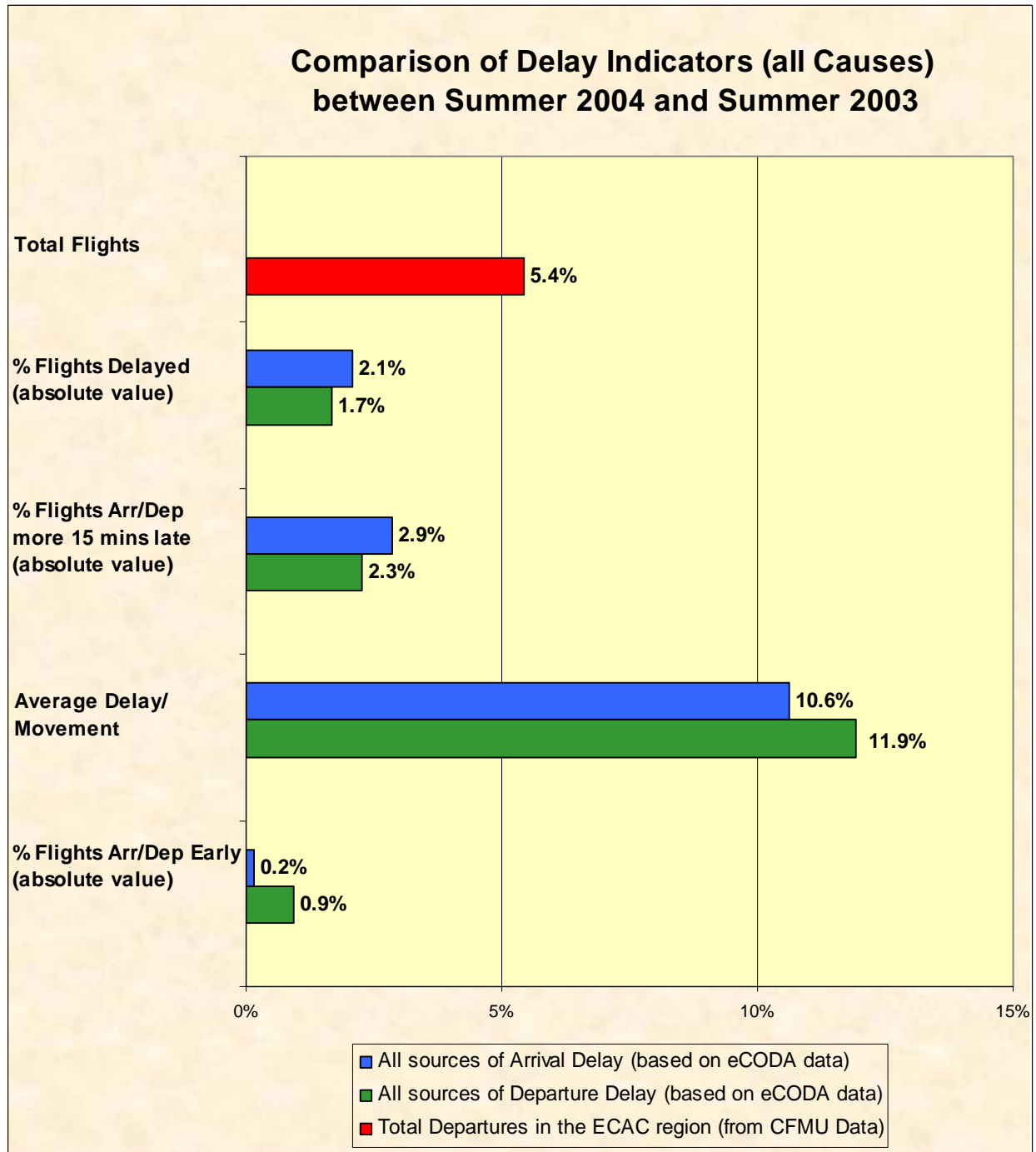


## Delays to Air Transport in Europe Summer 2004 (April → September)



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## FOREWORD

This report represents an overview of the delay situation in the European Civil Aviation Conference Area. It is based on delay data supplied by the CFMU and airline data from eCODA, and has been prepared by the Central Office for Delay Analysis (CODA), a service of the European Air Traffic Management Programme (EATMP).

The report consists of an overview of the reporting period, a summary of the main delay effects, and a series of charts and graphics, which illustrate the main characteristics of the reporting period. A glossary of terms and abbreviations used throughout the report is given in Annex 2.

***In this report the definition of the CFMU ATFM departure delay is based on the difference between the scheduled off-block time and the calculated off-block time, taking into account slot time and estimated taxi time. Airline data from eCODA is based on real recorded delays.***

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## 1. SUMMARY OVERVIEW

Traffic in the ECAC region in the summer months (April to September) went up by 5.4% when compared with the same period of 2003, with delayed flights due to all causes rising by 37% for departures and 38% for arrivals. The Average Delay per Movement, due to all causes of Delay increased by 12% for departures to 9.5 minutes and 11% for arrivals to 9.7 minutes. The number of flights delayed by more than 15 minutes increased by 44% for departures and 48% for arrivals. ATFM delay increased by 4.4%, but the Average Delay per Movement fell by 1% to 1.8 minutes.

### TRAFFIC SITUATION FOR SUMMER 2004<sup>1</sup>

Departures in the ECAC region increased by more than five percent when compared with the summer period of 2003. There were increases in each of the months, with the largest (seven percent) in June and the smallest (almost five percent) in April. Domestic traffic increased by two percent, with the largest rises in the United Kingdom, Turkey, Spain and Greece. International traffic was up eight percent. Ninety two percent of the busier countries saw an increase in International traffic, with the largest real increases in Germany, the United Kingdom, France, Spain and Turkey. Cyprus and the Former Yugoslav Republic of Macedonia were the only two countries to have a fall in their international flights.

Eighty three percent of the busier departure airports (those with at least fifteen thousand flights) had rises in traffic levels, with twenty eight percent of them having a rise of more than ten percent. The largest real increases were at Munich, Vienna and Prague. On the other hand, Nice, Birmingham, Naples and Berlin had the largest real decreases.

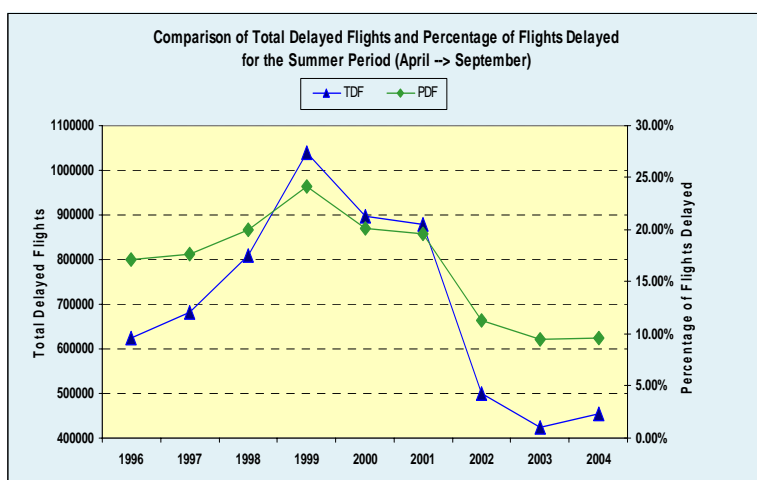
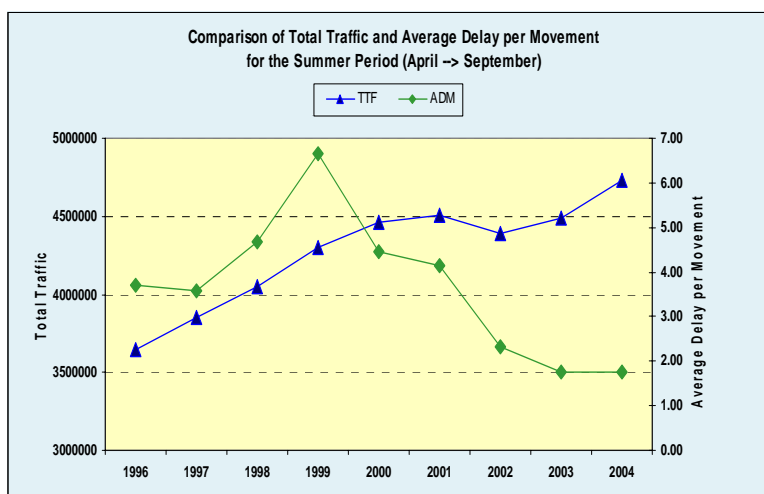
Turning to the traffic between the busier city pairs (those with at least fifteen hundred flights) shows that almost two thirds of them had an increase in the number of flights, with twenty eight percent of the pairs having an increase of more than ten percent. The largest real increases were between Jersey-Guernsey (primarily due to a new airline operating on this route) and Goteborg-Stockholm. Cologne/Bonn-Berlin had the largest real decrease. With over ten thousand flights in each direction, Madrid-Barcelona was the busier city pair in the summer period (eleven flights during the busiest hour) and was followed by Milan/Linate-Rome/Fiumicino (almost seven thousand flights in each direction, eight flights during the busiest hour).

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<sup>1</sup> The analysis was based on the CFMU database which contains details on all IFR flights in the ECAC region.

**ATFM DELAY SITUATION FOR SUMMER 2004 (April → September)**

Delays due to ATFM measures increased by four percent on the same period of 2003. Since 1996, traffic in the summer period has increased by thirty percent whereas the delay has fallen by almost forty percent. Compared with the summer period of 2003, the Average Delay per Movement had a small decrease of one percent to less than two minutes. Lack of ATC Capacity accounted for over half of all the ATFM delay and was followed by Weather (fifteen percent) and Airport Capacity (fourteen percent).



Delayed flights increased by seven percent but the percentage of flights delayed was the same as in 2003 (just under ten percent). Since 1996, delayed flights in the summer period have decreased by twenty seven percent and the percentage of flights delayed has fallen by eight percentage points. Compared with the summer period of 2003, flights delayed by more than fifteen minutes increased by six percent whereas flights delayed by more than sixty minutes decreased by fifteen percent.

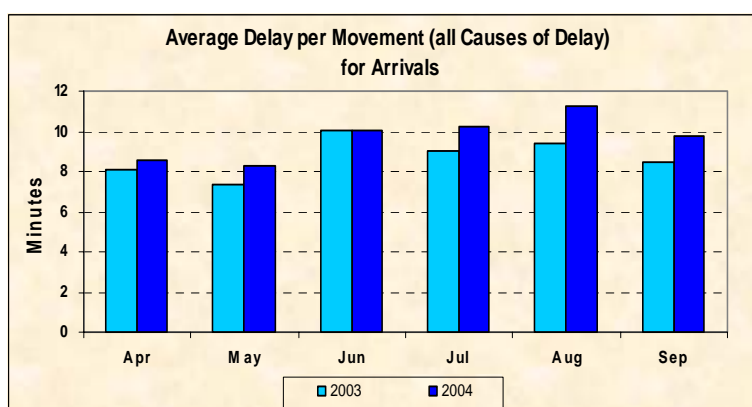
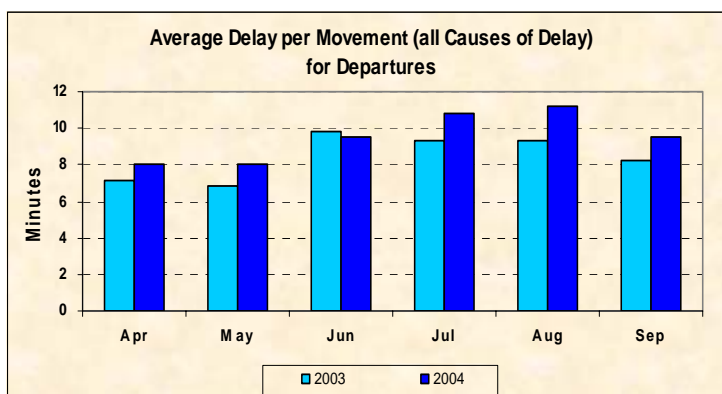
Not all ATFM delay was due to ATC; thirty seven percent of the delay was due to regulations put in place to protect airports. Compared with the summer period of 2003, the share of the delay due to these restrictions increased by three percentage points and the actual amount of the delay was up fifteen percent. Lack of airport capacity accounted for forty one percent of the airport delay, with Weather (thirty percent) and ATC Capacity (sixteen percent) being the other major causes. Compared with the same period of last year, there were rises in Industrial Action Non ATC and Accident/Incident. To offset these increases, there were decreases in ATC Industrial Action, ACT Routeings and ATC Staffing. The airports of Zurich, London, Frankfurt, Vienna and Paris were the most affected by airport-related regulations.

Based on the locations of the most penalising regulations, traffic (including overflights) using the airspace of France, the United Kingdom, Switzerland and Italy had the largest share of the delay. Together, they accounted for forty seven percent of the total ATFM delay in the ECAC region. Compared with the summer period of 2003, Austria had the largest increase (up five percentage points) and was followed by Spain and Ireland whereas France (down ten percentage points) had the largest fall and was followed by Italy, Germany and the United Kingdom.



**ALL CAUSES DELAY SITUATION FOR SUMMER 2004<sup>2</sup> (eCODA)**

The Average Delay per Movement, for departures, for all causes of delay was almost ten minutes; an increase of twelve percent on the summer period of 2003. Forty percent of flights were delayed on departure, with seventeen percent delayed by more than fifteen minutes. However, twelve percent of flights departed before their scheduled take off time.



Arrivals had also a significant increase, with the Average Delay per Movement rising by eleven percent to ten minutes. Thirty eight percent of flights were delayed on arrival, with seventeen percent delayed by more than fifteen minutes. On the positive side, thirty three percent of flights landed before their scheduled time.

Forty eight percent of the busier departure airports (those with at least five thousand four hundred flights) had an Average Delay per Movement of more than ten minutes. The airports of New York and East Midlands were the most affected, with average delays of seventeen minutes and were followed by Rome and Dublin (both with average delays of sixteen minutes) and London/Heathrow (fifteen minutes). Compared with the summer period of 2003, thirty seven percent of the departure airports had an increase in average delay of more than one minute, with the largest rise at Warsaw (up four minutes) followed by New York, London/Heathrow, East Midlands, Manchester and Edinburgh. At the other end of the scale, there were decreases at Prague and Makedonia (both down six minutes). All the airports had a proportion of their traffic departing before their scheduled time; with Alicante having the largest (with twenty seven percent) and Copenhagen the lowest (with three percent).

Turning to the busier destination airports shows that traffic arriving at East Midlands had the largest Average Delay per Movement, with twenty two minutes and was followed by New York (sixteen minutes), London/Heathrow and Manchester (both with fifteen minutes) and Milan, Turin and Alicante (all three with fourteen minutes). Compared with the summer period of 2003, twenty seven percent of the busier destination airports had an increase in average delay of more than one minute, with the largest rise at London/Heathrow (up five minutes), followed by London/Gatwick, Manchester, East Midlands and Vienna. To balance these increases, there were decreases at Prague (down ten minutes), Makedonia, and Venice. Again, all the airports had a proportion of their flights arriving before their scheduled time, with Bristol having the largest, with forty seven percent and Amsterdam the lowest, with fourteen percent.

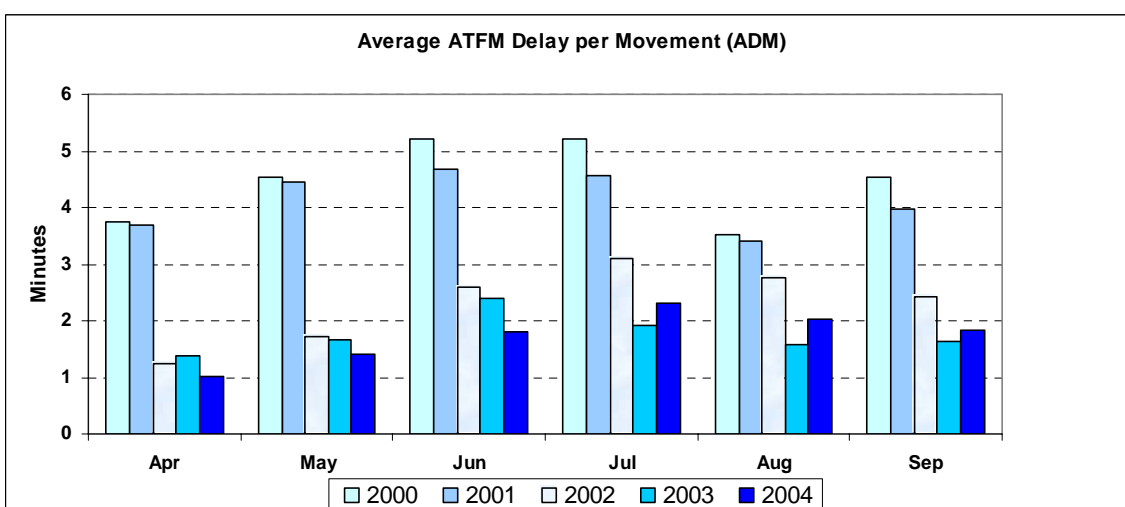
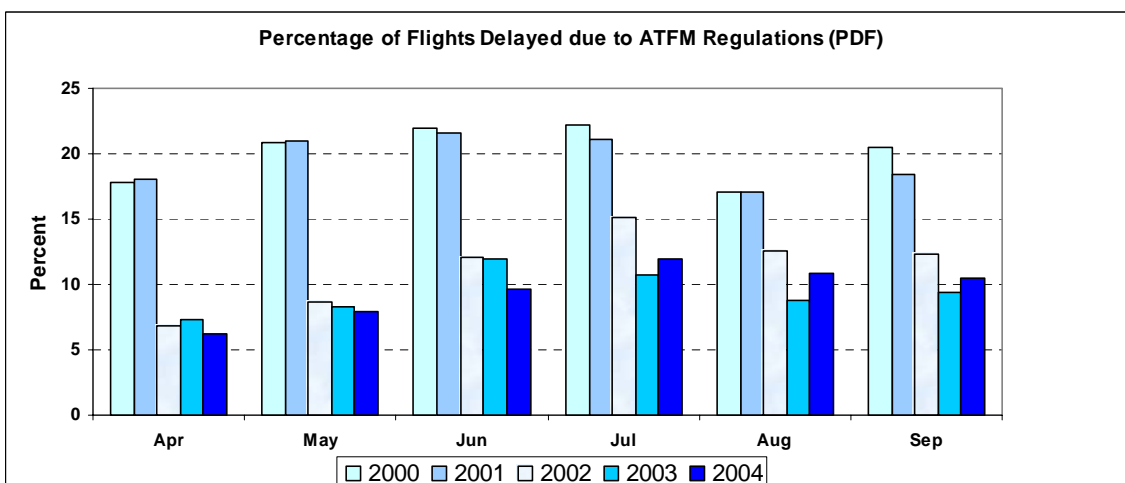
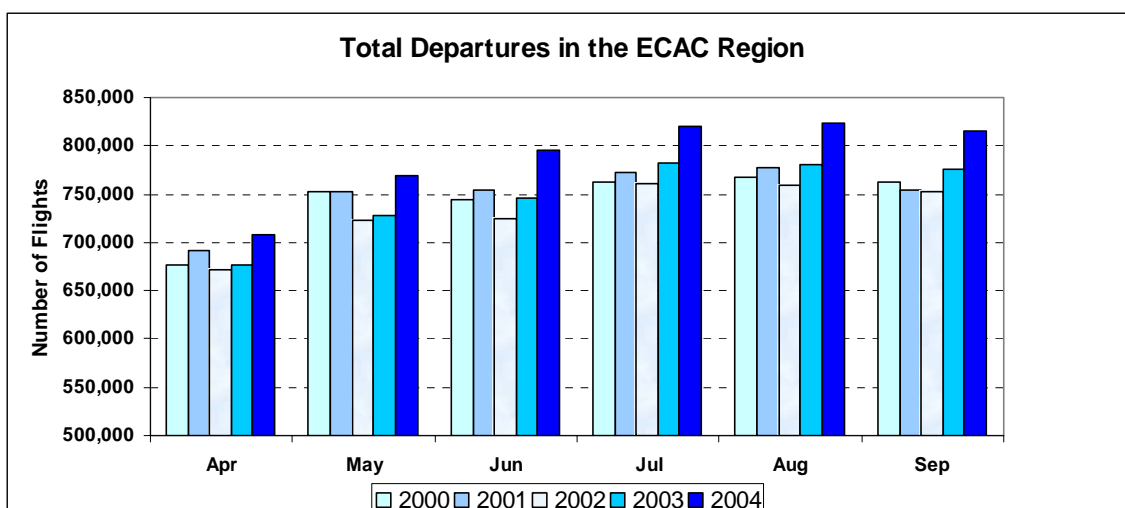
<sup>2</sup> The analysis was based on airline data from eCODA, which, from April to September 2004, contains details on **37%** of IFR GAT flights in Europe.

The most affected city pair, due to all causes of delay, was Rome/Fiumicino-Catania, with an Average Delay per Movement of twenty six minutes and was followed by Rome/Fiumicino/Palermo (twenty three minutes), Madrid-London/Heathrow (nineteen minutes), London/Heathrow-Barcelona and New York-London/Heathrow (both with eighteen minutes). Compared with the summer period of last year, two thirds of the city pairs had an increase in Average Delay per Movement, with nineteen percent of them having a rise of more than three minutes. The largest increase was between Aarhus-Copenhagen (up ten minutes), followed by New York-London/Heathrow, Warsaw-Krakow, Vienna-London/Heathrow and London/Heathrow-Hamburg. At the other end of the scale, seventeen percent of the pairs had a decrease of more than one minute, with the largest falls between Birmingham-Paris/Charles de Gaulle and Paris/Charles de Gaulle-Prague (both down seven minutes).

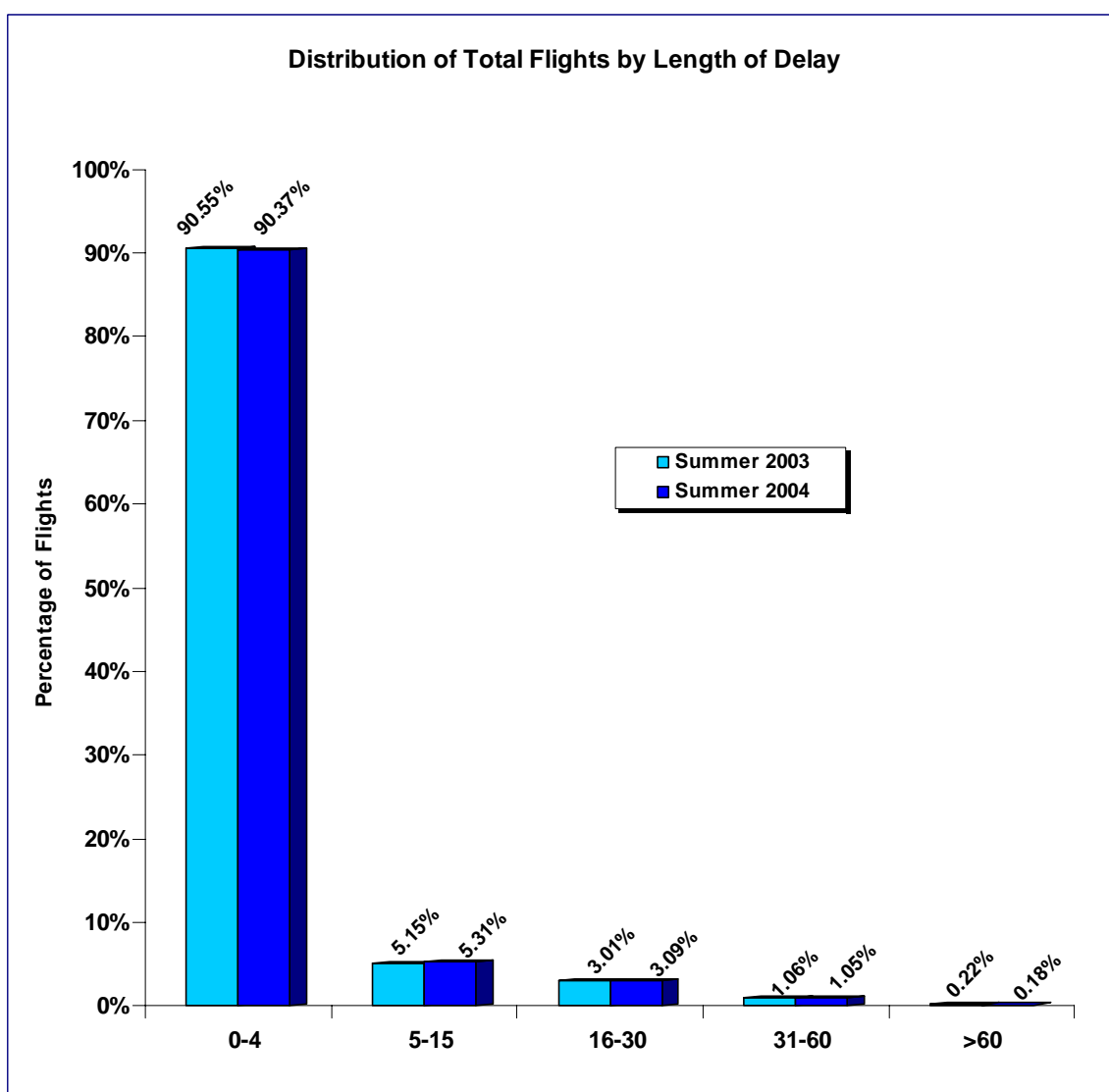
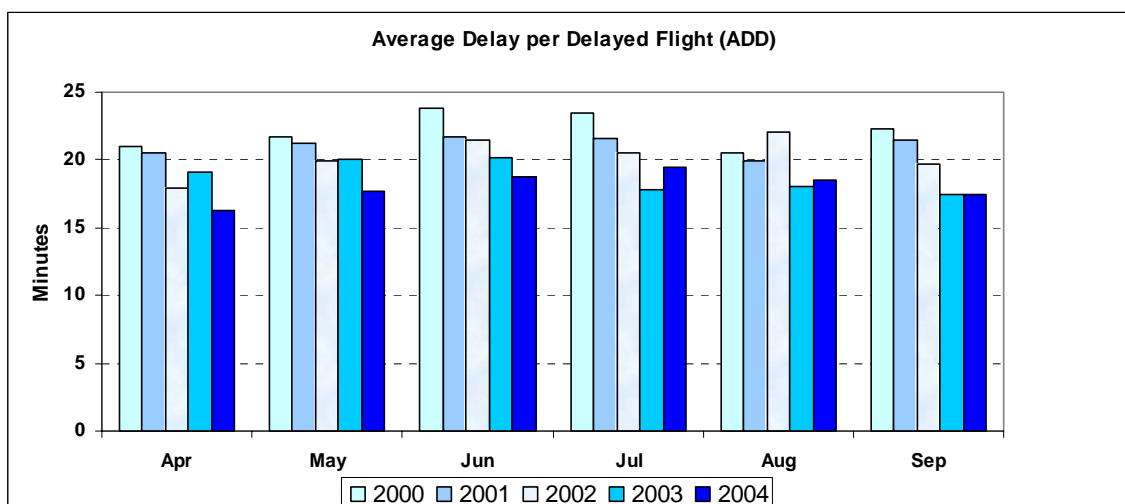
An analysis of the delay causes and categories, grouped by IATA codes, shows that thirty seven percent of them had an increase in delay share, with the largest rises in the Cargo & Mail, Others, ATFM Weather at Destination and Miscellaneous categories. To offset these increases, there were decreases in the Mandatory Security, Passenger & Baggage and Flight Operations & Crewing categories (only those categories with more than one percent of the delay were taken into account).

With nine percent share of the delay, Technical & Aircraft Equipment was the most penalising direct delay category and was followed by Aircraft & Ramp Handling (with seven percent) and ATFM En Route Demand Capacity (with seven percent share of the delay, but down fifteen percent on the summer period of 2003).

## 2. Year on Year Trends in Main Indicators



Source : CFMU ATFM Data



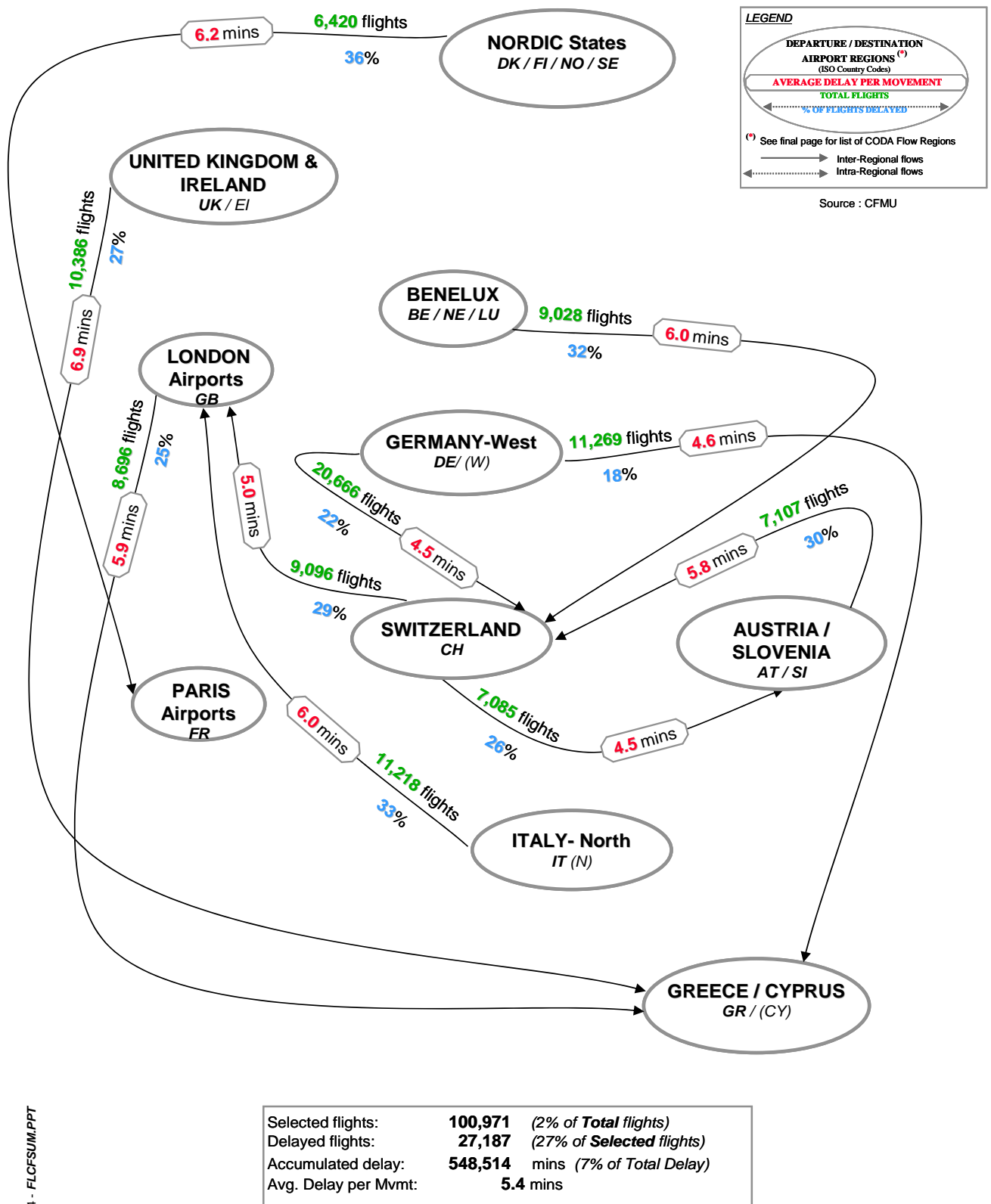
Source : CFMU ATFM Data

## 3. Busiest Departure Airports (ranked by Total Flights)

Rank	Airport	Total Flights	Delayed Flights	% Delayed Flights	Total Delay	Av.Delay/ Delayed Flight	Av.Delay/ Movement	Flights Delayed >60 mins
1	Paris/Charles-De-Gaulle	136,297	17,894	13.13	284,526	15.9	2.09	166
2	Frankfurt	125,697	13,509	10.75	218,671	16.19	1.74	139
3	London/Heathrow	121,117	13,908	11.48	238,800	17.17	1.97	175
4	Amsterdam	108,702	13,460	12.38	232,343	17.26	2.14	176
5	Madrid/Barajas	102,890	7,528	7.32	138,060	18.34	1.34	147
6	Munich	99,042	11,899	12.01	208,440	17.52	2.1	126
7	Rome/Fiumicino	80,277	7,297	9.09	132,568	18.17	1.65	137
8	Barcelona	76,364	7,467	9.78	136,619	18.3	1.79	129
9	Copenhagen/Kastrup	69,714	6,247	8.96	107,368	17.19	1.54	77
10	London/Gatwick	68,977	8,546	12.39	173,045	20.25	2.51	277
11	Zurich	66,195	9,927	15	166,549	16.78	2.52	99
12	Brussels	63,858	8,272	12.95	132,485	16.02	2.07	75
13	Vienna	63,776	14,133	22.16	252,117	17.84	3.95	194
14	Stockholm/Arlanda	60,993	3,750	6.15	68,624	18.3	1.13	68
15	Manchester	59,873	8,778	14.66	174,113	19.84	2.91	276
16	Paris/Orly	58,257	5,025	8.63	79,942	15.91	1.37	42
17	Milan/Malpensa	57,600	8,157	14.16	150,706	18.48	2.62	102
18	Palma De Mallorca	55,977	6,458	11.54	113,259	17.54	2.02	101
19	Dusseldorf	52,699	9,623	18.26	169,045	17.57	3.21	113
20	Athens	51,488	4,122	8.01	87,601	21.25	1.7	168
21	London/Stansted	50,086	5,784	11.55	105,623	18.26	2.11	125
22	Oslo/Gardermoen	49,682	3,633	7.31	78,883	21.71	1.59	171
23	Dublin	47,154	9,354	19.84	178,642	19.1	3.79	154
24	Istanbul/Ataturk	46,092	2,216	4.81	37,939	17.12	0.82	37
25	Helsinki-Vantaa	41,749	3,022	7.24	52,724	17.45	1.26	39
26	Cologne/Bonn	38,478	4,227	10.99	76,423	18.08	1.99	73
27	Prague/Ruzyně	37,811	6,218	16.44	105,318	16.94	2.79	67
28	Stuttgart	37,443	4,577	12.22	83,347	18.21	2.23	54
29	Nice	37,075	4,987	13.45	89,854	18.02	2.42	75
30	Hamburg	36,518	5,300	14.51	89,364	16.86	2.45	50
31	Geneva	36,487	6,235	17.09	105,249	16.88	2.88	67
32	Berlin-Tegel	34,078	4,985	14.63	87,621	17.58	2.57	59
33	Lisbon	34,040	3,375	9.91	55,164	16.34	1.62	28
34	Warsaw/Okecie	32,731	5,939	18.14	106,874	18	3.27	62
35	Malaga	32,125	4,388	13.66	76,578	17.45	2.38	41
36	Lyon/Sartolas	31,746	3,296	10.38	59,646	18.1	1.88	44
37	Edinburgh	31,062	3,036	9.77	58,799	19.37	1.89	74
38	Birmingham	30,632	3,605	11.77	69,942	19.4	2.28	101
39	Milan/Linate	30,482	3,958	12.98	69,898	17.66	2.29	65
40	Antalya	29,335	2,290	7.81	42,220	18.44	1.44	48
41	Budapest/Ferihegy	29,121	6,746	23.17	124,411	18.44	4.27	82
42	Glasgow	27,288	2,521	9.24	54,442	21.6	2	102
43	Las Palmas	25,108	1,646	6.56	33,038	20.07	1.32	69
44	Marseille/Provence	24,568	1,520	6.19	23,912	15.73	0.97	21
45	London/Luton	23,430	2,757	11.77	55,017	19.96	2.35	73
46	Venice/Tessera	21,835	4,725	21.64	84,304	17.84	3.86	45
47	Toulouse/Blagnac	21,777	1,518	6.97	23,663	15.59	1.09	19
48	Hanover	20,980	3,164	15.08	57,244	18.09	2.73	48
49	Moskva/Sheremetyevo	20,341	0	0	0	0	0	0
50	Bergen/Flesland	19,808	624	3.15	13,587	21.77	0.69	33
51	Alicante	19,368	2,910	15.02	83,713	28.77	4.32	322
52	Napoli Capodichino	17,398	1,746	10.04	31,477	18.03	1.81	29
53	Gotenborg/Landvetter	16,903	1,623	9.6	26,778	16.5	1.58	31
54	East Midlands	16,758	1,655	9.88	33,791	20.42	2.02	58
55	Ibiza	16,420	1,533	9.34	28,793	18.78	1.75	35
56	Basle/Mulhouse	16,175	2,206	13.64	38,319	17.37	2.37	32
57	Tel Aviv/Ben Gurion	16,089	1,907	11.85	37,082	19.45	2.3	32
58	Bristol/Lulsgate	15,925	1,794	11.27	41,415	23.09	2.6	54
59	Kiev - Borispol	15,730	1,154	7.34	19,056	16.51	1.21	7
60	Valencia	15,415	1,273	8.26	22,266	17.49	1.44	21
61	Luxembourg	15,364	2,544	16.56	44,076	17.33	2.87	24
62	New York	15,175	0	0	0	0	0	0
63	Catania Fontanarossa	15,069	1,330	8.83	25,623	19.27	1.7	25
64	Makedonia	15,003	854	5.69	16,741	19.6	1.12	30

Source: CFMU ATFM Data

## 4. Most Affected Traffic Flows by CODA Regions



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ATFM Delay Situation on **10** Regional CODA Traffic Flows (>6,000 flights) in **Summer 2004**

## 5. Most Affected and Most Dense Traffic Flows

**MOST AFFECTED TRAFFIC FLOWS (CFMU)**

Rank	Departure	Destination	TTF	TRF	TDF	PDF	TDM	ADD	ADM
1	United Kingdom & Ireland	Greece/Cyprus	10,386	4,329	2,807	27.03	71,960	25.64	6.93
2	Nordic States	Paris Airports	6,420	4,052	2,321	36.15	40,088	17.27	6.24
3	BENELUX	Switzerland	9,028	4,694	2,847	31.54	54,293	19.07	6.01
4	Italy-North	London Airports	11,218	6,297	3,663	32.65	66,898	18.26	5.96
5	London Airports	Greece/Cyprus	8,696	3,359	2,214	25.46	51,667	23.34	5.94
6	Austria/Slovenia	Switzerland	7,107	3,985	2,139	30.10	40,896	19.12	5.75
7	Switzerland	London Airports	9,096	4,854	2,679	29.45	46,193	17.24	5.08
8	Germany-West	Greece/Cyprus	11,269	3,452	2,059	18.27	51,412	24.97	4.56
9	Germany-West	Switzerland	20,666	8,492	4,608	22.30	93,262	20.24	4.51
10	Switzerland	Austria/Slovenia	7,085	3,127	1,850	26.11	31,845	17.21	4.49
11	United Kingdom & Ireland	Paris Airports	12,442	4,691	2,691	21.63	55,529	20.64	4.46
12	BENELUX	Greece/Cyprus	6,462	2,391	1,232	19.07	28,816	23.39	4.46
13	United Kingdom & Ireland	Iberian Peninsula/Canaria	22,414	6,159	3,767	16.81	98,319	26.10	4.39
14	Central Europe	Austria/Slovenia	9,970	4,683	2,685	26.93	43,135	16.07	4.33
15	London Airports	Italy-North	11,240	5,193	2,766	24.61	47,699	17.24	4.24
16	London Airports	Switzerland	9,088	3,592	2,095	23.05	38,472	18.36	4.23
17	Greece/Cyprus	United Kingdom & Ireland	10,380	3,771	2,202	21.21	43,438	19.73	4.18
18	Greece/Cyprus	London Airports	8,701	3,647	1,989	22.86	35,410	17.80	4.07
19	Italy-North	BENELUX	10,435	4,918	2,580	24.72	42,285	16.39	4.05
20	Italy-North	Paris Airports	11,240	5,697	2,515	22.38	44,886	17.85	3.99
Totals			213,343	91,383	51,709	24.24	1,026,503	19.85	4.81

**MOST DENSE TRAFFIC FLOWS (CFMU)**

Rank	Departure	Destination	TTF	TRF	TDF	PDF	TDM	ADD	ADM	ADM-Rank
1	Nordic States	Nordic States	362,909	9,739	4,296	1.18	94,387	21.97	0.26	32
2	United Kingdom & Ireland	United Kingdom & Ireland	184,757	21,957	11,035	5.97	204,895	18.57	1.11	20
3	Iberian Peninsula/Canaria	Iberian Peninsula/Canaria	167,229	16,206	7,519	4.50	157,235	20.91	0.94	24
4	Germany-West	Germany-West	131,076	17,356	8,353	6.37	148,893	17.83	1.14	18
5	Greece/Cyprus	Greece/Cyprus	76,875	4,330	2,529	3.29	78,167	30.91	1.02	22
6	Non ECAC	Non ECAC	73,835	619	377	0.51	8,327	22.09	0.11	34
7	Italy-North	Italy-South/Malta	63,263	11,495	6,793	10.74	127,237	18.73	2.01	10
8	Italy-South/Malta	Italy-North	63,177	8,744	4,765	7.54	93,704	19.67	1.48	13
9	London Airports	United Kingdom & Ireland	57,764	9,371	5,302	9.18	99,357	18.74	1.72	12
10	United Kingdom & Ireland	London Airports	57,535	13,885	7,537	13.10	145,411	19.29	2.53	5
11	Italy-South/Malta	Italy-South/Malta	54,791	5,717	2,854	5.21	57,649	20.20	1.05	21
12	Non ECAC	London Airports	52,181	1,787	1,011	1.94	19,588	19.37	0.38	31
13	Germany-West	Non ECAC	51,853	12,662	6,525	12.58	107,278	16.44	2.07	8
14	Turkey	Turkey	51,767	488	295	0.57	9,563	32.42	0.18	33
15	London Airports	Non ECAC	51,755	9,577	5,587	10.80	94,817	16.97	1.83	11
16	Non ECAC	Germany-West	51,654	2,623	1,207	2.34	19,947	16.53	0.39	30
17	Balearics/Spain East	Iberian Peninsula/Canaria	49,108	8,921	3,526	7.18	60,664	17.20	1.24	15
18	Iberian Peninsula/Canaria	Balearics/Spain East	48,983	8,927	3,875	7.91	69,242	17.87	1.41	14
19	Paris Airports	Non ECAC	45,033	10,675	5,958	13.23	97,940	16.44	2.17	7
20	Non ECAC	Paris Airports	44,786	2,977	1,167	2.61	20,069	17.20	0.45	29
21	Balearics/Spain East	Balearics/Spain East	44,558	3,492	1,722	3.86	43,342	25.17	0.97	23
22	Germany-East/Czech Rep	Germany-West	41,015	6,304	2,635	6.42	45,794	17.38	1.12	19
23	Germany-West	Germany-East/Czech Rep	40,848	5,055	1,685	4.13	26,704	15.85	0.65	25
24	Central Europe	Central Europe	38,890	2,368	1,196	3.08	18,731	15.66	0.48	27
25	France North	France North	33,664	580	213	0.63	2,899	13.61	0.09	35

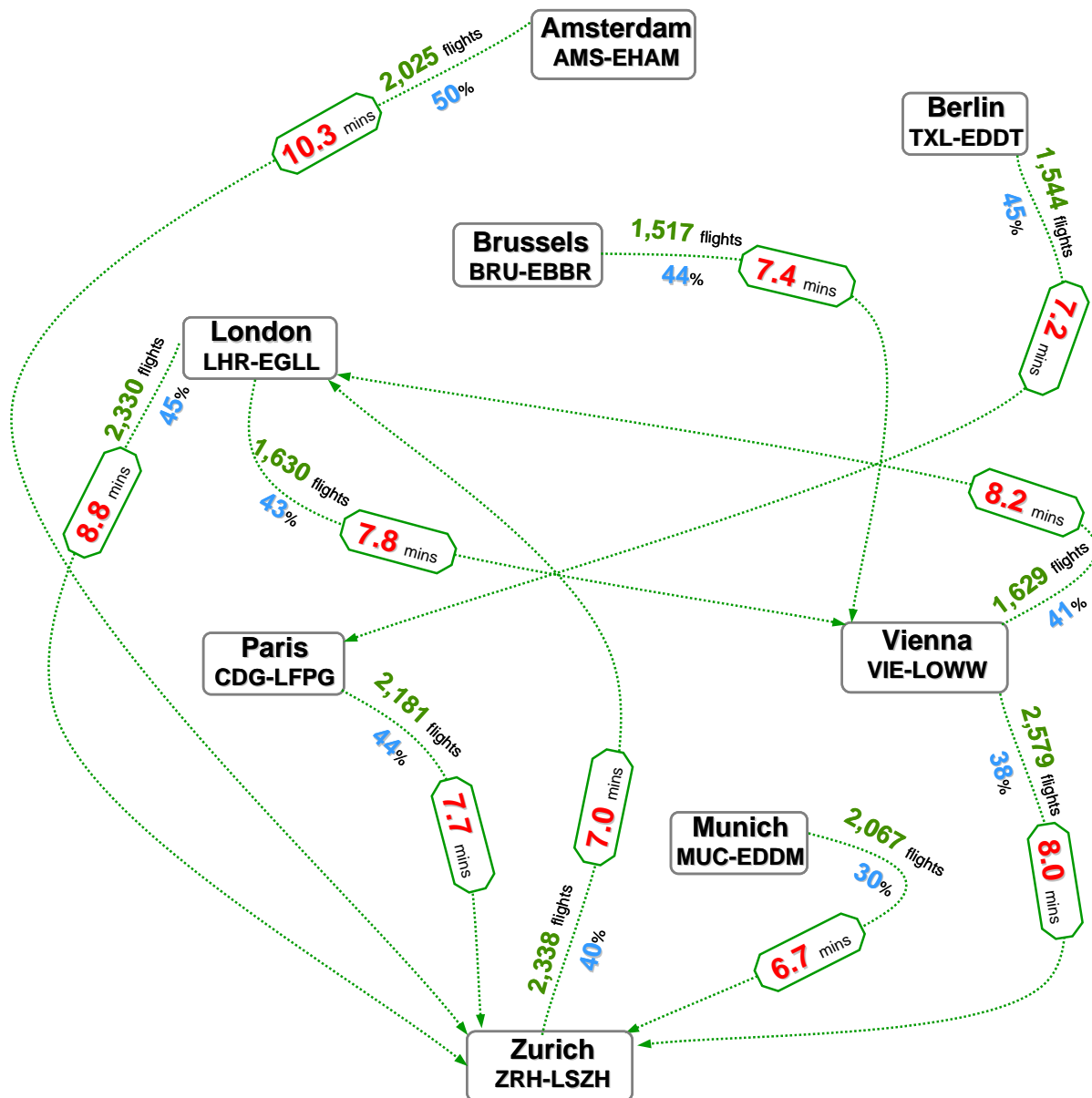
Source: CFMU ATFM Data

## 6. Most Affected City Pairs

**AVERAGE DELAY PER MOVEMENT**

Source : CFMU

Total Number of Flights &amp; % of Flights Delayed



Selected flights:	19,840	(0.4% of Total flights)
Delayed flights:	8,279	(42% of Selected flights)
Accumulated delay:	157,328	mins (2% of Total Delay)
Avg. Delay per Mvmt.:	7.9	mins

20/10/04 - CPCFSUM.PPT

**ATFM Delay Situation on 10 City Pairs (>1,500 flights) in Summer 2004**



## 7. Most Affected and Most Dense City Pairs

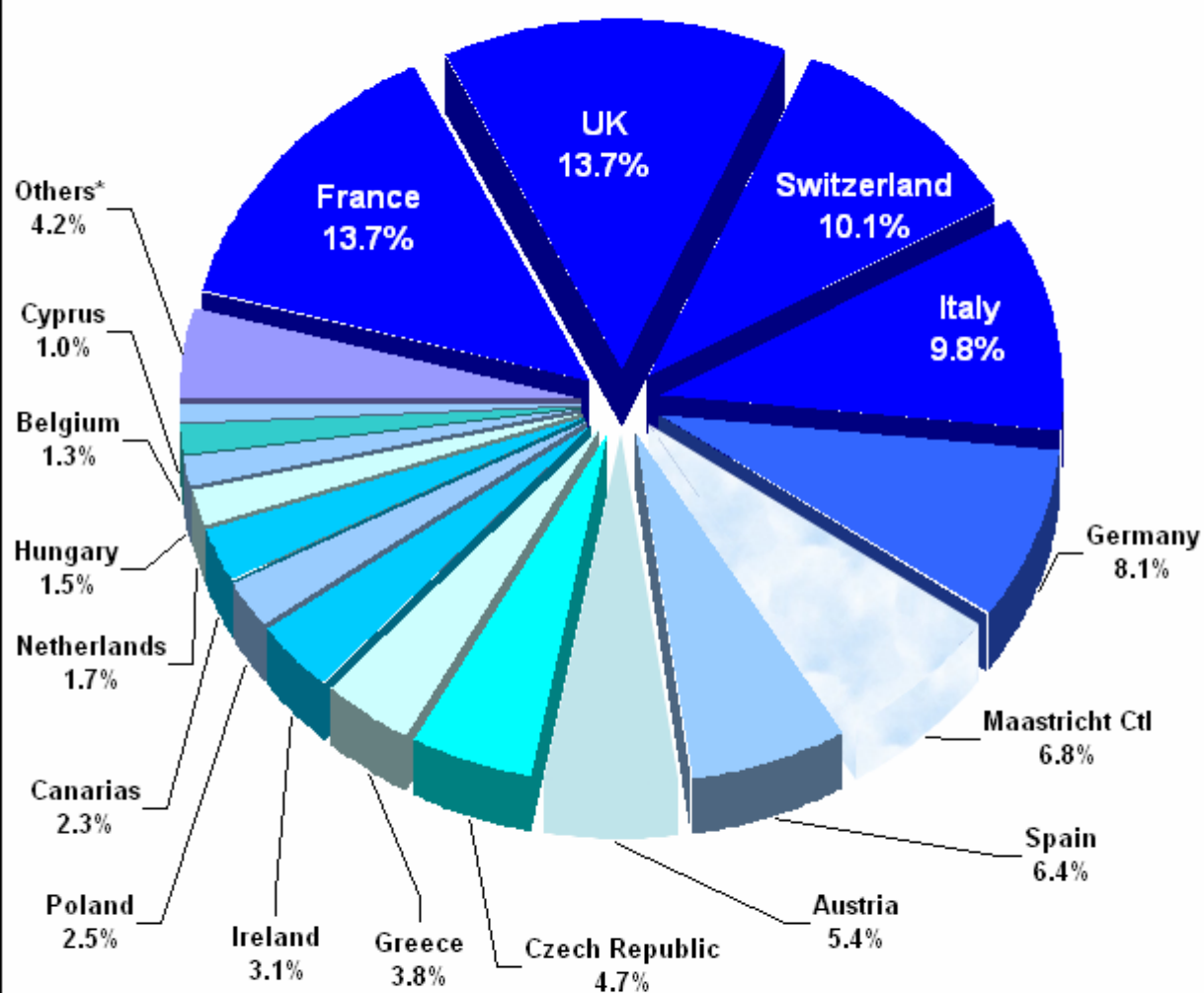
MOST AFFECTED CITY PAIRS (CFMU)									
Rank	Departure	Destination	TTF	TRF	TDF	PDF	TDM	ADD	ADM
1	Amsterdam	Zurich	2,025	1,425	1,012	49.98	20,886	20.64	10.31
2	London/Heathrow	Zurich	2,330	1,670	1,046	44.89	20,420	19.52	8.76
3	Vienna	London/Heathrow	1,629	1,058	672	41.25	13,332	19.84	8.18
4	Vienna	Zurich	2,579	1,701	977	37.88	20,555	21.04	7.97
5	London/Heathrow	Vienna	1,630	1,077	704	43.19	12,659	17.98	7.77
6	Paris/Charles-De-Gaulle	Zurich	2,181	1,591	951	43.60	16,794	17.66	7.70
7	Brussels	Vienna	1,517	1,013	665	43.84	11,234	16.89	7.41
8	Berlin-Tegel	Paris/Charles-De-Gaulle	1,544	1,062	695	45.01	11,168	16.07	7.23
9	Zurich	London/Heathrow	2,338	1,627	938	40.12	16,383	17.47	7.01
10	Munich	Zurich	2,067	1,041	619	29.95	13,897	22.45	6.72
11	Dusseldorf	Zurich	2,035	1,344	740	36.36	13,570	18.34	6.67
12	Dublin	Paris/Charles-De-Gaulle	1,701	932	565	33.22	11,047	19.55	6.49
13	Berlin-Tegel	Zurich	1,645	957	502	30.52	10,545	21.01	6.41
14	Geneva	London/Heathrow	1,827	1,114	632	34.59	11,624	18.39	6.36
15	Rome/Fiumicino	London/Heathrow	1,932	1,083	667	34.52	12,264	18.39	6.35
16	Vienna	Frankfurt	2,115	1,100	722	34.14	13,406	18.57	6.34
17	Munich	London/Heathrow	1,998	1,041	610	30.53	12,032	19.72	6.02
18	Prague/Ruzyne	Paris/Charles-De-Gaulle	1,658	1,115	609	36.73	9,648	15.84	5.82
19	Hamburg	Zurich	1,769	864	518	29.28	10,210	19.71	5.77
20	Dublin	London/Heathrow	3,557	1,748	1,047	29.43	20,525	19.60	5.77
Totals			40,077	24,563	14,891	37.16	282,199	18.95	7.04

MOST DENSE CITY PAIRS (CFMU)										
Rank	Departure	Destination	TTF	TRF	TDF	PDF	TDM	ADD	ADM	ADM-rank
1	Barcelona	Madrid/Barajas	10,855	3,959	1,462	13.47	24,065	16.46	2.22	5
2	Madrid/Barajas	Barcelona	10,682	2,976	1,283	12.01	22,603	17.62	2.12	7
3	Milan/Linate	Rome/Fiumicino	6,865	1,891	1,075	15.66	18,628	17.33	2.71	3
4	Rome/Fiumicino	Milan/Linate	6,840	239	126	1.84	2,757	21.88	0.40	28
5	Barcelona	Palma De Mallorca	5,546	157	83	1.50	1,961	23.63	0.35	30
6	Palma De Mallorca	Barcelona	5,262	1,187	511	9.71	10,878	21.29	2.07	8
7	London/Heathrow	Paris/Charles-De-Gaulle	4,992	1,270	598	11.98	11,007	18.41	2.20	6
8	Paris/Charles-De-Gaulle	London/Heathrow	4,976	1,705	994	19.98	19,422	19.54	3.90	1
9	Toulouse/Blagnac	Paris/Orly	4,701	156	63	1.34	992	15.75	0.21	31
10	Paris/Orly	Toulouse/Blagnac	4,698	759	342	7.28	4,898	14.32	1.04	21
11	Makedonia	Athens	4,556	44	24	0.53	454	18.92	0.10	33
12	Athens	Makedonia	4,550	729	394	8.66	9,401	23.86	2.07	9
13	Madrid/Barajas	Palma De Mallorca	4,527	176	98	2.16	1,837	18.74	0.41	27
14	Paris/Orly	Nice	4,495	724	319	7.10	4,780	14.98	1.06	20
15	Nice	Paris/Orly	4,495	275	129	2.87	2,624	20.34	0.58	24
16	Palma De Mallorca	Madrid/Barajas	4,437	1,141	462	10.41	7,054	15.27	1.59	15
17	Amsterdam	London/Heathrow	4,353	1,474	734	16.86	14,494	19.75	3.33	2
18	London/Heathrow	Amsterdam	4,351	440	257	5.91	5,867	22.83	1.35	18
19	Cologne/Bonn	Munich	4,135	536	234	5.66	4,734	20.23	1.14	19
20	Dusseldorf	Munich	4,132	934	429	10.38	7,850	18.30	1.90	12
21	Den Helder/De Kooy	Unknown	4,110	0	0	0.00	0	0.00	0.00	34
22	Munich	Dusseldorf	4,074	815	351	8.62	6,288	17.91	1.54	16
23	Berlin-Tegel	Munich	4,011	1,007	294	7.33	5,416	18.42	1.35	17
24	Hamburg	Munich	4,002	1,044	440	10.99	7,944	18.05	1.99	10
25	Munich	Cologne/Bonn	3,989	248	93	2.33	1,555	16.72	0.39	29

Source: CFMU ATFM Data

## 8. ATFM Delay Share by Country

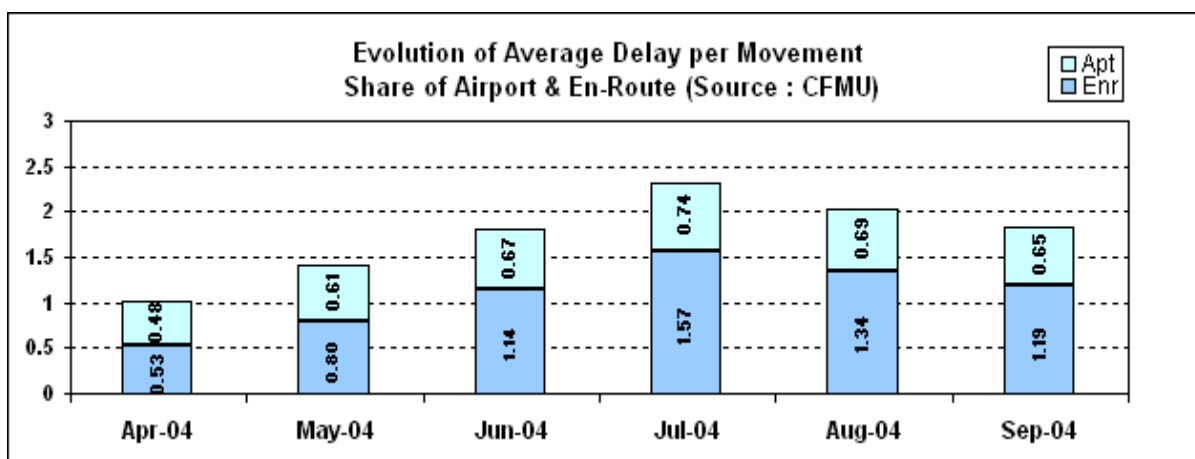
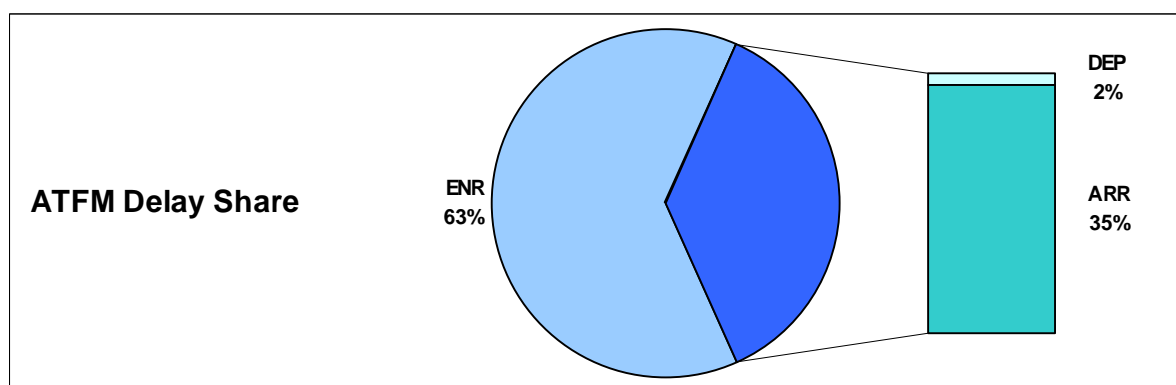
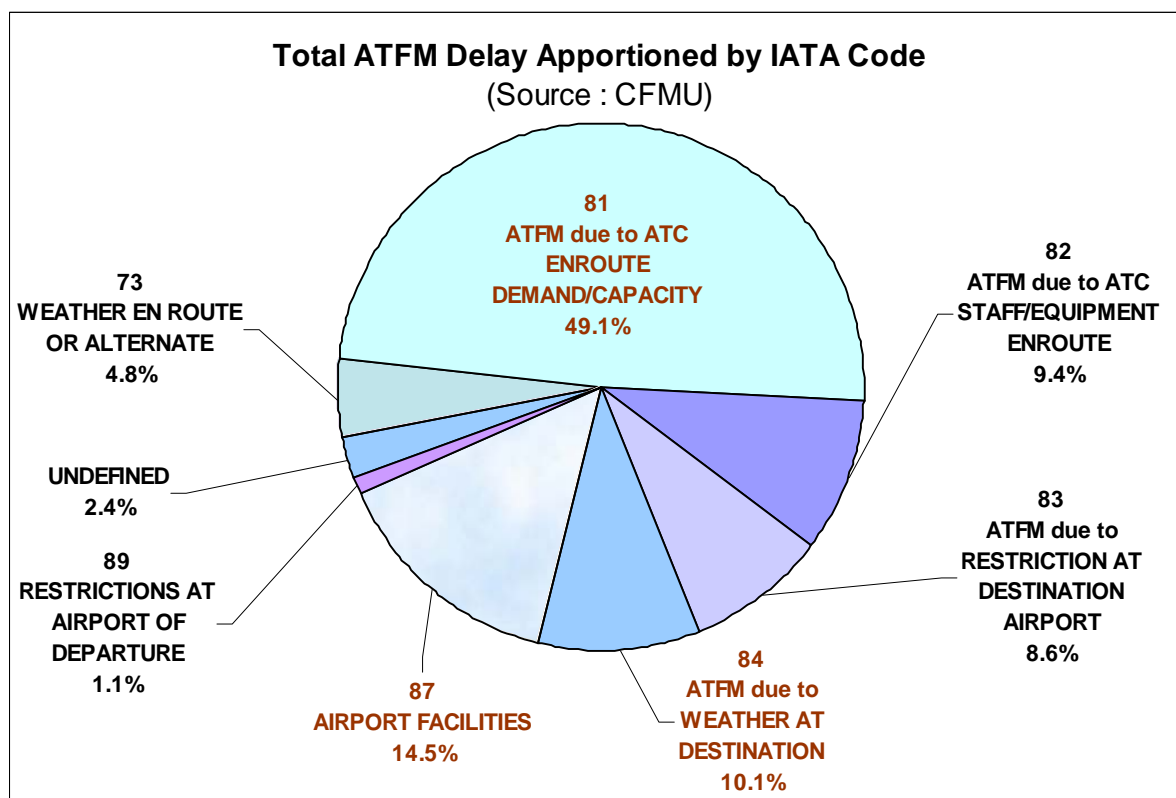
**ATFM Delay Share as Imposed by Country  
based on the most penalising regulation  
(Source : CFMU)**



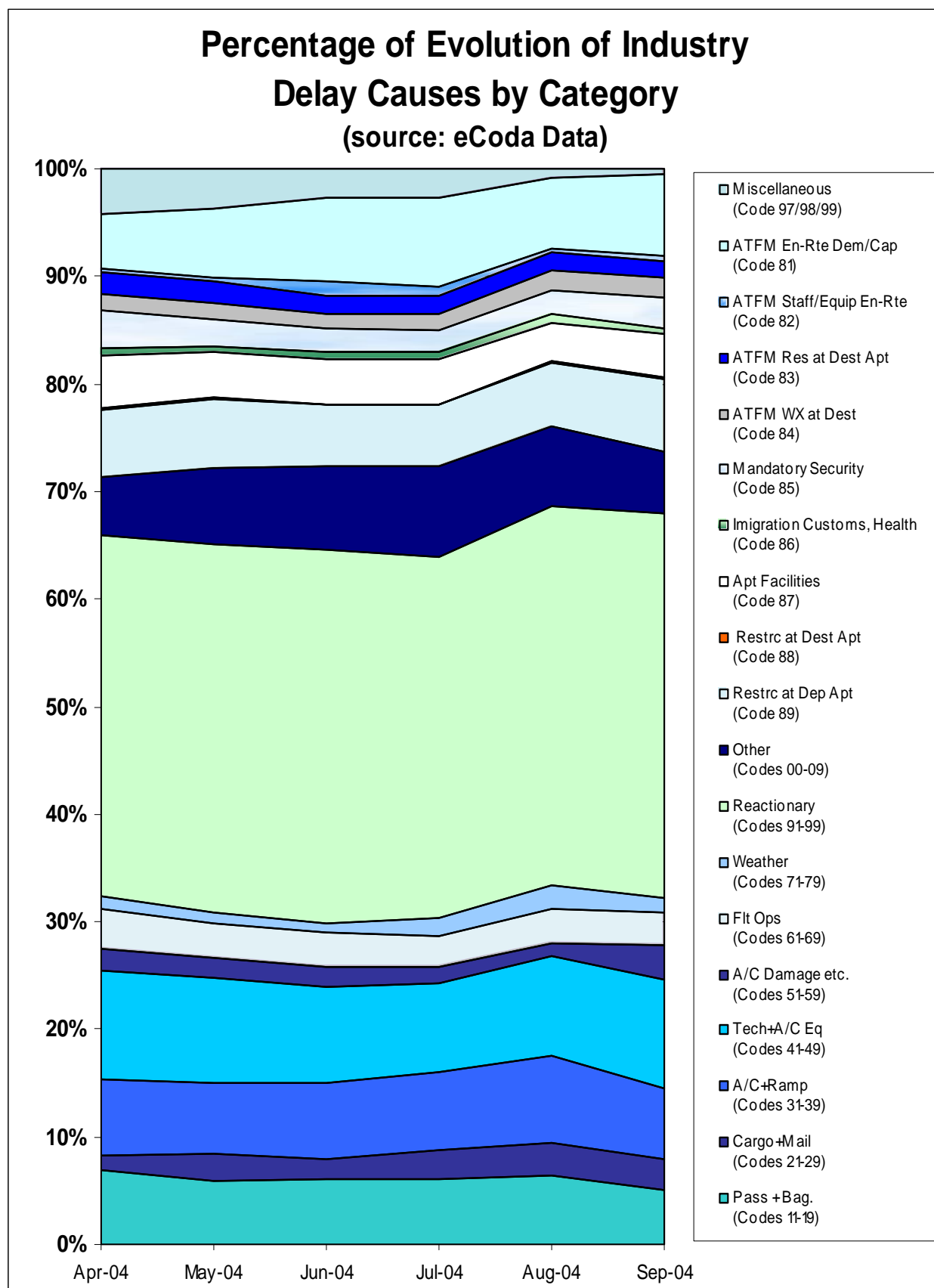
\* Others = Albania, Croatia, Denmark, Egypt, Finland, Iceland, Morocco, Norway, Portugal, Slovakia, Slovenia, Sweden, Turkey and Serbia & Montenegro.  
(The remaining countries did not cause delay)

Apr --> Sep 2004

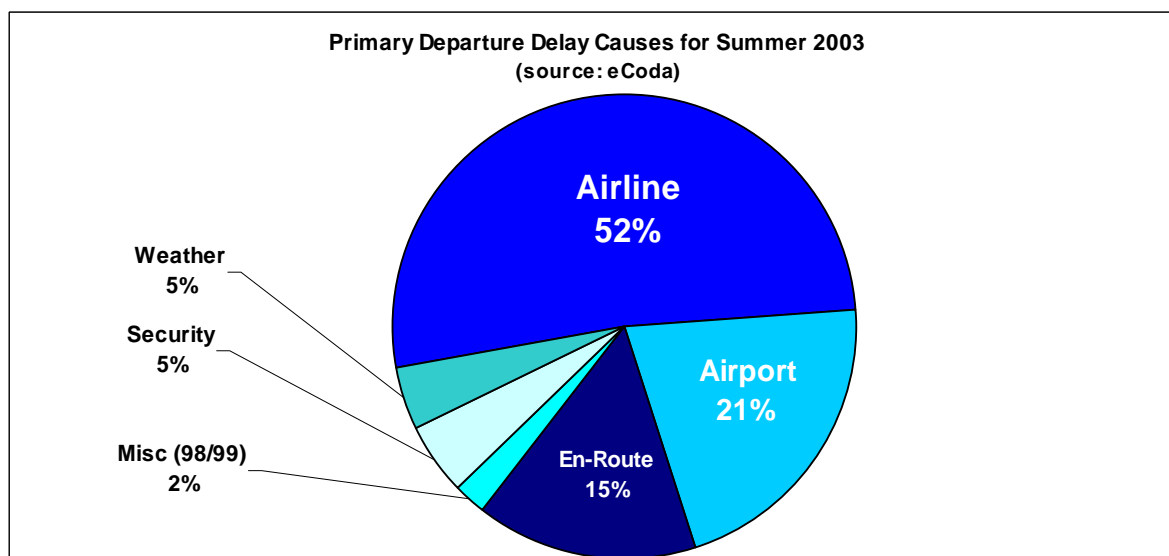
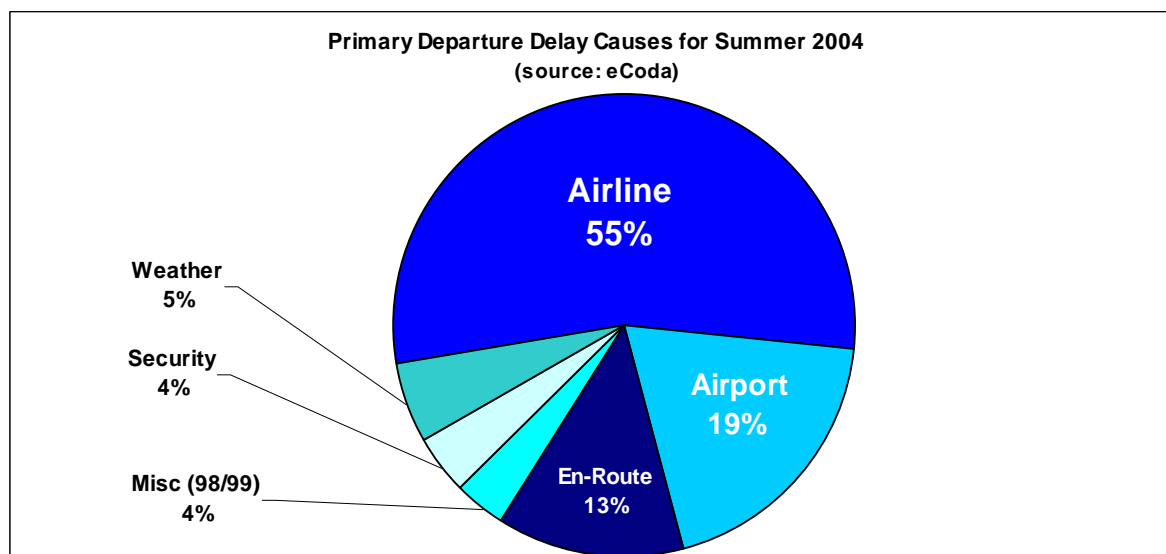
## 9. Reasons for ATFM Delay



## 10. Consolidated Evolution of Industry Delay Causes by Category

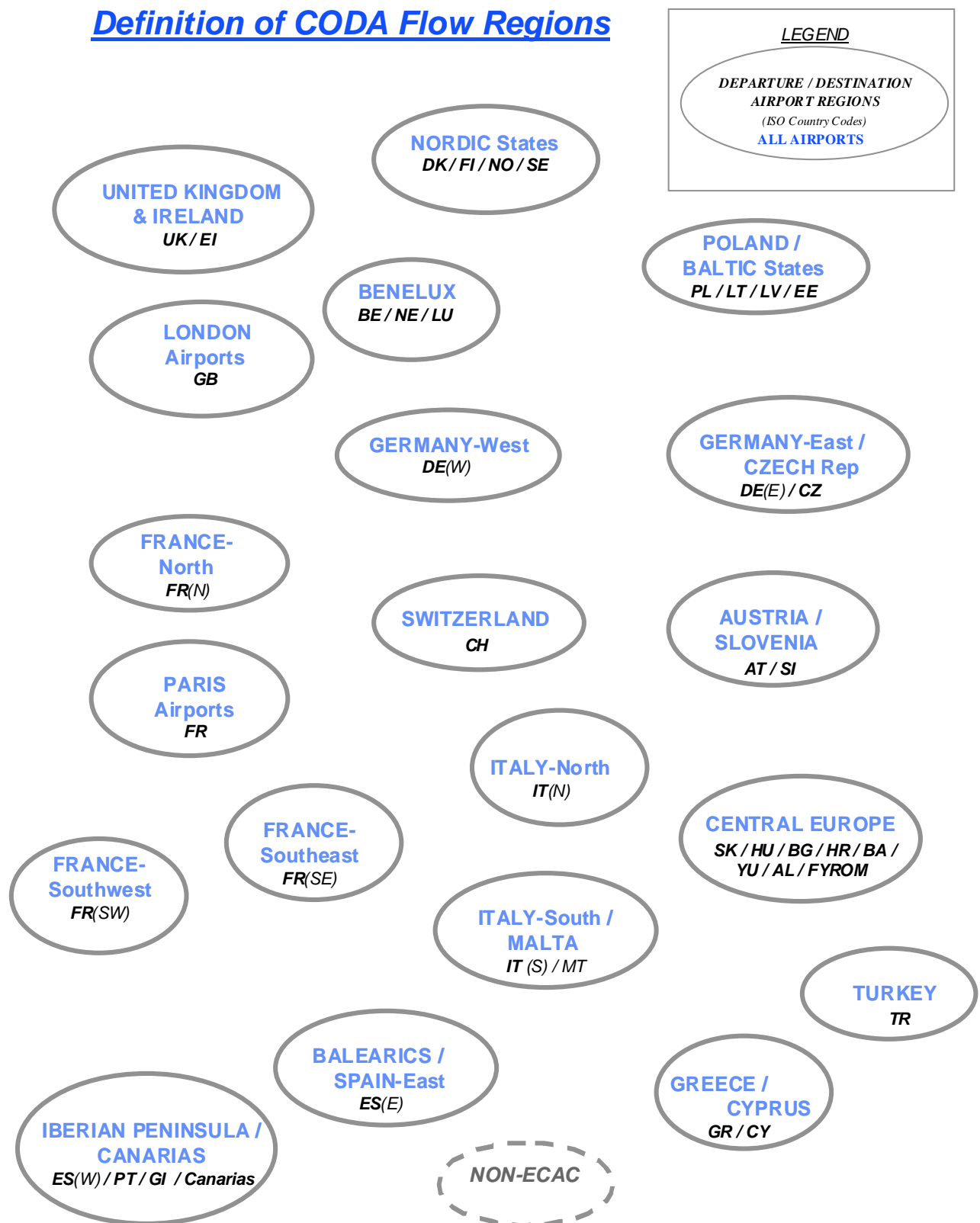


## 11. Primary Departure Delay Causes



eCODA Cause	Description	IATA Code
Airline	Passengers + Baggage	11-19
	Cargo + Mail	21-29
	Aircraft + Ramp Handling	31-39
	Technical + Aircraft Equipment	41-49
	Aircraft Damage and Ops Computer Failure	51-59
	Flight Operations	61-69
	Other Airline-Related Causes	Others
Airport	ATFM due to Restriction at Destination Airport	83
	Immigration, Customs, Health	86
	Airport Facilities	87
	Restriction at Destination Airport	88
	Restriction at Airport of Departure, with or without ATFM	89
En-Route	ATFM due to ATC En-Rte Demand Capacity	81
	ATFM due to ATC Staff/Equipment En-Route	82
Misc	Miscellaneous	98-99
Security	Mandatory Security	85
Weather	Weather	71-79
	ATFM due to Weather at Destination	84

## Definition of CODA Flow Regions (Annex 1)

Definition of CODA Flow Regions

## Glossary of Terms and Abbreviations (Annex 2)

### Delay Parameter Abbreviations

<b>TTF</b>	Total Flights
<b>TRF</b>	Total Regulated Flights
<b>TDF</b>	Total Delayed Flights
<b>PRF</b>	Percentage of Regulated Flights
<b>PDF</b>	Percentage of Delayed Flights
<b>TDM</b>	Total Delay in Minutes
<b>ADM</b>	Average Delay per Movement
<b>ADR</b>	Average Delay per Regulated Flight
<b>ADD</b>	Average Delay per Delayed Flight

### Glossary of Terms

<b>AEA</b>	Association of European Airlines
<b>ATFM</b>	Air Traffic Flow Management
<b>ATS</b>	Air Traffic Services
<b>CFMU</b>	Central Flow Management Unit
<b>CODA</b>	Central Office for Delay Analysis
<b>EATMP</b>	European Air Traffic Management Program
<b>ECAC</b>	European Civil Aviation Conference
<b>EDAS</b>	European Delay Analysis System
<b>ERA</b>	European Regions Airline Association
<b>EURACA</b>	European Air Carrier Assembly
<b>IACA</b>	International Air Carrier Association
<b>IATA</b>	International Air Transport Association

## Standard IATA Delay Codes (Annex 3)

### Others

00-05	AIRLINE INTERNAL CODES
06 (OA)	NO GATE/STAND AVAILABILITY DUE TO OWN AIRLINE ACTIVITY
09 (SG)	SCHEDULED GROUND TIME LESS THAN DECLARED MINIMUM GROUND TIME

### Passenger and Baggage

11 (PD)	LATE CHECK-IN, acceptance after deadline
12 (PL)	LATE CHECK-IN, congestions in check-in area
13 (PE)	CHECK-IN ERROR, passenger and baggage
14 (PO)	OVERSALES, booking errors
15 (PH)	BOARDING, discrepancies and paging, missing checked-in passenger
16 (PS)	COMMERCIAL PUBLICITY/PASSENGER CONVENIENCE, VIP, press, ground meals and missing personal items
17 (PC)	CATERING ORDER, late or incorrect order given to supplier
18 (PB)	BAGGAGE PROCESSING, sorting etc.

### Cargo and Mail

21 (CD)	DOCUMENTATION, errors etc.
22 (CP)	LATE POSITIONING
23 (CC)	LATE ACCEPTANCE
24 (CI)	INADEQUATE PACKING
25 (CO)	OVERSALES, booking errors
26 (CU)	LATE PREPARATION IN WAREHOUSE
27 (CE)	DOCUMENTATION, PACKING etc ( <i>Mail Only</i> )
28 (CL)	LATE POSITIONING ( <i>Mail Only</i> )
29 (CA)	LATE ACCEPTANCE ( <i>Mail Only</i> )

### Aircraft and Ramp Handling

31 (GD)	AIRCRAFT DOCUMENTATION LATE/INACCURATE, weight and balance, general declaration, pax manifest, etc.
32 (GL)	LOADING/UNLOADING, bulky, special load, cabin load, lack of loading staff
33 (GE)	LOADING EQUIPMENT, lack of or breakdown, e.g. container pallet loader, lack of staff
34 (GS)	SERVICING EQUIPMENT, lack of or breakdown, lack of staff, e.g. steps
35 (GC)	AIRCRAFT CLEANING
36 (GF)	FUELLING/DEFUELLING, fuel supplier
37 (GB)	CATERING, late delivery or loading
38 (GU)	ULD, lack of or serviceability
39 (GT)	TECHNICAL EQUIPMENT, lack of or breakdown, lack of staff, e.g. pushback

### Technical and Aircraft Equipment

41 (TD)	AIRCRAFT DEFECTS.
42 (TM)	SCHEDULED MAINTENANCE, late release.
43 (TN)	NON-SCHEDULED MAINTENANCE, special checks and/or additional works beyond normal maintenance schedule.
44 (TS)	SPARES AND MAINTENANCE EQUIPMENT, lack of or breakdown.
45 (TA)	AOG SPARES, to be carried to another station.
46 (TC)	AIRCRAFT CHANGE, for technical reasons.
47 (TL)	STAND-BY AIRCRAFT, lack of planned stand-by aircraft for technical reasons.
48 (TV)	SCHEDULED CABIN CONFIGURATION/VERSION ADJUSTMENTS.

### Damage to Aircraft & EDP/Automated Equipment Failure

51 (DF)	DAMAGE DURING FLIGHT OPERATIONS, bird or lightning strike, turbulence, heavy or overweight landing, collision during taxiing
52 (DG)	DAMAGE DURING GROUND OPERATIONS, collisions (other than during taxiing), loading/off-loading damage, contamination, towing, extreme weather conditions
55 (ED)	DEPARTURE CONTROL
56 (EC)	CARGO PREPARATION/DOCUMENTATION
57 (EF)	FLIGHT PLANS



**Flight Operations and Crewing**

- 61 (FP) FLIGHT PLAN, late completion or change of, flight documentation
- 62 (FF) OPERATIONAL REQUIREMENTS, fuel, load alteration
- 63 (FT) LATE CREW BOARDING OR DEPARTURE PROCEDURES, other than connection and standby (flight deck or entire crew)
- 64 (FS) FLIGHT DECK CREW SHORTAGE, sickness, awaiting standby, flight time limitations, crew meals, valid visa, health documents, etc.
- 65 (FR) FLIGHT DECK CREW SPECIAL REQUEST, not within operational requirements
- 66 (FL) LATE CABIN CREW BOARDING OR DEPARTURE PROCEDURES, other than connection and standby
- 67 (FC) CABIN CREW SHORTAGE, sickness, awaiting standby, flight time limitations, crew meals, valid visa, health documents, etc.
- 68 (FA) CABIN CREW ERROR OR SPECIAL REQUEST, not within operational requirements
- 69 (FB) CAPTAIN REQUEST FOR SECURITY CHECK, extraordinary

**Weather**

- 71 (WO) DEPARTURE STATION
- 72 (WT) DESTINATION STATION
- 73 (WR) EN ROUTE OR ALTERNATE
- 75 (WI) DE-ICING OF AIRCRAFT, removal of ice and/or snow, frost prevention excluding unserviceability of equipment
- 76 (WS) REMOVAL OF SNOW, ICE, WATER AND SAND FROM AIRPORT
- 77 (WG) GROUND HANDLING IMPAIRED BY ADVERSE WEATHER CONDITIONS

**ATFM + AIRPORT + GOVERNMENTAL AUTHORITIES****AIR TRAFFIC FLOW MANAGEMENT RESTRICTIONS**

- 81 (AT) ATFM due to ATC EN-ROUTE DEMAND/CAPACITY, standard demand/capacity problems
- 82 (AX) ATFM due to ATC STAFF/EQUIPMENT EN-ROUTE, reduced capacity caused by industrial action or staff shortage, equipment failure, military exercise or extraordinary demand due to capacity reduction in neighbouring area
- 83 (AE) ATFM due to RESTRICTION AT DESTINATION AIRPORT, airport and/or runway closed due to obstruction, industrial action, staff shortage, political unrest, noise abatement, night curfew, special flights
- 84 (AW) ATFM due to WEATHER AT DESTINATION

**AIRPORT AND GOVERNMENTAL AUTHORITIES**

- 85 (AS) MANDATORY SECURITY
- 86 (AG) IMMIGRATION, CUSTOMS, HEALTH
- 87 (AF) AIRPORT FACILITIES, parking stands, ramp congestion, lighting, buildings, gate limitations, etc.
- 88 (AD) RESTRICTIONS AT AIRPORT OF DESTINATION, airport and/or runway closed due to obstruction, industrial action, staff shortage, political unrest, noise abatement, night curfew, special flights
- 89 (AM) RESTRICTIONS AT AIRPORT OF DEPARTURE WITH OR WITHOUT ATFM RESTRICTIONS, including Air Traffic Services, start-up and pushback, airport and/or runway closed due to obstruction or weather<sup>3</sup>, industrial action, staff shortage, political unrest, noise abatement, night curfew, special flights

**Reactionary**

- 91 (RL) LOAD CONNECTION, awaiting load from another flight
- 92 (RT) THROUGH CHECK-IN ERROR, passenger and baggage
- 93 (RA) AIRCRAFT ROTATION, late arrival of aircraft from another flight or previous sector
- 94 (RS) CABIN CREW ROTATION, awaiting cabin crew from another flight
- 95 (RC) CREW ROTATION, awaiting crew from another flight (flight deck or entire crew)
- 96 (RO) OPERATIONS CONTROL, re-routing, diversion, consolidation, aircraft change for reasons other than technical

**Miscellaneous**

- 97 (MI) INDUSTRIAL ACTION WITH OWN AIRLINE
- 98 (MO) INDUSTRIAL ACTION OUTSIDE OWN AIRLINE, excluding ATS
- 99 (MX) OTHER REASON, not matching any code above

*SOURCE: Provisional list composed by IATA*

<sup>3</sup> Restriction due to weather in case of ATFM regulation only, else refer to code 71 (WO)

## Correlation between IATA Delay Codes and the CFMU Reasons for Regulation (Annex 4)

CORRELATION BETWEEN IATA DELAY CODES AND THE CFMU REASONS FOR REGULATION				IATA	
REASON FOR REGULATION	CODE	REGULATION LOCATION	EXAMPLE	CFMU	
				CODE	DELAY CAUSE
ATC Capacity	C	D	Demand exceeds the capacity	89	RESTRICTIONS AT AIRPORT OF DEPARTURE
		E		81	ATFM due to ATC ENROUTE DEMAND/CAPACITY
		A		83	ATFM due to RESTRICTION AT DESTINATION AIRPORT
ATC Ind Action	I	D	Controllers' strike	89	RESTRICTIONS AT AIRPORT OF DEPARTURE
		E		82	ATFM due to ATC STAFF/EQUIPMENT ENROUTE
		A		83	ATFM due to RESTRICTION AT DESTINATION AIRPORT
ATC Routeings	R	E	Phasing in of new procedures	81	ATFM due to ATC ENROUTE DEMAND/CAPACITY
ATC Staffing	S	D	Illness; traffic delays on the highway	89	RESTRICTIONS AT AIRPORT OF DEPARTURE
		E		82	ATFM due to ATC STAFF/EQUIPMENT ENROUTE
		A		83	ATFM due to RESTRICTION AT DESTINATION AIRPORT
ATC Equipment	T	D	Radar failure; RTF failure	89	RESTRICTIONS AT AIRPORT OF DEPARTURE
		E		82	ATFM due to ATC STAFF/EQUIPMENT ENROUTE
		A		83	ATFM due to RESTRICTION AT DESTINATION AIRPORT
Accident/Incident	A	D	RWY23 closed due accident	89	RESTRICTIONS AT AIRPORT OF DEPARTURE
Aerodrome Capacity	G	D	Lack of parking; taxiway closure; areas closed for maintenance; demand exceeds the declared airport capacity	83	ATFM due to RESTRICTION AT DESTINATION AIRPORT
		A		87	AIRPORT FACILITIES
		A		87	AIRPORT FACILITIES
De-icing	D	D	De-icing	89	RESTRICTIONS AT AIRPORT OF DEPARTURE
Equipment non-ATC	E	D	Runway or taxiway lighting failure	87	AIRPORT FACILITIES
Ind Action non-ATC	N	D	Firemen's strike	87	AIRPORT FACILITIES
		A		98	INDUSTRIAL ACTION OUTSIDE OWN AIRLINE
		A		98	INDUSTRIAL ACTION OUTSIDE OWN AIRLINE
Military Activity	M	D	Brilliant Invader; ODAX	89	RESTRICTIONS AT AIRPORT OF DEPARTURE
		E		82	ATFM due to ATC STAFF/EQUIPMENT ENROUTE
		A		83	ATFM due to RESTRICTION AT DESTINATION AIRPORT
Special Event	P	D	European football cup; Heads of Government meetings	89	RESTRICTIONS AT AIRPORT OF DEPARTURE
Weather	W	D	Thunderstorm; low visibility; X winds	83	ATFM due to RESTRICTION AT DESTINATION AIRPORT
		E		89	RESTRICTIONS AT AIRPORT OF DEPARTURE
		A		73	WEATHER EN ROUTE OR ALTERNATE
Other	O	D	Security alert	84	ATFM due to WEATHER AT DESTINATION
		E		89	RESTRICTIONS AT AIRPORT OF DEPARTURE
		A		81	ATFM due to ATC ENROUTE DEMAND/CAPACITY
		A		83	ATFM due to RESTRICTION AT DESTINATION AIRPORT