	283
Budapest-Moscow	Moscow-Budapest	102	682

Table 167 - Shortest private flight routes of Hungary (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Budapest-Sarmellek	Sarmellek-Budapest	172.24	11	16
Budapest-Bratislava	Bratislava-Budapest	174.09	22	34
Budapest-Debrecen	Debrecen-Budapest	175.94	14	29

2022

Table 168 - Number of departing private flights and the CO_2 emissions in Hungary in 2022

Flights	CO_2 emissions (tonnes)
3,306	16,052

Table 169 - Top three airports of Hungary with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights

LHBP	Budapest Airport	3,084
LHDC	Debrecen International Airport	97
LHSM	Hévíz-Balaton Airport	95

Table 170 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Hungary in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Budapest-London	London-Budapest	238	1,445
Budapest-Nice	Nice-Budapest	185	822
Budapest-Prague	Prague-Budapest	185	470

Table 171 - Shortest private flight routes of Hungary (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Sarmellek-Vienna	Vienna-Sarmellek	164.83	12	16
Budapest-Bratislava	Bratislava-Budapest	174.09	75	139
Budapest-Debrecen	Debrecen-Budapest	175.94	24	56

4.14 Private aviation in Ireland

Private flights departing from Ireland have increased from 858 flights in 2020 to 6,671 flights in 2022, and the CO_2 emissions have increased from 3,072 tonnes in 2020 to 67,903 tonnes in 2022. The most used airport for private aviation is Dublin Airport (EIDW) with 3,445 departing flights in 2022. The most frequently used route for private aviation in all years was the route between Dublin and London. The shortest used route for private aviation with 10 flights or more per year changes every year, but in 2022 it was the route between Kerry County and Shannon (70.38 km).

2020

Table 172 - Number of departing private flights and the CO_2 emissions in Ireland in 2020

Flights	CO_2 emissions (tonnes)
858	3,072

Table 173 - Top three airports of Ireland with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EIDW	Dublin Airport	491
EINN	Shannon Airport	97
EICK	Cork Airport	90

Table 174 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Ireland in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Dublin-London	London-Dublin	219	448
Kerry County-London	London-Kerry County	87	191
Dublin-Cork	Cork-Dublin	55	80

Table 175 - Shortest private flight routes of Ireland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Kerry County-Cork	Cork-Kerry County	79.64	11	13
Dublin-Isle Of Man	Isle Of Man-Dublin	129.64	11	13
Dublin-Belfast	Belfast-Dublin	137.05	14	17

2021

Table 176 - Number of departing private flights and the CO_2 emissions in Ireland in 2021

Flights	CO_2 emissions (tonnes)
2,578	19,646

Table 177 - Top three airports of Ireland with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EIDW	Dublin Airport	1,601
EINN	Shannon Airport	504
EIKY	Kerry Airport	177

Table 178 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Ireland in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Dublin-London	London-Dublin	538	1,381
Dublin-Farnborough	Farnborough-Dublin	256	705
Kerry County-London	London-Kerry County	101	240

Table 179 - Shortest private flight routes of Ireland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Dublin-Isle Of Man	Isle Of Man-Dublin	129.64	14	13
Dublin-Belfast	Belfast-Dublin	137.05	19	35
Waterford-Haverfordwest	Haverfordwest-Waterford	151.86	13	8

2022

Table 180 - Number of departing private flights and the CO_2 emissions in Ireland in 2022

Flights	CO_2 emissions (tonnes)
6,671	67,903

Table 181 - Top three airports of Ireland with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EIDW	Dublin Airport	3,445
EINN	Shannon Airport	2,015

EICK	Cork Airport	475

Table 182 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Ireland in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Dublin-London	London-Dublin	1,260	3,751
Dublin-Farnborough	Farnborough-Dublin	367	1,098
Paris-Dublin	Dublin-Paris	244	963

Table 183 - Shortest private flight routes of Ireland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Kerry County-Shannon	Shannon-Kerry County	70.38	19	42
Kerry County-Cork	Cork-Kerry County	79.64	11	20
Cork-Shannon	Shannon-Cork	98.16	12	20

4.15 Private aviation in Italy

Private flights departing from Italy have increased from 8,576 flights in 2020 to 55,624 flights in 2022, and the CO_2 emissions have increased from 21,300 tonnes in 2020 to 266,089 tonnes in 2022. The most used airport for private aviation for all years is Milan Linate Airport (LIML) with 8,397 departing flights in 2022. The most frequently used route for private aviation in all years was the route between Milan and Rome. The shortest used route for private aviation with 10 flights or more per year in 2020 was the route between Milan and Lugano (66.67 km), and in 2021 and 2022, the most frequently used private aviation route was between Verona and Brescia (44.45 km).

2020

Table 184 - Number of departing private flights and the CO_2 emissions in Italy in 2020

Flights	CO_2 emissions (tonnes)
8,576	21,300

Table 185 - Top three airports of Italy with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LIML	Linate Airport	1,108
LIRA	Rome Ciampino Airport	1,072
LIEO	Olbia Costa Smeralda Airport	790

Table 186 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Italy in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Milan-Rome	Rome-Milan	286	578
Milan-Olbia	Olbia-Milan	225	442
Milan-London	London-Milan	180	585

Table 187 - Shortest private flight routes of Italy (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Milan-Lugano	Lugano-Milan	66.67	14	9
Olbia-Figari	Figari-Olbia	74.08	23	25
Milan-Brescia	Brescia-Milan	81.49	23	16

2021

Table 188 - Number of departing private flights and the CO_2 emissions in Italy in 2021

Flights	CO_2 emissions (tonnes)
34,500	133,011

Table 189 - Top three airports of Italy with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LIML	Linate Airport	5,459
LIRA	Rome Ciampino Airport	5,234
LIEO	Olbia Costa Smeralda Airport	2,758

Table 190 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Italy in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Milan-Rome	Rome-Milan	1,473	4,642
Milan-Paris	Paris-Milan	667	2,081
Olbia-Milan	Milan-Olbia	640	1,647

Table 191 - Shortest private flight routes of Italy (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Verona-Brescia	Brescia-Verona	44.45	18	20
Milan-Brescia	Brescia-Milan	55.56	13	14
Florence-Pisa	Pisa-Florence	64.82	34	57

2022

Table 192 - Number of departing private flights and the CO_2 emissions in Italy in 2022

Flights	CO_2 emissions (tonnes)
55,624	266,089

Table 193 - Top three airports of Italy with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LIML	Linate Airport	8,397
LIRA	Rome Ciampino Airport	6,835
LIEO	Olbia Costa Smeralda Airport	4,933

Table 194 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Italy in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Rome-Milan	Milan-Rome	1,667	5,358
Milan-London	London-Milan	1,355	6,235
Milan-Nice	Nice-Milan	1,159	2,664

Table 195 - Shortest private flight routes of Italy (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Verona-Brescia	Brescia-Verona	44.45	16	25
Brindisi-Taranto	Taranto-Brindisi	48.15	18	29
Milan-Brescia	Brescia-Milan	55.56	19	21

4.16 Private aviation in Latvia

Private flights departing from Latvia have increased from 345 flights in 2020 to 1,220 in 2021, and then decreased to 997 flights in 2022, and the CO_2 emissions have increased from 1,565 tonnes in 2020 to 7,950 tonnes in 2021, and decreased to 6,320 tonnes in 2022. The most used airport for private aviation is Riga International Airport (EVRA) with 982 departing flights in 2022. The most frequently used route for private aviation in all years was the route between Riga and Moscow. The shortest used route for private aviation with 10 flights or more per year changes every year, but in 2022 it was the route between Riga and Kaunas (218.54 km).

2020

Table 196 - Number of departing private flights and the CO_2 emissions in Latvia in 2020

Flights	CO_2 emissions (tonnes)
345	1,565

Table 197 - Top three airports of Latvia with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EVRA	Riga International Airport	342
EVLA	Liepāja International Airport	3

Table 198 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Latvia in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Moscow-Riga	Riga-Moscow	237	1,016
Riga-Prague	Prague-Riga	33	95
Riga-Minsk	Minsk-Riga	29	58

Table 199 - Shortest private flight routes of Latvia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Riga-Helsinki	Helsinki-Riga	381.51	11	22
Riga-Minsk	Minsk-Riga	422.26	29	58
Riga-Saint Petersburg	Saint Petersburg-Riga	487.08	26	71

2021

Table 200 - Number of departing private flights and the CO_2 emissions in Latvia in 2021

Flights	CO_2 emissions (tonnes)
1.220	7,950

Table 201 - Top three airports of Latvia with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EVRA	Riga International Airport	1,207
EVLA	Liepāja International Airport	13

Table 202 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Latvia in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Riga-Moscow	Moscow-Riga	758	3,532,250.99
Riga-Saint Petersburg	Saint Petersburg-Riga	139	429,241.49
Riga-London	London-Riga	139	972,309.68

Table 203 - Shortest private flight routes of Latvia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Riga-Vilnius	Vilnius-Riga	266.69	25	55,256.60
Riga-Tallinn	Tallinn-Riga	281.50	21	43,159.79
Riga-Helsinki	Helsinki-Riga	381.51	22	49,248.42

2022

Table 204 - Number of departing private flights and the CO_2 emissions in Latvia in 2022

Flights	CO_2 emissions (tonnes)
997	6,320

Table 205 - Top three airports of Latvia with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EVRA	Riga International Airport	982
EVLA	Liepāja International Airport	15

Table 206 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Latvia in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Riga-Moscow	Moscow-Riga	142	673
Riga-London	London-Riga	104	746
Riga-Stockholm	Stockholm-Riga	70	177

Table 207 - Shortest private flight routes of Latvia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Riga-Kaunas	Kaunas-Riga	218.54	37	111
Riga-Vilnius	Vilnius-Riga	266.69	47	104
Riga-Tallinn	Tallinn-Riga	281.50	60	130

4.17 Private aviation in Lithuania

Private flights departing from Lithuania have increased from 128 flights in 2020 to 737 flights in 2022, and the CO_2 emissions have increased from 595 tonnes in 2020 to 3,818 tonnes in 2022. The most used airport for private aviation for all years is Vilnius Airport (EYVI) with 497 departing flights in 2022. The most frequently used route for private aviation in the years 2020 and 2021 was between Vilnius and Moscow. In 2022, the most frequently used private aviation route was between Vilnius and Warsaw. The shortest used route for private aviation with 10 flights or more per year changes every year, but in 2022 it was the route between Vilnius and Kaunas (85.19 km).

2020

Table 208 - Number of departing private flights and the CO_2 emissions in Lithuania in 2020

Flights	CO_2 emissions (tonnes)
128	595

Table 209 - Top three airports of Lithuania with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EYVI	Vilnius Airport	79
EYKA	Kanaus Airport	28
EYPA	Palanga International Airport	17

Table 210 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Lithuania in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Vilnius-Moscow	Moscow-Vilnius	30	114
Kaunas-Bremen	Bremen-Kaunas	19	56
Vilnius-London	London-Vilnius	11	76

Table 211 - Shortest private flight routes of Lithuania (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020[9]

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Vilnius-Moscow	Vilnius-Kaunas	770.43	13	54
Kaunas-Bremen	Vilnius-Minsk	1,020.45	11	32

2021

Table 212 - Number of departing private flights and the CO_2 emissions in Lithuania in 2021

Flights	CO_2 emissions (tonnes)
665	3,391

Table 213 - Top three airports of Lithuania with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EYVI	Vilnius Airport	570
EYKA	Kanaus Airport	58
EYPA	Palanga International Airport	31

Table 214 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Lithuania in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Vilnius-Moscow	Moscow-Vilnius	322	1,259
Vilnius-Kiev	Kiev-Vilnius	124	387
Vilnius-Saint Petersburg	Saint Petersburg-Vilnius	62	218

Table 215 - Shortest private flight routes of Lithuania (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Vilnius-Minsk	Minsk-Vilnius	198.16	14	28
Vilnius-Riga	Riga-Vilnius	266.69	25	55
Vilnius-Warsaw	Warsaw-Vilnius	396.33	15	36

2022

Table 216 - Number of departing private flights and the CO_2 emissions in Lithuania in 2022

Flights	CO_2 emissions (tonnes)
737	3,818

Table 217 - Top three airports of Lithuania with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EYVI	Vilnius Airport	497
EYKA	Kanaus Airport	134
EYPA	Palanga International Airport	84

[9] For Lithuania in 2020, there were only 2 routes which had 10 or more flights.

Table 218 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Lithuania in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Vilnius-Warsaw	Warsaw-Vilnius	53	155
Vilnius-Riga	Riga-Vilnius	47	104
Vilnius-London	London-Vilnius	41	309

Table 219 - Shortest private flight routes of Lithuania (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Kaunas-Vilnius	Vilnius-Kaunas	85.19	15	33
Kaunas-Riga	Riga-Kaunas	218.54	37	111
Vilnius-Riga	Riga-Vilnius	266.69	47	104

4.18 Private aviation in Luxembourg

Private flights departing from Luxembourg have increased from 621 flights in 2020 to 2,767 flights in 2022, and the CO_2 emissions have increased from 1,471 tonnes in 2020 to 9,087 tonnes in 2022. The most used airport for private aviation (and only one with an IATA and ICAO code) is Luxembourg Airport (ICAO: ELLX) with 2,767 departing flights in 2022. The most frequently used route for private aviation in the year 2020 was between Luxembourg and Geneva. In 2021 and 2022, the most frequently used private aviation route was between Luxembourg and Paris. The shortest used route for private aviation with 10 flights or more for all years was the route between Luxembourg and Metz/Nancy (72.23 km).

2020

Table 220 - Number of departing private flights and the CO_2 emissions in Luxembourg in 2020

Flights	CO_2 emissions (tonnes)
621	1,471

Table 221 - Top three airports of Luxembourg with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
ELLX	Luxembourg Airport	621

Table 222 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Luxembourg in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Luxembourg-Geneva	Geneva-Luxembourg	86	147
Luxembourg-Paris	Paris-Luxembourg	68	112
Luxembourg-Saint Nazaire	Saint Nazaire-Luxembourg	53	121

Table 223 - Shortest private flight routes of Luxembourg (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Luxembourg-Metz/Nancy	Metz/Nancy-Luxembourg	72.23	17	19
Luxembourg-Saarbruecken	Saarbruecken-Luxembourg	79.64	25	29
Luxembourg-Mannheim	Mannheim-Luxembourg	168.53	11	14

2021

Table 224 - Number of departing private flights and the CO_2 emissions in Luxembourg in 2021

Flights	CO_2 emissions (tonnes)
1,656	4,637

Table 225 - Top three airports of Luxembourg with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
ELLX	Luxembourg Airport	1,656

Table 226 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Luxembourg in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Luxembourg-Paris	Paris-Luxembourg	243	444
Luxembourg-Geneva	Geneva-Luxembourg	159	318
Luxembourg-Brussels	Brussels-Luxembourg	140	246

Table 227 - Shortest private flight routes of Luxembourg (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Luxembourg-Metz/Nancy	Metz/Nancy-Luxembourg	72.23	24	28
Luxembourg-Saarbruecken	Saarbruecken-Luxembourg	79.64	35	39
Luxembourg-Liege	Liege-Luxembourg	124.08	11	17

2022

Table 228 - Number of departing private flights and the CO_2 emissions in Luxembourg in 2022

Flights	CO_2 emissions (tonnes)
2,767	9,087

Table 229 - Top three airports of Luxembourg with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
ELLX	Luxembourg Airport	2,767

Table 230 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Luxembourg in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Luxembourg-Paris	Paris-Luxembourg	331	638
Luxembourg-Geneva	Geneva-Luxembourg	295	617
Luxembourg-London	London-Luxembourg	213	585

Table 231 - Shortest private flight routes of Luxembourg (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Luxembourg-Metz/Nancy	Metz/Nancy-Luxembourg	72.23	29	33
Luxembourg-Saarbruecken	Saarbruecken-Luxembourg	79.64	27	34
Luxembourg-Hahn	Hahn-Luxembourg	83.34	13	25

4.19 Private aviation in Malta

Private flights departing from Malta have increased from 217 flights in 2020 to 2,034 flights in 2022, and the CO_2 emissions have increased from 1,386 tonnes in 2020 to 14,715 tonnes in 2022. The most used airport for private aviation (and only one with an IATA and ICAO code) is Malta International Airport (ICAO: LMML) with 2,034 departing flights in 2022. The most frequently used route for private aviation in the year 2020 was between Malta and Nice. In 2021 and 2022, the most frequently used private aviation route was between Malta and London. The shortest used route for private aviation with 10 flights or more in 2021 and 2022 was the route between Malta and Comiso (127.79 km).

2020

Table 232 - Number of departing private flights and the CO_2 emissions in Malta in 2020

Flights	CO_2 emissions (tonnes)
217	1,386

Table 233 - Top three airports of Malta with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LMML	Malta International Airport	217

Table 234 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Malta in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Malta-Nice	Nice-Malta	20	76
Malta-Milan	Milan-Malta	19	67
Malta-London	London-Malta	18	148

Table 235 - Shortest private flight routes of Malta (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Malta-Mitiga, Tripoli	Mitiga, Tripoli-Malta	346.32	14	31
Malta-Nice	Nice-Malta	1,068.60	20	76
Malta-Milan	Milan-Malta	1,163.06	15	54

2021

Table 236 - Number of departing private flights and the CO_2 emissions in Malta in 2021

Flights	CO_2 emissions (tonnes)
1,284	8,555

Table 237 - Top three airports of Malta with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LMML	Malta International Airport	1,284

Table 238 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Malta in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Malta-London	London-Malta	116	890
Malta-Nice	Nice-Malta	106	500
Malta-Madrid	Madrid-Malta	100	457

Table 239 - Shortest private flight routes of Malta (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Malta-Comiso	Comiso-Malta	127.79	20	37
Malta-Catania	Catania-Malta	187.05	21	40
Malta-Palermo	Palermo-Malta	287.06	10	24

2022

Table 240 - Number of departing private flights and the CO_2 emissions in Malta in 2022

Flights	CO_2 emissions (tonnes)
2,034	14,715

Table 241 - Top three airports of Malta with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LMML	Malta International Airport	2,034

Table 242 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Malta in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Malta-London	London-Malta	207	1,692
Malta-Mitiga, Tripoli	Mitiga, Tripoli-Malta	190	377
Malta-Nice	Nice-Malta	138	641

Table 243 - Shortest private flight routes of Malta (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Malta-Comiso	Comiso-Malta	127.79	14	43
Malta-Catania	Catania-Malta	187.05	65	150
Malta-Palermo	Palermo-Malta	287.06	39	88

4.20 Private aviation in Netherlands

Private flights departing from the Netherlands have increased from 2,484 flights in 2020 to 12,176 flights in 2022, and the CO_2 emissions have increased from 6,763 tonnes in 2020 to 52,923 tonnes in 2022. The most used airport for private aviation for all years is Amsterdam Airport Schiphol (EHAM) with 6,723 departing flights in 2022. The most frequently used route for private aviation in all years was between Amsterdam and London. The shortest used route for private aviation with 10 flights or more for all years was the route between Maastricht and Liege (37.04 km).

2020

Table 244 - Number of departing private flights and the CO_2 emissions in Netherlands in 2020

Flights	CO_2 emissions (tonnes)
2,484	6,763

Table 245 - Top three airports of Netherlands with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EHAM	Amsterdam Airport Schiphol	730
EHRD	Rotterdam The Hague Airport	677
EHEH	Eindhoven Airport	440

Table 246 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Netherlands in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Amsterdam-London	London-Amsterdam	147	260
Maastricht-Liege	Liege-Maastricht	113	124
Rotterdam-London	London-Rotterdam	111	184

Table 247 - Shortest private flight routes of Netherlands (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Maastricht-Liege	Liege-Maastricht	37.04	113	124
Amsterdam-Rotterdam	Rotterdam-Amsterdam	46.30	45	55
Eindhoven-Maastricht	Maastricht-Eindhoven	66.67	20	25

2021

Table 248 - Number of departing private flights and the CO_2 emissions in Netherlands in 2021

Flights	CO_2 emissions (tonnes)
6,521	23,944

Table 249 - Top three airports of Netherlands with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EHAM	Amsterdam Airport Schiphol	3,236
EHRD	Rotterdam The Hague Airport	1,524
EHEH	Eindhoven Airport	692

Table 250 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Netherlands in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Amsterdam-London	London-Amsterdam	411	890
Amsterdam-Ibiza	Ibiza-Amsterdam	314	1,560
Amsterdam-Nice	Nice-Amsterdam	293	1,246

Table 251 - Shortest private flight routes of Netherlands (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Maastricht-Liege	Liege-Maastricht	37.04	87	94
Amsterdam-Rotterdam	Rotterdam-Amsterdam	46.30	132	173
Amsterdam-Lelystad	Lelystad-Amsterdam	55.56	16	10

2022

Table 252 - Number of departing private flights and the CO_2 emissions in Netherlands in 2022

Flights	CO_2 emissions (tonnes)
12,176	52,923

Table 253 - Top three airports of Netherlands with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EHAM	Amsterdam Airport Schiphol	6,723
EHRD	Rotterdam The Hague Airport	2,758
EHBK	Maastricht Aachen Airport	870

Table 254 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Netherlands in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Amsterdam-London	London-Amsterdam	1,298	3,219
Rotterdam-London	London-Rotterdam	725	1,884
Amsterdam-Paris	Paris-Amsterdam	535	1,448

Table 255 - Shortest private flight routes of Netherlands (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Maastricht-Liege	Liege-Maastricht	37.04	62	71
Amsterdam-Rotterdam	Rotterdam-Amsterdam	46.30	149	209
Groningen-Borkum	Borkum-Groningen	53.71	10	11

4.21 Private aviation in Norway[10]

Private flights departing from Norway have increased from 906 flights in 2020 to 6.705 flights in 2022, and the CO_2 emissions have increased from 3,842 tonnes in 2020 to 26,393 tonnes in 2022. The most used airport for private aviation for all years was Oslo Airport Gardermoen (ENGM) with 1,934 departed private flights in 2022. The most frequently used route for private aviation in all years was the route between Oslo and Stockholm. The shortest used route for private aviation with 10 flights or more per year changes every year, but in 2022 it was the route between Stavanger and Haugesund (57.41 km).

2020

Table 256 - Number of departing private flights and the CO_2 emissions in Norway in 2020

Flights	CO_2 emissions (tonnes)
906	3,842

Table 257 - Top three airports of Norway with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
ENGM	Oslo Gardermoen Airport	156
ENCN	Kristiansand Airport	28
ENBR	Bergen Airport	28

[10] According to Cirium, a very large share of these flights are medical/special related (around 92% in 2020, around 79% in 2021 and around 65% in 2022). BE20 and C68A are mainly used as ambulance aircraft in Norway. We have chosen to calculate the most frequented airports, most frequented routes and shortest routes excluding BE20 and C68A for Norway, which might lead to an underestimation on these routes/airports. For country totals, the average percentage of medical/special flights have been taken into account as explained in the methodology.

Table 258 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Norway in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Oslo-Stockholm	Stockholm-Oslo	32	61
Oslo-Copenhagen	Copenhagen-Oslo	23	44
Oslo-Billund	Billund-Oslo	20	39

Table 259 - Shortest private flight routes of Norway (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Aalborg-Kristiansand	Kristiansand-Aalborg	162.98	15	19,050.54
Oslo-Bergen	Bergen-Oslo	324.10	10	19,657.75
Oslo-Trondheim	Trondheim-Oslo	362.99	19	45,726.40

2021

Table 260 - Number of departing private flights and the CO_2 emissions in Norway in 2021

Flights	CO_2 emissions (tonnes)
3.309	10,670

Table 261 - Top three airports of Norway with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
ENGM	Oslo Gardermoen Airport	820
ENVA	Trondheim Airport	128
ENBR	Bergen Airport	117

Table 262 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Norway in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Oslo-Stockholm	Stockholm-Oslo	173	427
Oslo-Trondheim	Trondheim-Oslo	124	317
Oslo-Copenhagen	Copenhagen-Oslo	68	163

Table 263 - Shortest private flight routes of Norway (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Oslo-Sandefjord	Sandefjord-Oslo	122.23	10	15
Oslo-Kristiansand	Kristiansand-Oslo	279.65	12	23
Oslo-Gothenburg	Gothenburg-Oslo	288.91	44	86

2022

Table 264 - Number of departing private flights and the CO_2 emissions in Norway in 2022

Flights	CO_2 emissions (tonnes)
6.705	26,393

Table 265 - Top three airports of Norway with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
ENGM	Oslo Gardermoen Airport	1,934
ENBR	Bergen Airport	377
ENZV	Stavanger Airport	363

Table 266 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Norway in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Oslo-Stockholm	Stockholm-Oslo	266	667
Oslo-London	London-Oslo	225	1,256
Oslo-Trondheim	Trondheim-Oslo	202	509

Table 267 - Shortest private flight routes of Norway (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Stavanger-Haugesund	Haugesund-Stavanger	57.41	41	52
Stavanger-Stord	Stord-Stavanger	105.56	21	25
Oslo-Sandefjord	Sandefjord-Oslo	122.23	64	91

4.22 Private aviation in Poland

Private flights departing from Poland have increased from 1,644 flights in 2020 to 8,471 flights in 2022, and the CO_2 emissions have increased from 3,613 tonnes in 2020 to 38,471 tonnes in 2022. The most used airport for private aviation in for all years was Warsaw Chopin Airport (EPWA), from which 2,884 private flights departed in 2022. The most frequently used route for private aviation was different for each year, but in 2022, it was the route between Warsaw and Krakow. The shortest used route for private aviation with 10 flights or more per year in 2020 was the route between Poznan and Zielona Gora (75.93 km), but for 2021 and 2022, the shortest private aviation route was between Krakow and Katowice (66.67 km).

2020

Table 268 - Number of departing private flights and the CO_2 emissions in Poland in 2020

Flights	CO_2 emissions (tonnes)
1,644	3,613

Table 269 - Top three airports of Poland with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EPWA	Warsaw Airport	499
EPPO	Poznań-Ławica Airport	185
EPGD	Gdańsk Lech Wałęsa Airport	171

Table 270 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Poland in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Warsaw-Gdansk	Gdansk-Warsaw	84	105
Warsaw-Poznan	Poznan-Warsaw	75	91
Warsaw-Rzeszow	Rzeszow-Warsaw	72	82

Table 271 - Shortest private flight routes of Poland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Poznan-Zielona Gora	Zielona Gora-Poznan	75.93	11	8
Warsaw-Lodz	Lodz-Warsaw	118.53	12	12
Warsaw-Swidnik	Swidnik-Warsaw	157.42	16	12

2021

Table 272 - Number of departing private flights and the CO_2 emissions in Poland in 2021

Flights	CO_2 emissions (tonnes)
4,230	15,855

Table 273 - Top three airports of Poland with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EPWA	Warsaw Airport	1,511
EPKK	Kraków Airport	448
EPGD	Gdańsk Lech Wałęsa Airport	462

Table 274 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Poland in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Warsaw-Gdansk	Gdansk-Warsaw	154	324
Warsaw-Nice	Nice-Warsaw	149	776
Warsaw-Wroclaw	Wroclaw-Warsaw	142	410

Table 275 - Shortest private flight routes of Poland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Krakow-Katowice	Katowice-Krakow	66.67	63	75
Poznan-Zielona Gora	Zielona Gora-Poznan	75.93	28	15
Warsaw-Lodz	Lodz-Warsaw	118.53	21	31

2022

Table 276 - Number of departing private flights and the CO_2 emissions in Poland in 2022

Flights	CO_2 emissions (tonnes)
8,471	38,471

Table 277 - Top three airports of Poland with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EPWA	Warsaw Airport	2,884
EPKK	Kraków Airport	885
EPRZ	Rzeszów-Jasionka Airport	780

Table 278 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Poland in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Warsaw-Krakow	Krakow-Warsaw	392	1,256
Warsaw-Gdansk	Gdansk-Warsaw	287	882
Warsaw-Poznan	Poznan-Warsaw	209	397

Table 279 - Shortest private flight routes of Poland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Krakow-Katowice	Katowice-Krakow	66.67	119	177
Poznan-Zielona Gora	Zielona Gora-Poznan	75.93	39	25
Katowice-Ostrava	Ostrava-Katowice	109.27	14	17

4.23 Private aviation in Portugal

Private flights departing from Portugal have increased from 740 flights in 2020 to 7,994 flights in 2022, and the CO_2 emissions have increased from 5,065 tonnes in 2020 to 65,323 tonnes in 2022. The most used airport for private aviation in for all years was Faro Airport (LPFR), from which 2,684 private flights departed in 2022. The most frequently used route for private aviation for all years was the route between Faro and London. The shortest used route for private aviation with 10 flights or more per year in 2020 was the route between Faro and Tires (225.94 km). For 2021 and 2022, the shortest private aviation route with 10 or more flights per year was the route between Lisbon and Tires (20.37 km).

2020

Table 280 - Number of departing private flights and the CO_2 emissions in Portugal in 2020

Flights	CO_2 emissions (tonnes)
740	5,065

Table 281 - Top three airports of Portugal with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LPFR	Faro Airport	257
LPPT	Lisbon Airport	163
LPPR	Porto Airport	130

Table 282 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Portugal in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Faro-London	London-Faro	68	528
Porto-London	London-Porto	43	150
Lisbon-London	London-Lisbon	28	147

Table 283 - Shortest private flight routes of Portugal (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Faro-Tires	Tires-Faro	225.94	13	18
Porto-Tires	Tires-Porto	285.21	16	22
Faro-Malaga	Malaga-Faro	311.14	17	28

2021

Table 284 - Number of departing private flights and the CO_2 emissions in Portugal in 2021

Flights	CO_2 emissions (tonnes)
4,406	33,016

Table 285 - Top three airports of Portugal with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LPFR	Faro Airport	1,530
LPPT	Lisbon Airport	1,017
LPPR	Porto Airport	731

Table 286 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Portugal in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Faro-London	London-Faro	331	2,138
Porto-Valencia	Valencia-Porto	191	1,204
Faro-Farnborough	Farnborough-Faro	152	979

Table 287 - Shortest private flight routes of Portugal (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Lisbon-Tires	Tires-Lisbon	20.37	97	189
Faro-Portimao	Portimao-Faro	55.56	13	13
Faro-Jerez De La Frontera	Jerez De La Frontera-Faro	172.24	21	38

2022

Table 288 - Number of departing private flights and the CO_2 emissions in Portugal in 2022

Flights	CO_2 emissions (tonnes)
7,994	65,323

Table 289 - Top three airports of Portugal with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LPFR	Faro Airport	2,684
LPPT	Lisbon Airport	1,784
LPCS	Cascais Municipal Aerodrome	1,521

Table 290 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Portugal in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Faro-London	London-Faro	543	3,565
Lisbon-London	London-Lisbon	285	2,052
Faro-Malaga	Malaga-Faro	275	606

Table 291 - Shortest private flight routes of Portugal (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Lisbon-Tires	Tires-Lisbon	20.37	118	261
Porto-Vigo	Vigo-Porto	109.27	19	28
Faro-Jerez De La Frontera	Jerez De La Frontera-Faro	172.24	32	63

4.24 Private aviation in Romania

Private flights departing from Romania have increased from 573 flights in 2020 to 4,453 flights in 2022, and the CO_2 emissions have increased from 1,862 tonnes in 2020 to 19,019 tonnes in 2022. The most used airport for private aviation in for all years was Henri Coandă International Airport in Bucharest (LROP), from which 1,763 private flights departed in 2022. The most frequently used route for private aviation is different for all years, but in 2022 it was the route between Bucharest and Bacau. The shortest used route for private aviation with 10 flights or more per year for 2020 and 2021 was the route between Bucharest and Craoiva (175.94 km), and for 2022 it was the route between Timisoara and Belgrade (135.20 km).

2020

Table 292 - Number of departing private flights and the CO_2 emissions in Romania in 2020

Flights	CO_2 emissions (tonnes)
573	1,862

Table 293 - Top three airports of Romania with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LROP	Henri Coandă International Airport (Bucharest)	194
LRBS	Aurel Vlaicu International Airport (Bucharest)	131
LRTR	Timișoara Traian Vuia International Airport	71

Table 294 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Romania in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Bucharest-Sofia	Sofia-Bucharest	36	35
Bucharest-Timisoara	Timisoara-Bucharest	31	43
Bucharest-London	London-Bucharest	25	196

Table 295 - Shortest private flight routes of Romania (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Bucharest-Craiova	Craiova-Bucharest	175.94	10	9
Bucharest-Sofia	Sofia-Bucharest	294.47	21	18
Cluj-Napoca-Bucharest	Bucharest-Cluj-Napoca	314.84	13	14

2021

Table 296 - Number of departing private flights and the CO_2 emissions in Romania in 2021

Flights	CO_2 emissions (tonnes)
2,027	8,268

Table 297 - Top three airports of Romania with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LROP	Henri Coandă International Airport (Bucharest)	712
LRBS	Aurel Vlaicu International Airport (Bucharest)	429
LRTR	Timișoara Traian Vuia International Airport	194

Table 298 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Romania in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Bucharest-Milan	Milan-Bucharest	108	521
Bucharest-Budapest	Budapest-Bucharest	84	220
Timisoara-Malta	Malta-Timisoara	80	271

Table 299 - Shortest private flight routes of Romania (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Bucharest-Craiova	Craiova-Bucharest	175.94	20	47
Bucharest-Constanta	Constanta-Bucharest	192.61	26	46
Oradea-Budapest	Budapest-Oradea	203.72	15	21

2022

Table 300 - Number of departing private flights and the CO_2 emissions in Romania in 2022

Flights	CO_2 emissions (tonnes)
4,453	19,019

Table 301 - Top three airports of Romania with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LROP	Henri Coandă International Airport (Bucharest)	1,763
LRBS	Aurel Vlaicu International Airport (Bucharest)	551
LRCL	Cluj International Airport	322

Table 302 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Romania in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Bucharest-Bacau	Bacau-Bucharest	191	330
Bucharest-Vienna	Vienna-Bucharest	169	556
Bucharest-London	London-Bucharest	154	1,351

Table 303 - Shortest private flight routes of Romania (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Timisoara-Belgrade	Belgrade-Timisoara	135.20	11	17
Bucharest-Craiova	Craiova-Bucharest	175.94	50	85
Bucharest-Constanta	Constanta-Bucharest	192.61	61	119

4.25 Private aviation in Slovakia

Private flights departing from Slovakia have increased from 616 flights in 2020 to 2,528 flights in 2022, and the CO_2 emissions have increased from 1,322 tonnes in 2020 to 9,991 tonnes in 2022. The most used airport for private aviation in for all years was Bratislava Airport (LZIB), from which 1,775 private flights departed in 2022. The most frequently used route for private aviation in 2020 was the route between Bratislava and Poprad/Tatry, but for 2021 and 2022 the most frequently used private aviation route was between Bratislava and Prague. The shortest used route for private aviation with 10 flights or more per year for all years was the route between Bratislava and Vienna (48.15 km).

2020

Table 304 - Number of departing private flights and the CO_2 emissions in Slovakia in 2020

Flights	CO_2 emissions (tonnes)
616	1,322

Table 305 - Top three airports of Slovakia with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LZIB	Bratislava Airport	378
LZTT	Poprad-Tatry Airport	146
LZKZ	Košice International Airport	38

Table 306 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Slovakia in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Bratislava-Poprad/Tatry	Poprad/Tatry-Bratislava	115	181,285.77
Bratislava-Prague	Prague-Bratislava	106	170,723.75
Bratislava-Zadar	Zadar-Bratislava	44	85,913.95

Table 307 - Shortest private flight routes of Slovakia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Bratislava-Vienna	Vienna-Bratislava	48.15	26	28,161.04
Bratislava-Brno	Brno-Bratislava	114.82	21	25,680.86
Bratislava-Ostrava	Ostrava-Bratislava	181.50	16	22,577.37

2021

Table 308 - Number of departing private flights and the CO_2 emissions in Slovakia in 2021

Flights	CO_2 emissions (tonnes)
1,114	3,094

Table 309 - Top three airports of Slovakia with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LZIB	Bratislava Airport	705
LZTT	Poprad-Tatry Airport	189
LZKZ	Košice International Airport	108

Table 310 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Slovakia in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Bratislava-Prague	Prague-Bratislava	266	439
Bratislava-Poprad/Tatry	Poprad/Tatry-Bratislava	102	185
Poprad/Tatry-Prague	Prague-Poprad/Tatry	78	144

Table 311 - Shortest private flight routes of Slovakia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Bratislava-Vienna	Vienna-Bratislava	48.15	29	38
Bratislava-Brno	Brno-Bratislava	114.82	18	21
Bratislava-Budapest	Budapest-Bratislava	174.09	22	34

2022

Table 312 - Number of departing private flights and the CO_2 emissions in Slovakia in 2022

Flights	CO_2 emissions (tonnes)
2,528	9,991

Table 313 - Top three airports of Slovakia with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LZIB	Bratislava Airport	1,775
LZKZ	Košice International Airport	365
LZTT	Poprad-Tatry Airport	274

Table 314 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Slovakia in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Bratislava-Prague	Prague-Bratislava	572	1,247
Bratislava-Zadar	Zadar-Bratislava	172	379
Bratislava-Nice	Nice-Bratislava	158	786

Table 315 - Shortest private flight routes of Slovakia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Bratislava-Vienna	Vienna-Bratislava	48.15	82	114
Bratislava-Piestany	Piestany-Bratislava	68.52	11	25
Bratislava-Brno	Brno-Bratislava	114.82	46	61

4.26 Private aviation in Slovenia

Private flights departing from Slovenia have increased from 244 flights in 2020 to 1,267 flights in 2022, and the CO_2 emissions have increased from 548 tonnes in 2020 to 3,802 tonnes in 2022. The most used airport for private aviation in for all years was Ljubljana Jože Pučnik Airport (LJLJ), from which 949 private flights departed in 2022. The most frequently used route for private aviation in 2020 was the route between Maribor and Friedrichshafen, but for 2021 and 2022 the most frequently used private aviation route was between Ljubljana and Belgrade. The shortest used route for private aviation with 10 flights or more per year for all years was the route between Maribor and Graz (61.12 km).

2020

Table 316 - Number of departing private flights and the CO_2 emissions in Slovenia in 2020

Flights	CO_2 emissions (tonnes)
244	548

Table 317 - Top three airports of Slovenia with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LJLJ	Ljubljana Airport	164
LJMB	Maribor Airport	74
LJPZ	Portorož Airport	6

Table 318 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Slovenia in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Maribor-Friedrichshafen	Friedrichshafen-Maribor	66	127
Maribor-Graz	Graz-Maribor	37	42
Ljubljana-Belgrade	Belgrade-Ljubljana	29	54

Table 319 - Shortest private flight routes of Slovenia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Maribor-Graz	Graz-Maribor	61.12	37	42
Ljubljana-Trieste	Trieste-Ljubljana	87.04	18	21
Ljubljana-Vienna	Vienna-Ljubljana	262.98	23	38

2021

Table 320 - Number of departing private flights and the CO_2 emissions in Slovenia in 2021

Flights	CO_2 emissions (tonnes)
889	2,609

Table 321 - Top three airports of Slovenia with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LJLJ	Ljubljana Airport	674
LJMB	Maribor Airport	130
LJPZ	Portorož Airport	85

Table 322 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Slovenia in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Ljubljana-Belgrade	Belgrade-Ljubljana	117	234
Maribor-Friedrichshafen	Friedrichshafen-Maribor	59	113
Ljubljana-Geneva	Geneva-Ljubljana	48	130

Table 323 - Shortest private flight routes of Slovenia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Maribor-Graz	Graz-Maribor	61.12	42	46
Ljubljana-Trieste	Trieste-Ljubljana	87.04	32	39
Ljubljana-Graz	Graz-Ljubljana	112.97	11	13

2022

Table 324 - Number of departing private flights and the CO_2 emissions in Slovenia in 2022

Flights	CO_2 emissions (tonnes)
1,267	3,802

Table 325 - Top three airports of Slovenia with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LJLJ	Ljubljana Airport	949
LJMB	Maribor Airport	193
LJPZ	Portorož Airport	125

Table 326 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Slovenia in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Ljubljana-Belgrade	Belgrade-Ljubljana	145	325
Maribor-Friedrichshafen	Friedrichshafen-Maribor	96	185
Ljubljana-Geneva	Geneva-Ljubljana	78	217

Table 327 - Shortest private flight routes of Slovenia (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Maribor-Graz	Graz-Maribor	61.12	47	47
Portoroz-Pula	Pula-Portoroz	68.52	25	31
Ljubljana-Trieste	Trieste-Ljubljana	87.04	14	22

4.27 Private aviation in Spain and Canary Islands[11]

Private flights departing from Spain and the Canary Islands have increased from 5,388 flights in 2020 to 45,633 flights in 2022, and the CO_2 emissions have increased from 18,275 tonnes in 2020 to 243,851 tonnes in 2022. The most used airport for private aviation in for all years was Palma de Mallorca Airport (LEPA), from which 7,932 private flights departed in 2022. For all years, the most frequently used private aviation route was between Ibiza and Palma de Mallorca. The shortest used route for private aviation with 10 flights or more per year differs for all years, but in 2022 it was the route between Santiago de Compostela and La Coruna (44.45 km).

[11] Especially in and around the Canary Islands, BE20 aircraft are often used for medical flights. For most common flight routes, routes with (almost) only BE20 have been excluded from the 'most used flight routes'.

2020

Table 328 - Number of departing private flights and the CO_2 emissions in Spain and Canary Islands in 2020

Flights	CO_2 emissions (tonnes)
5,388	18,275

Table 329 - Top three airports of Spain and Canary Islands with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LEPA	Palma de Mallorca Airport	1,064
LEIB	Ibizia Airport	794
LEMG	Málaga Airport	697

Table 330 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Spain and Canary Islands in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Ibiza-Palma de Mallorca[12]	Palma de Mallorca-Ibiza	139	132
Ibiza-Geneva	Geneva-Ibiza	88	259
Ibiza-Nice	Nice-Ibiza	87	199

Table 331 - Shortest private flight routes of Spain and Canary Islands (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Palma de Mallorca-Menorca[13]	Menorca-Palma de Mallorca	133.34	523	321
Valencia-Alicante	Alicante-Valencia	133.34	11	13
Ibiza-Palma de Mallorca	Palma de Mallorca-Ibiza	138.90	139	132

2021

Table 332 - Number of departing private flights and the CO_2 emissions in Spain and Canary Islands in 2021

Flights	CO_2 emissions (tonnes)
26,239	126,786

Table 333 - Top three airports of Spain and Canary Islands with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LEPA	Palma de Mallorca Airport	4,743
LEIB	Ibizia Airport	3,911
LEMG	Málaga Airport	3,911

[12] We are not sure about the nature of flights on the route between Ibiza and Palma de Mallorca. It is mainly flown by BE20 aircraft, which could suggest air ambulance services.

[13] The number of flights and CO_2 emissions are uncertain, as many ambulance aircraft are active on this route. As medical aircraft in Spain are mainly BE20 aircraft, we can say that there have been more than 10 flights (our benchmark) executed that are not medical of nature, so that is why we include this route.

Table 334 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Spain and Canary Islands in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Ibiza-Palma de Mallorca	Palma de Mallorca-Ibiza	851	1,029
Barcelona-Madrid	Madrid-Barcelona	688	1,952
Ibiza-London	London-Ibiza	467	2,655

Table 335 - Shortest private flight routes of Spain and Canary Islands (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Sevilla-Jerez De La Frontera	Jerez De La Frontera-Sevilla	75.93	15	23
Barcelona-Reus	Reus-Barcelona	79.64	29	37
Malaga-Granada	Granada-Malaga	85.19	13	20

2022

Table 336 - Number of departing private flights and the CO_2 emissions in Spain and Canary Islands in 2022

Flights	CO_2 emissions (tonnes)
45,633	243,851

Table 337 - Top three airports of Spain and Canary Islands with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LEPA	Palma de Mallorca Airport	7,932
LEIB	Ibizia Airport	6,606
LEMD	Madrid-Barajas Airport	6,237

Table 338 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Spain and Canary Islands in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Ibiza-Palma de Mallorca	Palma de Mallorca-Ibiza	1,145	1,526
Palma de Mallorca-London	London-Palma de Mallorca	953	4,963
Barcelona-Madrid	Madrid-Barcelona	941	2,888

Table 339 - Shortest private flight routes of Spain and Canary Islands (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Santiago De Compostela-La Coruna	La Coruna-Santiago De Compostela	44.45	16	15
Lanzarote-Puerto del Rosario	Puerto del Rosario-Lanzarote	61.12	17	14
Sevilla-Jerez De La Frontera	Jerez De La Frontera-Sevilla	75.93	35	53

4.28 Private aviation in Sweden[14]

Private flights departing from Sweden have increased from 3,219 flights in 2020 to 10,285 flights in 2022, and the CO_2 emissions have increased from 6,582 tonnes in 2020 to 43,296 tonnes in 2022. The most used airport for private aviation for all years was Stockholm Bromma Airport (ESSB), with 3,197 private flights in 2022. The most frequently flown private aviation route in 2022 it was the route between Stockholm and London. The shortest used route for private aviation with 10 flights or more also was the same for each year, namely the route between Norrkoping and Linkoping (38.89 km).

2020

Table 340 - Number of departing private flights and the CO_2 emissions in Sweden in 2020

Flights	CO_2 emissions (tonnes)
3,219	6,582

Table 341 - Top three airports of Sweden with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
ESSB	Stockholm Bromma Airport	523
ESSA	Stockholm Arlanda Airport	261
ESSG	Ludvika Airport	185

Table 342 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Sweden in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Stockholm-Malmo	Malmo-Stockholm	127	293
Stockholm-Gothenburg	Gothenburg-Stockholm	113	225
Stockholm-Linkoping	Linkoping-Stockholm	112	347

Table 343 - Shortest private flight routes of Sweden (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Norrkoping-Linkoping	Linkoping-Norrkoping	38.89	17	9
Gothenburg-Trollhattan	Trollhattan-Gothenburg	61.12	15	16
Stockholm-Eskilstuna	Eskilstuna-Stockholm	70.38	27	29

2021

Table 344 - Number of departing private flights and the CO_2 emissions in Sweden in 2021

Flights	CO_2 emissions (tonnes)

[14] Sweden is also characterized by a relatively high amount ambulance flights (around 53% in 2020, around 32% in 2021 and around 36% in 2022), which are mainly performed by BE20 (2020 and 2021) or PC24 (2022) aircraft. We have chosen to calculate the most frequented airports, most frequented routes and shortest routes excluding BE20 and PC24 in all the years for Sweden, which might lead to an underestimation on these routes/airports. For country totals, the average percentage of medical/special flights have been taken into account as explained in the methodology.

9,314	30,528

Table 345 - Top three airports of Sweden with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
ESSB	Stockholm Bromma Airport	2,076
ESSA	Stockholm Arlanda Airport	996
ESGG	Ludvika Airport	674

Table 346 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Sweden in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Stockholm-Malmo	Malmo-Stockholm	429	1,114
Stockholm-Gothenburg	Gothenburg-Stockholm	398	1,012
Stockholm-Helsinki	Helsinki-Stockholm	215	463

Table 347 - Shortest private flight routes of Sweden (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Linkoping-Norrkoping	Norrkoping-Linkoping	38.89	62	34
Gothenburg-Trollhattan	Trollhattan-Gothenburg	66.67	10	12
Stockholm-Eskilstuna	Eskilstuna-Stockholm	70.38	27	26

2022

Table 348 - Number of departing private flights and the CO_2 emissions in Sweden in 2022

Flights	CO_2 emissions (tonnes)
10,285	43,296

Table 349 - Top three airports of Sweden with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
ESSB	Stockholm Bromma Airport	3,197
ESSA	Stockholm Arlanda Airport	1,206
ESGG	Ludvika Airport	1,003

Table 350 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Sweden in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Stockholm-London	London-Stockholm	531	3,249
Stockholm-Gothenburg	Gothenburg-Stockholm	430	1,142
Stockholm-Helsinki	Helsinki-Stockholm	371	973

Table 351 - Shortest private flight routes of Sweden (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Norrkoping-Linkoping	Linkoping-Norrkoping	38.89	16	13

Gothenburg-Trollhattan	Trollhattan-Gothenburg	66.67	14	18
Stockholm-Eskilstuna	Eskilstuna-Stockholm	70.38	11	8

4.29 Private aviation in Switzerland

Private flights departing from Switzerland have increased from 7,890 flights in 2020 to 35,269 flights in 2022, and the CO_2 emissions have increased from 24,949 tonnes in 2020 to 166.012 tonnes in 2022. The most used airport for private aviation for all years was Geneva Airport (LSGG), from which 14,582 private flights departed in 2022. The most frequently used route for private aviation for all years was the route between Geneva and Paris.
The shortest used route for private aviation with 10 flights or more per year was different for each year, but for 2022 it was the route between Altenrhein and Friedrichshafen (22.22 km).

2020

Table 352 - Number of departing private flights and the CO_2 emissions in Switzerland in 2020

Flights	CO_2 emissions (tonnes)
7,890	24,949

Table 353 - Top three airports of Switzerland with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
LSGG	Geneva Airport	2,907
LSZH	Zurich Airport	2,219
LSGS	Sion Airport	657

Table 354 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Switzerland in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Geneva-Paris	Paris-Geneva	636	1,180
Geneva-Nice	Nice-Geneva	396	673
Geneva-London	London-Geneva	270	901

Table 355 - Shortest private flight routes of Switzerland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Altenrhein-Friedrichshafen	Friedrichshafen-Altenrhein	22.22	15	16
Geneva-Annecy	Annecy-Geneva	33.34	38	42
Zurich-Buochs	Buochs-Zurich	55.56	61	68

2021

Table 356 - Number of departing private flights and the CO_2 emissions in Switzerland in 2021

Flights	CO_2 emissions (tonnes)
21,665	90,781

Table 357 - Top three airports of Switzerland with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
LSGG	Geneva Airport	8,777
LSZH	Zurich Airport	6,554
LSGS	Sion Airport	1,410

Table 358 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Switzerland in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Geneva-Paris	Paris-Geneva	1,945	4,706
Geneva-Nice	Nice-Geneva	1,020	2,367
Geneva-London	London-Geneva	841	3,084

Table 359 - Shortest private flight routes of Switzerland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Emmen-Buochs	Buochs-Emmen	14.82	14	15
Altenrhein-Friedrichshafen	Friedrichshafen-Altenrhein	22.22	18	18
Geneva-Annecy	Annecy-Geneva	33.34	46	62

2022

Table 360 - Number of departing private flights and the CO_2 emissions in Switzerland in 2022

Flights	CO_2 emissions (tonnes)
35,269	166,012

Table 361 - Top three airports of Switzerland with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
LSGG	Geneva Airport	14,582
LSZH	Zurich Airport	11,146
LSGS	Sion Airport	2,731

Table 362 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in Switzerland in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
Geneva-Paris	Paris-Geneva	2,745	6,916
Geneva-London	London-Geneva	1,996	7,949
Geneva-Nice	Nice-Geneva	1,671	3,886

Table 363 - Shortest private flight routes of Switzerland (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Altenrhein-Friedrichshafen	Friedrichshafen-Altenrhein	22.22	39	45
Geneva-Annecy	Annecy-Geneva	33.34	31	45
Zurich-Emmen	Emmen-Zurich	44.45	11	13

4.30 Private aviation in United Kingdom

Private flights departing from the United Kingdom have increased from 18,998 flights in 2020 to 90,256 flights in 2022, and the CO_2 emissions have increased from 45,101 tonnes in 2020 to 501,077 tonnes in 2022. The most used airport for private aviation in 2020 and 2021 was Farnborough Airport (EGLF). In 2022, the most used airport for private aviation became Luton Airport (EGGW) with 12,249 flights. The most frequently used route for private aviation for 2021 and 2022 was the route between London and Paris. The shortest used route for private aviation with 10 flights or more per year for 2021 and 2022 was the route between Farnborough and Blackbushe (7.41 km).

2020

Table 364 - Number of departing private flights and the CO_2 emissions in United Kingdom in 2020

Flights	CO_2 emissions (tonnes)
18,998	45,101

Table 365 - Top three airports of United Kingdom with most departing private flights in 2020

Airport ICAO	Airport name	Number of flights
EGLF	Farnborough Airport	2,547
EGGW	Luton Airport	2,271
EGKB	London Biggin Hill Airport	2,234

Table 366 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in United Kingdom in 2020

City pair	City pair2	Flights	CO_2 emissions (tonnes)
London-Paris	Paris-London	419	883
Bristol-Barrow-In-Furness	Barrow-In-Furness-Bristol	404	356
Farnborough-Barrow-In-Furness	Barrow-In-Furness-Farnborough	388	375

Table 367 - Shortest private flight routes of United Kingdom (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2020

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
London-Farnborough	Farnborough-London	31.48	27	34
Barrow-In-Furness-Blackpool	Blackpool-Barrow-In-Furness	38.89	11	10
Bournemouth-Southampton[15]	Southampton-Bournemouth	38.89	103	97

2021

Table 368 - Number of departing private flights and the CO_2 emissions in United Kingdom in 2021

Flights	CO_2 emissions (tonnes)
51.380	203,836

[15] The numbers fort he route between Bournemouth and Southampton might be inflated due to a large part of flights being executed with the same aircraft type, which could mean the majority of flights have been executed with a different purpose, but the number of flights with different aircrafts is still larger than 10.

Table 369 - Top three airports of United Kingdom with most departing private flights in 2021

Airport ICAO	Airport name	Number of flights
EGLF	Farnborough Airport	6,382
EGGW	Luton Airport	5,562
EGKB	London Biggin Hill Airport	4,839

Table 370 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in United Kingdom in 2021

City pair	City pair2	Flights	CO_2 emissions (tonnes)
London-Paris	Paris-London	1,461	3,757
London-Nice	Nice-London	1,195	6,343
London-Geneva	Geneva-London	841	3,084

Table 371 - Shortest private flight routes of United Kingdom (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2021

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Farnborough-Blackbushe	Blackbushe-Farnborough	7.41	17	38
Oxford-Upper Heyford	Upper Heyford-Oxford	11.11	39	40
Brize Norton-Oxford	Oxford-Brize Norton	20.37	20	31

2022

Table 372 - Number of departing private flights and the CO_2 emissions in United Kingdom in 2022

Flights	CO_2 emissions (tonnes)
90,256	501,077

Table 373 - Top three airports of United Kingdom with most departing private flights in 2022

Airport ICAO	Airport name	Number of flights
EGGW	Luton Airport	12,249
EGLF	Farnborough Airport	11,825
EGKB	London Biggin Hill Airport	9,232

Table 374 - Most flown routes by private aircraft, including number of flights and CO_2 emissions in United Kingdom in 2022

City pair	City pair2	Flights	CO_2 emissions (tonnes)
London-Paris	Paris-London	3,357	9,629
London-Nice	Nice-London	2,896	15,435
London-Geneva	Geneva-London	1,996	7,949

Table 375 - Shortest private flight routes of United Kingdom (with 10 or more flights) including the distance, number of flights and CO_2 emissions in 2022

City pair	City pair2	Distance (km)	Flights	CO_2 emissions (tonnes)
Farnborough-Blackbushe	Blackbushe-Farnborough	7.41	13	23
Liverpool-Chester	Chester-Liverpool	18.52	21	24

Oxford-Benson	Benson-Oxford	29.63	12	13

4.31 Private aviation top 10 in EU27 (plus Norway, Switzerland and United Kingdom)

This paragraph will include two tables showing the top 10 countries of the EU27 (plus Norway, Switzerland and United Kingdom) in 2022 with the most private flights, and the top 10 countries in 2022 with the highest amount of CO_2 emissions from private aviation. Table 376 shows which 10 countries of the EU27 including Norway, Switzerland and United Kingdom has the highest amount of private flights in 2022.

Table 376 - Top 10 countries in the EU27 (including Norway, Switzerland and United Kingdom) with the highest number of private flights in 2022

Country	Flights	CO_2 emissions (tonnes)
United Kingdom	90,256	501,077
France	84,885	383,061
Germany	58,424	208,646
Italy	55,624	266,089
Spain	45,633	243,851
Switzerland	35,269	166,012
Austria	15,088	54,377
Greece	14,283	88,644
Netherlands	12,176	52,923
Belgium	10,618	40,965

The top 3 consists of United Kingdom (90,256 flights in 2022), France (84,885 flights in 2022) and Germany (58,424 flights in 2022), which makes sense as these countries are important European business hubs. Also relatively smaller countries with a lot of business activity are included in the list, such as Switzerland, Austria, Netherlands and Belgium. Table 377 shows the top 10 countries with the highest CO_2 emissions caused by private aviation in 2022.

Table 377 - Top 10 countries in the EU27 (including Norway, Switzerland and United Kingdom) with the highest CO_2 emissions caused by private aviation in 2022

Country	Flights	CO_2 emissions (tonnes)
United Kingdom	90,526	501,077
France	84,885	383,061
Italy	55,624	266,089
Spain	45,633	243,851
Germany	58,424	208,646
Switzerland	35,269	166,012
Greece	14,283	88,644
Ireland	6,671	67,903
Portugal	7,994	65,323
Austria	15,088	54,377

The list is very similar to Table 376 showing the countries with the highest number of private flights in 2022. It is interesting to see that Ireland and Portugal now appear in the table (admittedly in the bottom), which could mean that flights departing from these countries are longer on average, or more heavy jets (less turboprop aircraft) are departing from these countries.

5 Literature

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A Annex

Table 378 - Examples of airports within (large) cities based on metropolitan area airport code

City	Airports	ICAO
London	Luton Airport	EGGW
London	London Biggin Hill	EGKB
London	London Gatwick Airport	EGKK
London	London City Airport	EGLC
London	London Heathrow Airport	EGLL
London	London Stansted Airport	EGSS
Paris	Beauvaus-Tillé Airport	LFOB
Paris	Paris-Le Bourget	LFPB
Paris	Charles de Gaulle Airport	LFPG
Paris	Orly Airport	LFPO
Stockholm	Stockholm Skavsta Airport	ESKN
Stockholm	Stockholm Västerås Airport	ESOW
Stockholm	Stockholm Arlanda Airport	ESSA
Stockholm	Stockholm Bromma Airport	ESSB
Milan	Milan Malpensa Airport	LIMC
Milan	Milan Bergamo Airport	LIME
Milan	Milan Linate Airport	LIML

Table 379 - All aircraft types taken into account in the research, their ICAO code and the number of flights made in 2020

Aircraft type	ICAO Code	Number of flights
King Air 200 (BE20)	BE20	29,523
Pilatus PC-12 (PC12)	PC12	21,385
Cessna-Citation Mustang (C510)	C510	9,835
Cessna-Citation CJ2 (C25A)	C25A	5,073
Piaggio-P-180 Avanti (P180)	P180	4,803
Bombardier-Challenger 800/850 (CRJ2)	CRJ2	4,677
PIPER PA-46-500TP Malibu Meridian (P46T)	P46T	3,827
Cessna-Citation CJ1 / CitationJet / 525 (C525)	C525	3,203
Pilatus PC-24 (PC24)	PC24	2,792
Cessna-Citation Excel / XLS (C56X)	C56X	2,647
King Air 350 (B350)	B350	2,635
King Air 90 (BE9L)	BE9L	2,476
Bombardier-Challenger 600/601/604/605/650 (CL60)	CL60	1,947
Learjet 45 (LJ45)	LJ45	1,818
Socata-TBM-900 (TBM9, only TBM in SET)	TBM9	1,772
Socata-TBM-850 (TBM8, only TBM in SET)	TBM8	1,700
Hawker Beechjet 400/400A /Nextant (BE40)	BE40	1,658
Piper-Malibu Meridian (PA46)	PA46	1,322
Cessna 208 Caravan (C208)	C208	1,297
Cessna-Citation Latitude (C68A)	C68A	1,256
Embraer-Legacy 600 / 650 (E35L)	E35L	1,156
HondaJet (HDJT)	HDJT	1,132
Bombardier-Global Express/6000/6500 (GLEX)	GLEX	1,065
Cessna-Citation CJ3 (C25B)	C25B	1,040

Aircraft type	ICAO Code	Number of flights
Hawker-Hawker 700/750/800/850/900 (H25B)	H25B	1,038
Embraer-Legacy 500 / Praetor 600 (E550)	E550	852
Cirrus-SF-50 Vision (SF50)	SF50	744
Airbus A319 (A319)	A319	736
Dassault-Falcon 2000 (F2TH)	F2TH	671
Embraer-Phenom 300 (E55P)	E55P	659
Socata-TBM-700 (TBM7, only TBM in SET)	TBM7	629
Gulfstream-GV/500/550 (GLF5)	GLF5	610
Cessna-Citation CJ4 (C25C)	C25C	563
Learjet 35/36 (LJ35)	LJ35	538
Cessna-Citation Sovereign (C680)	C680	500
Piper-Cheyenne 2 (PAY2)	PAY2	466
Gulfstream-G100 / Astra (ASTR)	ASTR	457
Embraer-ERJ-190 / Lineage 1000 (E190)	E190	457
Cessna-Citation 3 / 6 / 7 (C650)	C650	440
Boeing 737-700 (B737)	B737	423
Gulfstream G300/350/400/450 (GLF4)	GLF4	364
Bombardier-Global 5000 / 5500 (GL5T)	GL5T	361
Dassault-Falcon 7X (FA7X)	FA7X	318
Embraer-Phenom 100 (E50P)	E50P	317
Cessna-Citation II / 2 / S2 (C550)	C550	282
Cessna-Citation X / 10 (C750)	C750	271
Cessna-Conquest 1 (C425)	C425	269
Dassault-Falcon 8X (FA8X)	FA8X	264
Dassault-Falcon 900 (F900)	F900	257
King Air 300 (BE30)	BE30	241
Eclipse-Eclipse 500 (EA50)	EA50	238
Gulfstream-G600/650 (GLF6)	GLF6	215
Dassault-Falcon 10 / 100 (FA10)	FA10	175
Embraer-Legacy 450 / Praetor 500 (E545)	E545	168
Bombardier-Challenger 350 (CL35)	CL35	153
Boeing 737-800 (B738)	B738	151
QUEST-Kodiak (KODI)	KODI	131
Cessna-560 Encore / 5 / Ultra (C560)	C560	123
Learjet 40 (LJ40)	LJ40	118
Bombardier-Global 7000 / 7500 (GL7T)	GL7T	108
Cessna-Citation 1SP (C501)	C501	101
Bombardier-Challenger 300 (CL30)	CL30	95
Hawker-Premier 1 / Hawker 200 (PRM1)	PRM1	76
Cessna-Citation / 1 (C500)	C500	71
Gulfstream-G280 (G280)	G280	70
Airbus A318 (A318)	A318	65
Dassault-Falcon 50 (FA50)	FA50	48
Hawker-4000 / Horizon (HA4T)	HA4T	33
Dassault-Falcon 20 /200 (FA20)	FA20	32
Learjet 75 (LJ75)	LJ75	27
Airbus A330-200 (A332)	A332	24
Piper PA-42-1000 Cheyenne 400LS	PAY4	23
Gulfstream-G200 / Galaxy (GALX)	GALX	23
Airbus A320 (A320)	A320	21

Aircraft type	ICAO Code	Number of flights
Gulfstream-G150 (G150)	G150	20
Learjet 60 (LJ60)	LJ60	20
Airbus A340-500	A345	10
Learjet 31 (LJ31)	LJ31	2
Learjet 55 (LJ55)	LJ55	0

Table 380 - All aircraft types taken into account in the research, their ICAO code and the number of flights made in 2021

Aircraft type	ICAO Code	Number of flights
King Air 200 (BE20)	BE20	43,511
Pilatus PC-12 (PC12)	PC12	31,068
Cessna-Citation Excel / XLS (C56X)	C56X	27,832
Cessna-Citation Mustang (C510)	C510	16,150
Bombardier-Global Express/6000/6500 (GLEX)	GLEX	15,956
Dassault-Falcon 2000 (F2TH)	F2TH	15,220
Embraer-Legacy 600 / 650 (E35L)	E35L	15,136
Bombardier-Challenger 600/601/604/605/650 (CL60)	CL60	13,946
Embraer-Phenom 300 (E55P)	E55P	13,334
Cessna-Citation CJ2 (C25A)	C25A	11,019
Hawker Beechjet 400/400A /Nextant (BE40)	BE40	9,321
Cessna-Citation Latitude (C68A)	C68A	8,391
Pilatus PC-24 (PC24)	PC24	7,131
PIPER PA-46-500TP Malibu Meridian (P46T)	P46T	7,006
Piaggio-P-180 Avanti (P180)	P180	6,876
Dassault-Falcon 900 (F900)	F900	6,798
Bombardier-Challenger 800/850 (CRJ2)	CRJ2	6,622
Dassault-Falcon 7X (FA7X)	FA7X	6,553
Bombardier-Challenger 350 (CL35)	CL35	6,453
Cessna-Citation CJ1 / CitationJet / 525 (C525)	C525	6,412
Cessna-Citation CJ3 (C25B)	C25B	5,809
Hawker-Hawker 700/750/800/850/900 (H25B)	H25B	5,657
Gulfstream-GV/500/550 (GLF5)	GLF5	4,893
Learjet 45 (LJ45)	LJ45	4,336
King Air 90 (BE9L)	BE9L	3,993
King Air 350 (B350)	B350	3,849
Gulfstream-G600/650 (GLF6)	GLF6	3,611
Bombardier-Global 5000 / 5500 (GL5T)	GL5T	3,587
Cessna 208 Caravan (C208)	C208	3,560
Embraer-Phenom 100 (E50P)	E50P	3,548
Cessna-Citation Sovereign (C680)	C680	3,360
Gulfstream G300/350/400/450 (GLF4)	GLF4	3,327
Embraer-Legacy 500 / Praetor 600 (E550)	E550	2,987
Cessna-Citation 3 / 6 / 7 (C650)	C650	2,870
HondaJet (HDJT)	HDJT	2,601
Socata-TBM-900 (TBM9, only TBM in SET)	TBM9	2,466
Cessna-Citation II / 2 / S2 (C550)	C550	2,220
Socata-TBM-850 (TBM8, only TBM in SET)	TBM8	2,205
Dassault-Falcon 8X (FA8X)	FA8X	2,179
Hawker-Premier 1 / Hawker 200 (PRM1)	PRM1	1,883

Aircraft type	ICAO Code	Number of flights
Piper-Malibu Meridian (PA46)	PA46	1,840
Gulfstream-G280 (G280)	G280	1,831
Learjet 35/36 (LJ35)	LJ35	1,568
Cessna-Citation CJ4 (C25C)	C25C	1,551
Bombardier-Challenger 300 (CL30)	CL30	1,517
Learjet 60 (LJ60)	LJ60	1,497
Cirrus-SF-50 Vision (SF50)	SF50	1,464
Embraer-Legacy 450 / Praetor 500 (E545)	E545	1,295
Socata-TBM-700 (TBM7, only TBM in SET)	TBM7	1,290
Gulfstream-G200 / Galaxy (GALX)	GALX	1,184
Dassault-Falcon 50 (FA50)	FA50	1,083
King Air 300 (BE30)	BE30	1,013
Airbus A319 (A319)	A319	959
Bombardier-Global 7000 / 7500 (GL7T)	GL7T	959
Embraer-ERJ-190 / Lineage 1000 (E190)	E190	949
Cessna-560 Encore / 5 / Ultra (C560)	C560	946
Cessna-Citation X / 10 (C750)	C750	860
Cessna-Citation 1SP (C501)	C501	840
Dassault-Falcon 10 / 100 (FA10)	FA10	825
Learjet 40 (LJ40)	LJ40	792
Boeing 737-700 (B737)	B737	775
Learjet 75 (LJ75)	LJ75	717
Dassault-Falcon 20 /200 (FA20)	FA20	690
Cessna-Citation / 1 (C500)	C500	659
Gulfstream-G100 / Astra (ASTR)	ASTR	658
Piper-Cheyenne 2 (PAY2)	PAY2	589
Hawker-4000 / Horizon (HA4T)	HA4T	495
Gulfstream-G150 (G150)	G150	462
Cessna-Conquest 1 (C425)	C425	415
Eclipse-Eclipse 500 (EA50)	EA50	369
Learjet 31 (LJ31)	LJ31	254
QUEST-Kodiak (KODI)	KODI	206
Boeing 737-800 (B738)	B738	155
Airbus A318 (A318)	A318	147
Learjet 55 (LJ55)	LJ55	124
Piper PA-42-1000 Cheyenne 400LS	PAY4	38
Airbus A320 (A320)	A320	27
Airbus A340-500	A345	13
Airbus A330-200 (A332)	A332	10

Table 381 - All aircraft types taken into account in the research, their ICAO code and the number of flights made in 2022

Aircraft type	ICAO Code	Number of flights
Cessna-Citation Excel / XLS (C56X)	C56X	49,371
King Air 200 (BE20)	BE20	40,348
Pilatus PC-12 (PC12)	PC12	33,704
Embraer-Phenom 300 (E55P)	E55P	32,984
Bombardier-Global Express/6000/6500 (GLEX)	GLEX	26,248
Dassault-Falcon 2000 (F2TH)	F2TH	22,611
Cessna-Citation CJ2 (C25A)	C25A	21,392
Cessna-Citation Latitude (C68A)	C68A	21,123
Bombardier-Challenger 600/601/604/605/650 (CL60)	CL60	20,080
Bombardier-Challenger 350 (CL35)	CL35	19,955
Embraer-Legacy 600 / 650 (E35L)	E35L	17,716
Cessna-Citation Mustang (C510)	C510	17,173
Pilatus PC-24 (PC24)	PC24	16,119
Cessna-Citation CJ1 / CitationJet / 525 (C525)	C525	15,424
Gulfstream-GV/500/550 (GLF5)	GLF5	13,946
Dassault-Falcon 7X (FA7X)	FA7X	11,674
Gulfstream-G600/650 (GLF6)	GLF6	10,939
Dassault-Falcon 900 (F900)	F900	10,807
Cessna-Citation CJ3 (C25B)	C25B	10,803
Hawker-Hawker 700/750/800/850/900 (H25B)	H25B	10,116
Hawker Beechjet 400/400A /Nextant (BE40)	BE40	8,940
Learjet 45 (LJ45)	LJ45	8,410
Cessna-Citation Sovereign (C680)	C680	7,654
Embraer-Phenom 100 (E50P)	E50P	7,644
Cessna-Citation CJ4 (C25C)	C25C	7,596
Bombardier-Global 5000 / 5500 (GL5T)	GL5T	7,129
Gulfstream G300/350/400/450 (GLF4)	GLF4	7,115
Bombardier-Challenger 800/850 (CRJ2)	CRJ2	6,941
Embraer-Legacy 450 / Praetor 500 (E545)	E545	5,637
Dassault-Falcon 8X (FA8X)	FA8X	5,427
King Air 350 (B350)	B350	5,260
PIPER PA-46-500TP Malibu Meridian (P46T)	P46T	4,867
Piaggio-P-180 Avanti (P180)	P180	4,816
Bombardier-Challenger 300 (CL30)	CL30	4,681
Bombardier-Global 7000 / 7500 (GL7T)	GL7T	4,341
Embraer-Legacy 500 / Praetor 600 (E550)	E550	4,203
Learjet 75 (LJ75)	LJ75	4,089
Learjet 35/36 (LJ35)	LJ35	3,936
Hawker-Premier 1 / Hawker 200 (PRM1)	PRM1	3,739
HondaJet (HDJT)	HDJT	3,582
Socata-TBM-700 (TBM7, only TBM in SET)	TBM7	3,347
Cessna-560 Encore / 5 / Ultra (C560)	C560	3,204
Socata-TBM-900 (TBM9, only TBM in SET)	TBM9	3,067
King Air 90 (BE9L)	BE9L	3,063
Learjet 40 (LJ40)	LJ40	3,013
Learjet 60 (LJ60)	LJ60	3,006
Eclipse-Eclipse 500 (EA50)	EA50	2,954
Gulfstream-G200 / Galaxy (GALX)	GALX	2,917

Aircraft type	ICAO Code	Number of flights
Cessna-Citation 3 / 6 / 7 (C650)	C650	2,860
Airbus A319 (A319)	A319	2,815
Gulfstream-G280 (G280)	G280	2,691
Cessna 208 Caravan (C208)	C208	2,244
Socata-TBM-850 (TBM8, only TBM in SET)	TBM8	2,085
Cirrus-SF-50 Vision (SF50)	SF50	2,055
Boeing 737-700 (B737)	B737	1,998
Dassault-Falcon 50 (FA50)	FA50	1,390
Piper-Malibu Meridian (PA46)	PA46	1,379
Cessna-Citation II / 2 / S2 (C550)	C550	1,331
Cessna-Citation X / 10 (C750)	C750	1,298
Embraer-ERJ-190 / Lineage 1000 (E190)	E190	1,279
Cessna-Conquest 1 (C425)	C425	985
Boeing 737-800 (B738)	B738	962
Gulfstream-G100 / Astra (ASTR)	ASTR	906
Hawker-4000 / Horizon (HA4T)	HA4T	905
Dassault-Falcon 20 /200 (FA20)	FA20	719
Dassault-Falcon 10 / 100 (FA10)	FA10	651
Cessna-Citation 1SP (C501)	C501	646
Learjet 31 (LJ31)	LJ31	613
Gulfstream-G150 (G150)	G150	603
Cessna-Citation / 1 (C500)	C500	590
Piper-Cheyenne 2 (PAY2)	PAY2	526
King Air 300 (BE30)	BE30	486
Learjet 55 (LJ55)	LJ55	421
Airbus A318 (A318)	A318	345
Airbus A320 (A320)	A320	307
QUEST-Kodiak (KODI)	KODI	147
Airbus A330-200 (A332)	A332	140
Airbus A340-500	A345	70
Piper PA-42-1000 Cheyenne 400LS	PAY4	25