NAT TRAFFIC FORECAST FOR 2025-2029

1. Introduction

1.1 This 5-year NAT traffic forecast was prepared according to the Revised Forecast Model as described in the Appendix below. This is the first implementation of that model outside of the testing environment.

1.2 With this forecast, NAT EFFG completes the transition from the Ad Hoc methodology adopted in 2020 due to the disruptions caused by the pandemic. Although some effects remain, particularly with respect to materials availability, labor productivity and travel demand patterns, the group believes that conditions have normalized sufficiently to revert to the standard methodology as revised.

1.3 An important component of the revised methodology is the review process built in to the timeline. The forecast presented here is a draft to be reviewed by NAT EFFG members whose adjustments will be applied to produce the finalized version for adoption.

1.4 The second significant revision to the methodology is the use of historical data provided by the ICAO Data Section. This is data on flights and FIR crossings that forms the basis for the forecast.

2. Data Review: Universe

2.1 The historical data set provided by the ICAO Data Section includes nearly all flights that crossed one or more NAT FIRs in 2024. Any omissions are likely due to equipment limitations or errors in automated reporting and are not believed to be systematic or significant.

2.2 The data consists of 25,921 observations representing a total of 793,516 flights. Each observation is a unique combination of carrier, origin, destination and aircraft type, and it includes the total number of flights by that combination through the NAT and each FIR.

2.3 Counts for the Reykjavik CTA are not available from the ICAO Data Section. These growth rates have been constructed using crossing data provided by Iceland.

2.4 Figure 1 below is an extract of the data.

Figure 1: Data Extract

Carrier	Carrier name	Orig	Orig name	Dest	Dest name	Aircraft type	Aircraft name	TOTAL	BODO	GANDER	NEWYORK EAST	NUUK	REYKJAVIK	SANTA MARIA	SHANWICK
$US	PRIVATE	KMMU	MORRISTOWN	LFPB	PARIS-LE BOURGET	GL5T	BD-700 Global 5000	1	0	1	0	0	0	0	1
ACA	AIR CANADA	CYUL	MONTREAL	EHAM	SCHIPHOL	B789	Boeing 787-9	47	0	47	0	0	0	0	47
AFR	AIR FRANCE	KPHX	PHOENIX	LFPG	PARIS-CDG	B789	Boeing 787-9	66	0	66	1	22	0	0	66
DAL	DELTA AIR LINES	KBOS	LOGAN	EGLL	HEATHROW	A333	Airbus A330-300	3	0	3	0	0	0	0	3
DLH	DEUTSCHE LUFTHANSA	EDDF	FRANKFURT	CYVR	VANCOUVER	B789	Boeing 787-9	83	2	1	0	83	82	0	5

2.5 This "universe" of data is then subset to form the "population" of flights NAT EFFG is forecasting. The following categories are excluded from the population (flight counts are not mutually exclusive):

a) Carrier/City Pair combinations with fewer than 3 flights per week on average (70,427). This eliminates GA, charter and military flights. Note that the city pairs are directionless to reflect

typical carrier operations. This effectively means that the cutoff is 1.5 flights per week in each direction.

b) Cargo flights (20,360). In keeping with the original standard methodology, only scheduled, commercial, passenger flights are forecast.

c) GA aircraft types. A small number of flights (255) by these aircraft remained after the filtering in 2.4.a above.

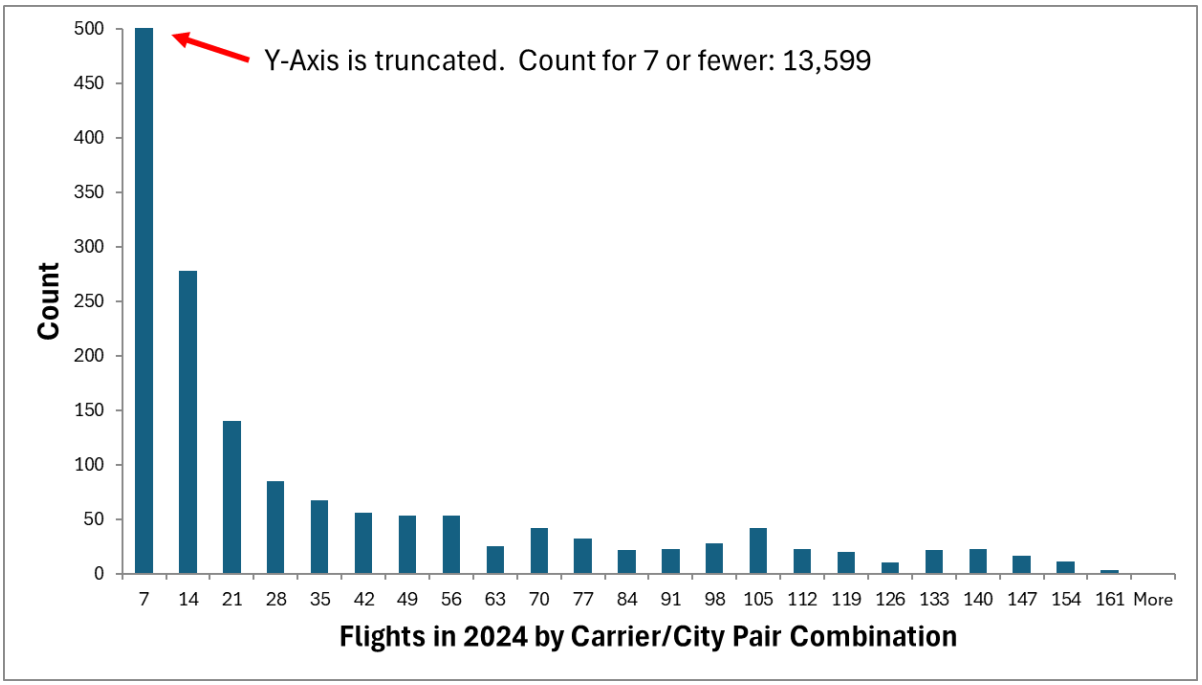
d) Intra India flights. 26,624 flights are exclusively between points in India.

e) Intra Greenland flights. 4,696 flights are exclusively between points in Greenland.

f) Intra Iceland flights. 5,777 flights are exclusively between points in Iceland.

2.6 The histogram below shows the number of occurrences of unique Carrier/City Pair routes according to the frequency of flights during the year. For example, there were approximately 275 occurrences of unique Carrier/City Pair combinations that operated between 8-14 flights (second bar from the left) during the year. The implication is that there is little to be gained by relaxing the cutoff below 156 flights per year (3 flights per week on average) since the numbers are so small at the right end of the chart.

Figure 2: Histogram of Flights by Number of Occurrences



2.7 Following the removals in 2.5 above, the population consists of 5,663 observations totalling 669,987 flights equal to 84% of the total observation as provided by the ICAO Data Section.

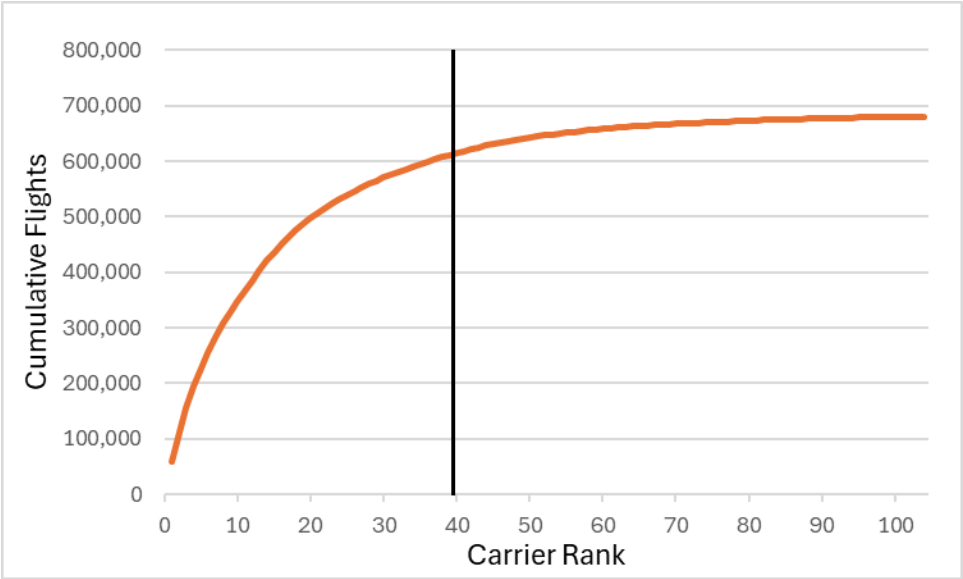
3. Data Review: Population

3.1 From the population, the top carriers and city pairs are selected to be forecast individually. This is necessary for feasibility but also because of the limited fleet information available for the smaller carriers in the population.

3.2 The methodology requires that flights of individually forecast carriers must comprise at least 80% of the population's 669,987 flights as extracted in paragraph 2. In this forecast, the top 39 out of 104 carriers have been selected and represent 604,187 flights or 90.2% of the total.

3.3 As shown in the figure below, the cumulative count of flights grows very slowly after the 39th carrier indicating little benefit to adding more carriers to the sample. This is reinforced by the relative size of the top and bottom carriers. The average number of flights operated by the bottom 65 carriers is just 6.7% of the average number operated by the top 39.

Figure 3: Cumulative Flights of Carriers Ranked by Size



3.4 In the Excel model files, the bottom 65 carriers are grouped together with the "OTH" designation. On reviewing these carriers, it is noted that some cargo carriers remain. They do not affect the results since this group is not forecast individually but they dilute the percentage of flights captured by the top 39.

3.5 Under the revised methodology, city pairs are forecast as directional routes, not combined out and back. This is to reflect variance in FIR crossings that can sometimes be significant. For each of the top 39 carriers, the top 50 routes are forecast.

3.6 Of the top 39 carriers, 14 have 50 or more routes. Any excess routes are grouped together in the Excel model files with the "Othr-Othr" designation.

4. Forecast Assumptions

4.1 The usual assumptions that apply to the revised methodology also apply to this forecast. There are no assumptions specific to this forecast.

5. Forecast Results

5.1 Figure 4 below shows the number of flights by top 39 carriers for each forecast year.

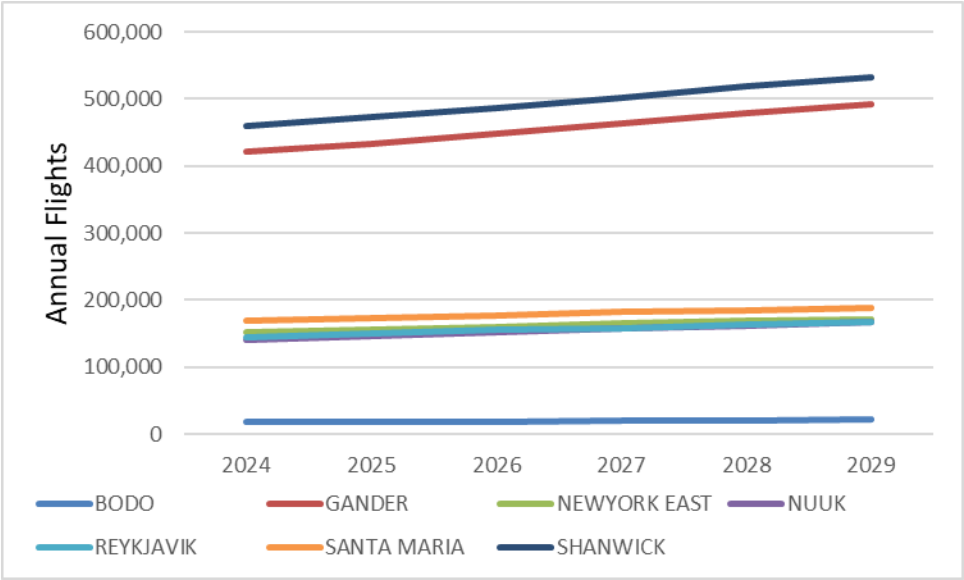
Figure 4: Annual NAT Flights by Carrier

Carrier			Hist	Forecast				
			2024	2025	2026	2027	2028	2029
1	AER LINGUS	EIN	17,708	18,233	19,263	19,263	19,082	19,082
2	AEROMÉXICO	AMX	6,033	6,033	6,336	6,336	6,336	6,639
3	AIR CANADA	ACA	26,279	26,641	26,643	27,194	26,898	27,258
4	AIR EUROPA	AEA	7,776	7,590	7,590	7,590	7,590	7,590
5	AIR FRANCE	AFR	31,957	32,723	33,072	33,467	34,161	34,400
6	AIR INDIA	AIC	5,302	5,583	5,872	6,142	6,669	7,406
7	AIR TRANSAT	TSC	8,782	9,075	9,406	10,146	9,907	9,907
8	AMERICAN AIRLINES	AAL	39,104	40,605	42,709	44,890	48,513	50,356
9	AUSTRIAN AIRLINES	AUA	3,774	3,774	3,774	3,857	3,934	4,016
10	AVIANCA	AVA	5,089	5,089	5,428	5,428	5,428	5,428
11	AZORES AIRLINES	RZO	9,294	10,396	10,396	10,671	11,250	11,886
12	BRITISH AIRWAYS	BAW	42,511	43,088	43,236	43,609	46,753	49,107
13	CONDOR	CFG	5,745	5,742	6,064	6,385	6,707	6,708
14	DELTA	DAL	53,614	54,766	55,877	56,903	57,039	57,355
15	DISCOVER	OCN	4,241	4,241	4,529	4,529	4,853	5,176
16	EASYJET	EZY	4,997	5,217	5,491	5,813	5,848	6,294
17	EL AL	ELY	4,499	4,794	5,383	5,383	5,677	5,677
18	EMIRATES	UAE	11,689	12,243	12,963	13,301	13,921	14,186
19	ETIHAD	ETD	4,018	4,783	5,262	6,028	6,903	7,026
20	IBERIA	IBE	20,447	20,963	21,020	21,199	21,274	21,274
21	ICELAND AIR	FXI	909	909	909	909	909	909
22	ICELANDAIR	ICE	29,799	31,601	31,645	30,755	30,755	30,889
23	ITA AIRWAYS	ITY	5,053	4,876	5,197	5,197	5,197	5,197
24	JET2.COM	EXS	11,914	12,605	12,810	12,441	12,646	12,294
25	JETBLUE	JBU	7,127	7,588	7,818	7,817	7,817	7,817
26	KLM	KLM	18,866	19,904	19,904	20,562	21,221	21,879
27	LOT	LOT	3,880	4,192	4,192	4,192	4,192	4,192
28	LUFTHANSA	DLH	25,581	25,973	29,407	33,791	34,369	40,071
29	PLAY	FPY	7,637	6,689	5,818	5,818	5,818	5,818
30	QATAR AIRWAYS	QTR	13,060	13,415	13,874	15,596	15,695	15,656
31	RYANAIR	RYR	14,420	15,385	15,720	16,648	17,910	19,136
32	SAS	SAS	9,735	10,007	10,623	11,452	11,560	11,560
33	SATA	SAT	18,344	18,344	18,344	18,344	18,344	18,344
34	SWISS	SWR	9,362	9,219	9,648	9,648	9,648	9,648
35	TAP	TAP	14,655	15,598	17,584	19,807	20,045	20,284
36	TUI	TOM	3,829	3,702	3,534	3,532	3,531	3,531
37	TURKISH AIRLINES	THY	19,542	21,114	23,114	24,669	27,672	28,555
38	UNITED AIRLINES	UAL	59,108	60,366	62,179	64,938	68,114	70,603
39	VIRGIN ATLANTIC	VIR	18,507	17,893	19,506	21,120	21,523	21,523
Scheduled Others		Oth	65,800	65,800	65,800	65,800	65,800	65,800
Total			669,987	686,757	707,939	731,172	751,510	770,477
Yr-Yr %Change				2.5%	3.1%	3.3%	2.8%	2.5%
5-Year Percent Change			15.0% 5-Yr Growth					
5-year Ann. Pct. Change			2.8% Annual Average Growth					

5.2 The average annual growth rate over the 5-year forecast is 2.8%. Average growth rates by carrier range from 11.8% (Etihad) to -5.3% (Play). Play recently reworked its business model to focus on Iceland's point-to-point leisure markets while reducing its connecting routes between North America and Europe, thus trimming its capacity and fleet needs.

5.3 Translating carrier flights into FIR crossings gives the trajectory for each FIR in figure 5. Shanwick sees the largest volume of traffic throughout the forecast horizon and Bodo the least.

Figure 5: Annual Crossings by FIR



5.4 Differing growth rates are more apparent in figure 6.

Figure 6: Annual Growth Rates of FIR Crossings

	2025	2026	2027	2028	2029
BODO	3.4	3.7	3.9	3.9	3.4
GANDER	2.3	3.5	3.7	3.1	2.8
NEWYORK EAST	2.0	3.1	3.1	2.6	1.8
NUUK	2.7	3.5	3.9	3.4	3.2
REYKJAVIK	2.7	2.4	2.8	2.6	2.5
SANTA MARIA	2.6	2.7	2.9	2.1	1.6
SHANWICK	2.3	3.2	3.3	3.0	2.8
REYK CTA	2.8	2.6	3.1	2.7	2.7
TOTAL	2.5	3.1	3.3	2.8	2.5

5.5 Weakness in 2025 reflects current macroeconomic uncertainty followed by some recovery in 2026 and 2027.

5.6 At the other end of the forecast, aircraft retirements without specific replacement plans and macroeconomic conditions that revert to trends may be causing those growth rates to slump, a characteristic typical in past vintages of this forecast.

6. Risks to the Forecast

6.1 Continuing material availability difficulties, maintenance issues, and low but improving worker productivity are all clouding aircraft delivery projections. Fleet plans are the core inputs to the model and these disturbances directly distort forecast results.

6.2 Macroeconomic conditions and forecasts are displaying elevated volatility, particularly for the near-term, which affects demand for air travel and complicates fleet planning for that demand.

6.3 Current military conflicts and associated airspace closures are affecting route selection, and route and carrier profitability, directly reducing NAT activity. Indirect effects include the underutilization of aircraft and headwinds to overall consumer confidence and willingness to travel. Although the volume of affected NAT flights is relatively small, the consequences are clear and evident across many carriers.

7. Comparisons to Other Forecasts

7.1 By special request, Eurocontrol has prepared a forecast of NAT traffic based on its annual 7-year forecast. The forecast has been constructed as much as possible to match the assumptions underlying the EFFG forecast although the methodologies are different. Eurocontrol uses econometric models based on forecasts of GDP and other variables to project flights between airport pairs. Flights that pass through at least one NAT FIR are included in this special forecast.

a) The table below shows Eurocontrol's base growth rate forecast through 2029 compared to EFFG's.

	Eurocontrol	EFFG
2025	2.4	2.5
2026	3.2	3.1
2027	3.2	3.3
2028	3.0	2.8
2029	2.4	2.5

(1) The growth rates and trajectories are virtually identical.

b) Considerations include:

(1) Eurocontrol's population of flights being forecast is about 20% larger than EFFG's: 813,037 versus 669,987 in 2024. This is likely due to the use of a more liberal criterion for the cutoff of the minimum number of weekly flights and differing methods for identifying FIR crossings. Provided that there is no systematic difference between the two populations, there should be no meaningful impact on growth rates.

7.2 Boeing produces its Commercial Market Outlook in the fall of each year. (https://www.boeing.com/commercial/market/commercial-market-outlook) It includes forecasts of RPK (Revenue Passenger Kilometers) by region for 10 and 20 years ahead. To evaluate the forecast, RPK of four regions (Central America—Europe, Europe--North America, Europe--South America, Middle East--North America) are aggregated so as to most closely overlap the NAT and provide figures most comparable to the EFFG forecast.

a) With the above aggregation, Boeing forecasts RPK growth of 5.0% from 2023-2033, and 2.7% from 2033-2043.

(1) Growth in the first period (2023-2033) includes a significant boost from the continuing COVID recovery in 2024 and therefore is not comparable to the EFFG forecast which begins in 2025.

(2) However, the second period (2033-2043) is more likely to be Boeing's estimate of a trend rate. Although the period is outside the EFFG forecast horizon, a long-term trend should be roughly comparable to the EFFG 5-year average which is 2.8%.

b) Considerations include:

(1) The long-term trend rate abstracts from near-term economic and industry conditions that could be dampening the EFFG forecast.

(2) The macroeconomic assumptions contained in Boeing's forecast are likely very different from those in the EFFG forecast because it was prepared in the summer/fall of 2024 while EFFG's was prepared in the spring of 2025. Considering recent macroeconomic events and changes to macroeconomic forecasts, Boeing's forecast probably contains more optimistic assumptions and therefore higher growth rates.

(3) The differences in regional definitions make direct comparisons difficult.

(4) Boeing's forecast of RPK growth does not directly compare to EFFG's forecast of growth in flights. For example, the increasing use of smaller, longer range aircraft will require more flights to produce a given number of RPK.

7.3 Airbus releases its Global Market Forecast (https://www.airbus.com/en/products-services/commercial-aircraft/global-market-forecast). It provides growth rates of passengers over three time periods: 2019-2027, 2027-2043 and 2019-2043 and between a large number of geographic regions. The information provided does not allow aggregation of the regions.

a) In comparison to the NAT, the most relevant regions and their respective forecast growth rates are shown below:

Traffic flow	2019-2027 CAGR	2027-2043 CAGR
Middle East - USA	4.9%	3.9%
Caribbean - Middle East	4.1%	3.8%
Africa - USA	3.6%	3.5%
Central America - Middle East	3.5%	3.5%
CIS - Central America	2.7%	3.1%
CIS - USA	3.2%	3.1%
Canada - Middle East	3.0%	3.0%
CIS - Caribbean	2.9%	3.0%
Africa - Canada	2.5%	2.7%
Central Europe - USA	2.0%	2.6%
Caribbean - Central Europe	1.7%	2.5%
Central America - Central Europe	1.9%	2.4%
Europe - USA	1.8%	2.4%
CIS - Canada	1.7%	2.3%
Central America - Europe	2.1%	2.2%
Caribbean - Europe	1.5%	2.1%
Canada - Central Europe	1.3%	1.9%
Canada - Europe	1.5%	1.8%

(1) The two periods beginning in 2019 (2019-2027 and 2019-2043) are difficult to assess in comparison to the EFFG forecast because they include the steep decline and recovery due to COVID.

(2) The period from 2027-2043 is probably Airbus's best estimate of trend growth and may be generally comparable to the 5-year average from EFFG. EFFG's average of 2.8% falls approximately in the middle of the range of the list of regions shown in the table above.

(3) Looking at just the most heavily travelled region, Airbus forecasts passenger growth between Europe – USA of 2.4%. That rate is lower than EFFG's rate for the NAT which is not surprising since it excludes high growth regions such as Middle-East – USA.

b) Considerations include:

(1) As described above in 7.2 (b), the macroeconomic and industry assumptions made by Airbus are different from those available roughly 8 months later when the EFFG forecast was prepared.

(2) The differences in time periods (2027-2043 versus 2024-2029), measures being forecast (passengers versus flights) and regions make direct comparisons impossible and instead require some judgement.

7.4 Even though the different forecast is not directly comparable it is worth noting that they are all within the same forecast range.

8. Forecast Performance Tracking

8.1 As described in the "NAT Traffic Forecast Standard Methodology" each year, the historical base year data will be compared to forecasts from prior forecast vintages for that year and deviations

calculated and presented in tabular form. This table along with a brief narrative assessment will become part of the forecast package. Since the new methodology will be applied from year 2025 and onward a comparison between forecast and actual traffic will first be prepared in 2026.
