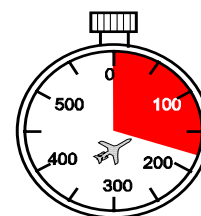
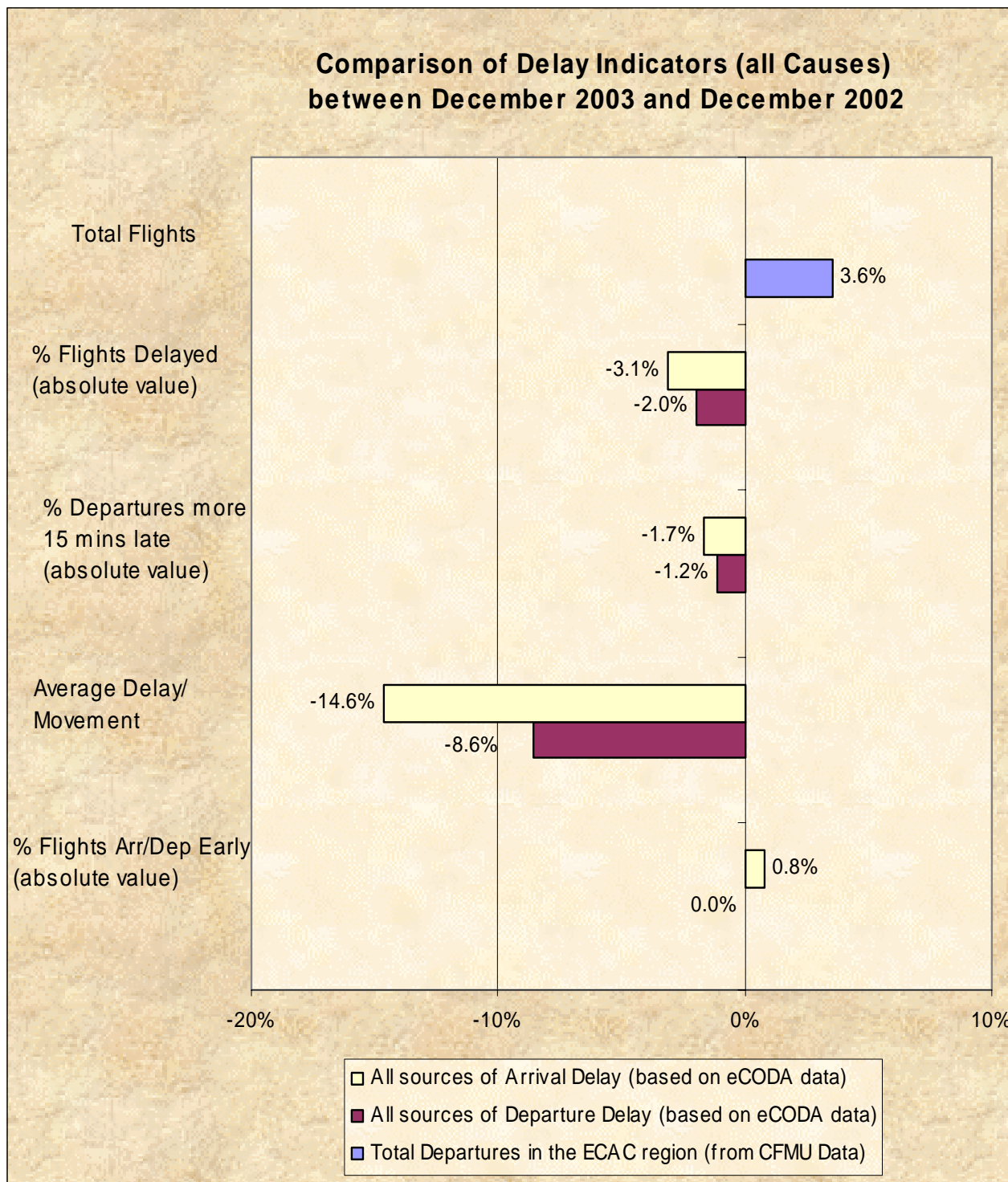


Delays to Air Transport in Europe December 2003



December 2003



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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. However, as a result of the current form of the database, *the graphics and charts refer only to departure delays*. 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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Table of Contents

1. SUMMARY OVERVIEW	6
2. Year on Year Trends in Main Indicators	10
3. Most Affected Traffic Flows by CODA Regions	12
4. Most Affected City Pairs	13
5. Delay Share by Country	14
6. Reasons for ATFM Delay	15
7. Primary Departure Delay Causes (eCODA)	16
Definition of CODA Flow Regions (Annex 1)	17
Glossary of Terms and Abbreviations (Annex 2)	18
Standard IATA Delay Codes (Annex 3)	19
Correlation between IATA Delay Codes and the CFMU Reasons for Regulation (Annex 4)..	21

1. SUMMARY OVERVIEW

Departures in December, in the ECAC region, increased by three and a half percent. Delays, however, for all causes continued the decrease seen since March 2003, with the Average Delay per Movement for departure traffic falling by nine percent to eleven minutes, and for arrivals by fifteen percent to eleven minutes. ATFM delay, on the other hand, increased by around three percent mainly due to weather, ATC capacity and ATC staffing.

For the year as a whole, traffic increased by three percent, with delayed flights due to all causes falling by twelve percent for departures and seven percent for arrivals. The number of flights delayed by more than fifteen minutes fell by six percent for departures and arrivals. Eleven percent of the departures left early and thirty two percent of arrivals landed early. Turning to the delays, the Average Delay per Movement was nine minutes for departures and ten minutes for arrivals. Total ATFM delay fell by eighteen percent, with the Average Delay per Movement falling by twenty percent to one and three quarters minutes.

TRAFFIC SITUATION FOR DECEMBER 2003¹

Departures in the ECAC region increased by three and a half percent when compared with December 2002 and was the highest December figure since 1996. Domestic traffic increased by one and a half percent whereas International traffic increased by five percent. More than eighty five percent of the busier countries (those with more than one thousand two hundred and fifty flights per month) had rises in traffic levels, with Norway, the United Kingdom and Germany having the largest real increases. France and Switzerland, on the other hand, had the largest decreases. Turning to the domestic traffic, Norway had the largest increase, followed by the Canary Islands and Turkey; France, Sweden and Germany on the other hand had the largest decreases.

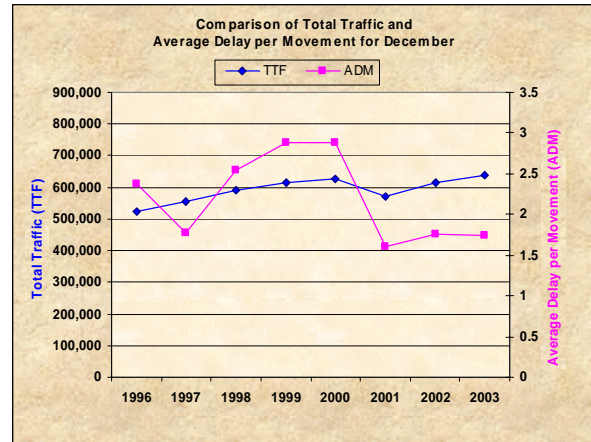
Fifty percent of the busier airports (those with more than two thousand five hundred flights per month) had rises in traffic levels. The largest real increases were at Vienna, Athens, Prague and Budapest. Zurich and Nice, on the other hand, had the largest decreases.

The busiest city pair in December was Barcelona-Madrid with nineteen hundred flights in each direction. Fifty five percent of the busiest city pairs (those with more than two hundred and fifty flights per month) had an increase in flights, with more than a quarter having a rise of ten percent or more. Rome-Catania had the largest real increases, whereas Cologne/Bonn-Berlin and Rome-Palermo had the largest real decreases.

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

ATFM DELAY SITUATION FOR DECEMBER 2003

Delays due solely to ATFM measures increased by three percent when compared with December last year. With January and April, this was only the third time there had been an increase in delay in 2003. The Average Delay per Movement had a small decrease, falling by half a percent to over one and a half minutes. Almost half of all ATFM delay was due to weather, with ATC capacity, ATC staffing and aerodrome capacity being the other main causes.



Delayed flights fell by almost two percent, with the percentage of flights delayed falling by half a percentage point, to eight percent. Flights delayed by more than fifteen minutes increased by five and a half percent, with flights delayed by more than one hour rising by six percent.

Not all ATFM delay was due to ATC; over fifty five percent of all ATFM delay in December was caused by regulations put in place to protect airports because of lack of capacity, parking problems, low visibility, etc. While the share of delay was the same as last year, the actual amount of delay imposed increased by three percent. The London, Paris and Frankfurt airports were the most affected by airport-related regulations. Almost three quarters of the airport-related ATC delay was due to weather, with a further fifteen percent due to airport capacity.

Based on the locations of the most penalising regulations, traffic (including overflights) using the airspace of the United Kingdom, Germany and France had the largest share of ATFM delay. Between them, they accounted for more than fifty percent of total ATFM delay in the ECAC region. Compared with December last year, the United Kingdom had the largest real decrease, whereas the Canary Islands, Germany and Maastricht had the largest increases. While the United Kingdom had a large decrease, it still had significantly more delay than in previous months.

When the traffic handled is taken into account (again including overflights), only Switzerland, the United Kingdom and Germany had an Average Delay per Movement of more than one minute. Compared with the same month last year, no country had an increase or a decrease in average delay of more than one minute.

eCODA DATA FOR DECEMBER 2003

The Average Delay per Movement for departures, for all causes of delay, was eleven minutes; a decrease of almost nine percent on December last year. Forty three percent of flights were delayed on departure, with twenty percent delayed by more than fifteen minutes. This was a reduction of two percentage points in the delayed flights and one percentage point in the percentage of flights delayed by more than fifteen minutes. On the other side, ten and a half percent of flights departed before their scheduled time.

Arrivals also had significant decreases, with the Average Delay per Movement, for all causes of delay, falling by almost fifteen percent to a little over eleven minutes. Almost forty two percent of flights had an arrival delay, with twenty one percent having a delay of fifteen minutes or more; three percentage points down for delayed flights and over one and a half percentage point down for delays of more than fifteen minutes. However, almost one third of flights arrived before their scheduled time.

Among the busier airports, forty four percent had an Average Delay per Movement of ten minutes or more, with London/Heathrow and Venice having the largest average delay, both with seventeen minutes. Compared with December last year, thirty one percent of the busier airports had an increase in average delay of more than one minute, with the largest rises at Birmingham (three minutes) and Venice (just under three minutes). These increases were offset by large decreases at Amsterdam (down eleven minutes) and Athens (down six and a half minutes). In all, a third of the airports had a decrease in average delay of more than one minute. All of the airports had a proportion of their traffic departing before their scheduled time ranging from three percent at Copenhagen to thirty four percent at Bilbao.

Looking at the busier airports as destinations shows that traffic arriving at London/Heathrow had the largest Average Delay per Movement with nineteen minutes, followed by Prague with eighteen minutes and Rome with sixteen minutes. Compared with December last year, thirty seven percent of the busier airports had an increase in Average Delay per Movement, with the largest rises at Torino (four and a half minutes) and Milan/Linate (three minutes). At the other end of the scale, there was a large decrease at Prague (down seventeen minutes) and Amsterdam (down ten minutes). Forty five percent of the airports had a decrease of one minute or more. As with departures, all the airports had a proportion of their flights arriving early, with more than fifty percent of flights at Palma and forty percent of flights at Madrid and Frankfurt arriving before their scheduled time.

The most affected city pairs due to all causes of delay, were New York-London/Heathrow (forty minutes), London/Heathrow-Vienna and Edinburgh-London/Heathrow, both with an Average Delay per Movement of twenty three minutes. It is worth noting that London/Heathrow appeared as either the departure or destination in the first ten most affected city pairs. Compared with December last year, forty five percent of the city pairs had an increase in average delay, with almost one third having an increase of more than one minute.

The largest increase was between Manchester-London/Heathrow, with almost seven minutes, followed by London/Heathrow-Vienna, with six and a half minutes. At the other end of the scale, just over forty five percent of the city pairs had a decrease of more than one minute, with almost a quarter of them having a fall of three minutes or more. The largest decreases (more than ten minutes) were between Oslo-Amsterdam, Amsterdam-Barcelona, Amsterdam-Oslo and Barcelona-Amsterdam.

An analysis of the delay causes and categories, grouped by IATA codes, shows that over forty percent of them had an increase in delay share, with the largest rise in Weather, ATFM Weather at Destination and Others categories whereas the Airport Facilities, Technical & Aircraft Equipment and Passenger & Baggage categories had decreases².

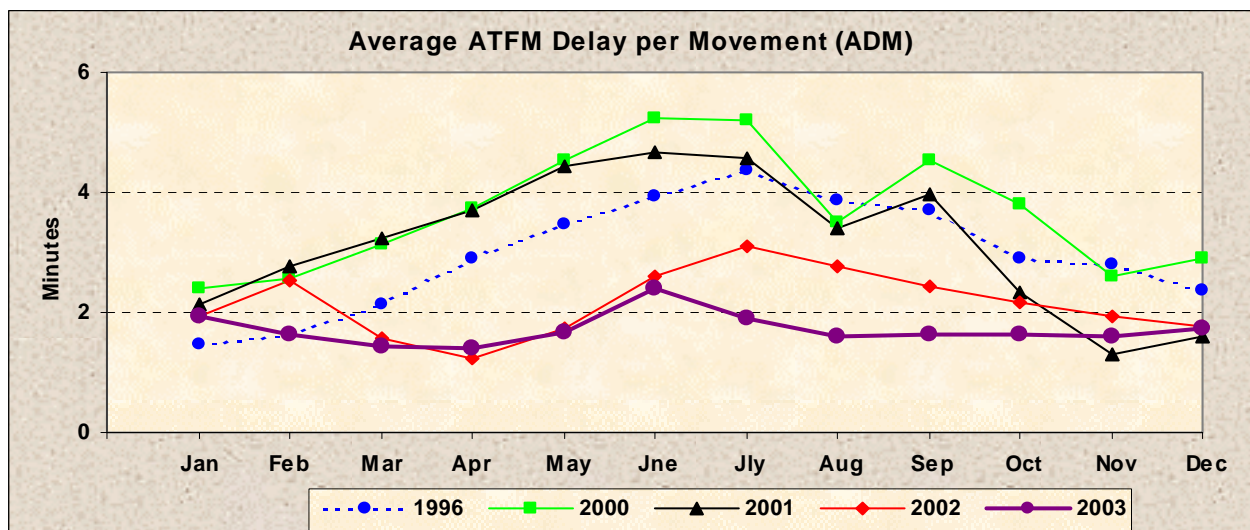
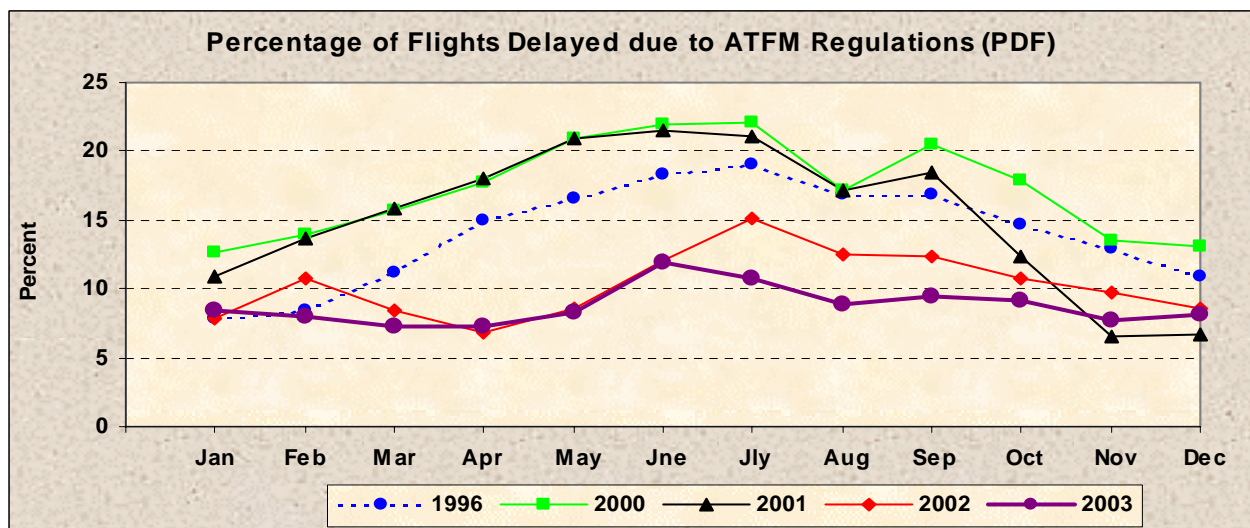
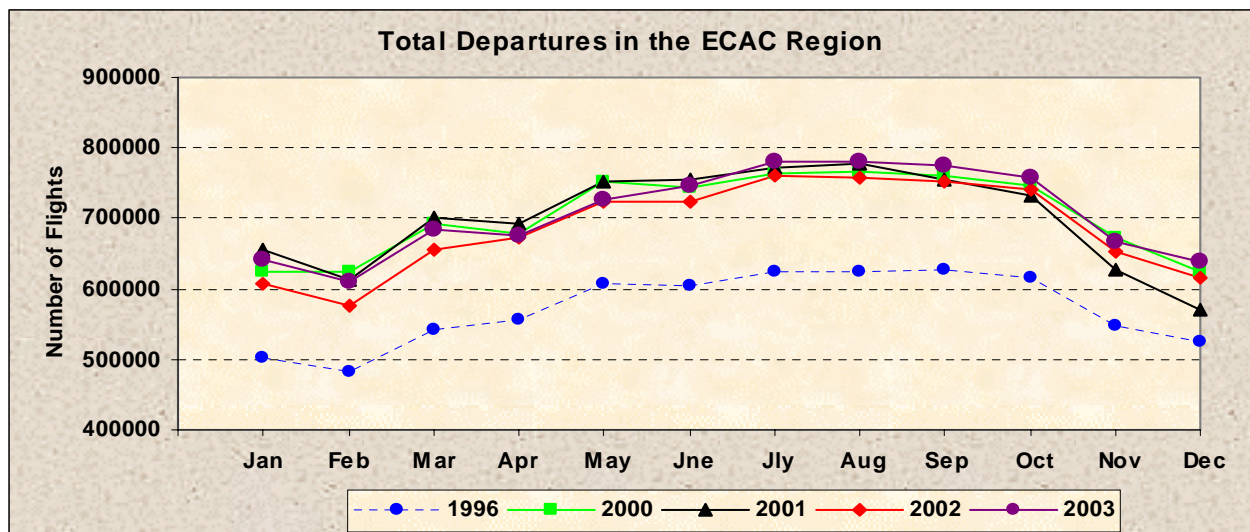
The Reactionary category was the most penalising delay category, with thirty seven percent, but the most penalising direct delay categories were Technical & Aircraft Equipment, Restrictions at Departure Airport and Weather, all with seven percent.

SUMMARY OF SIGNIFICANT EVENTS

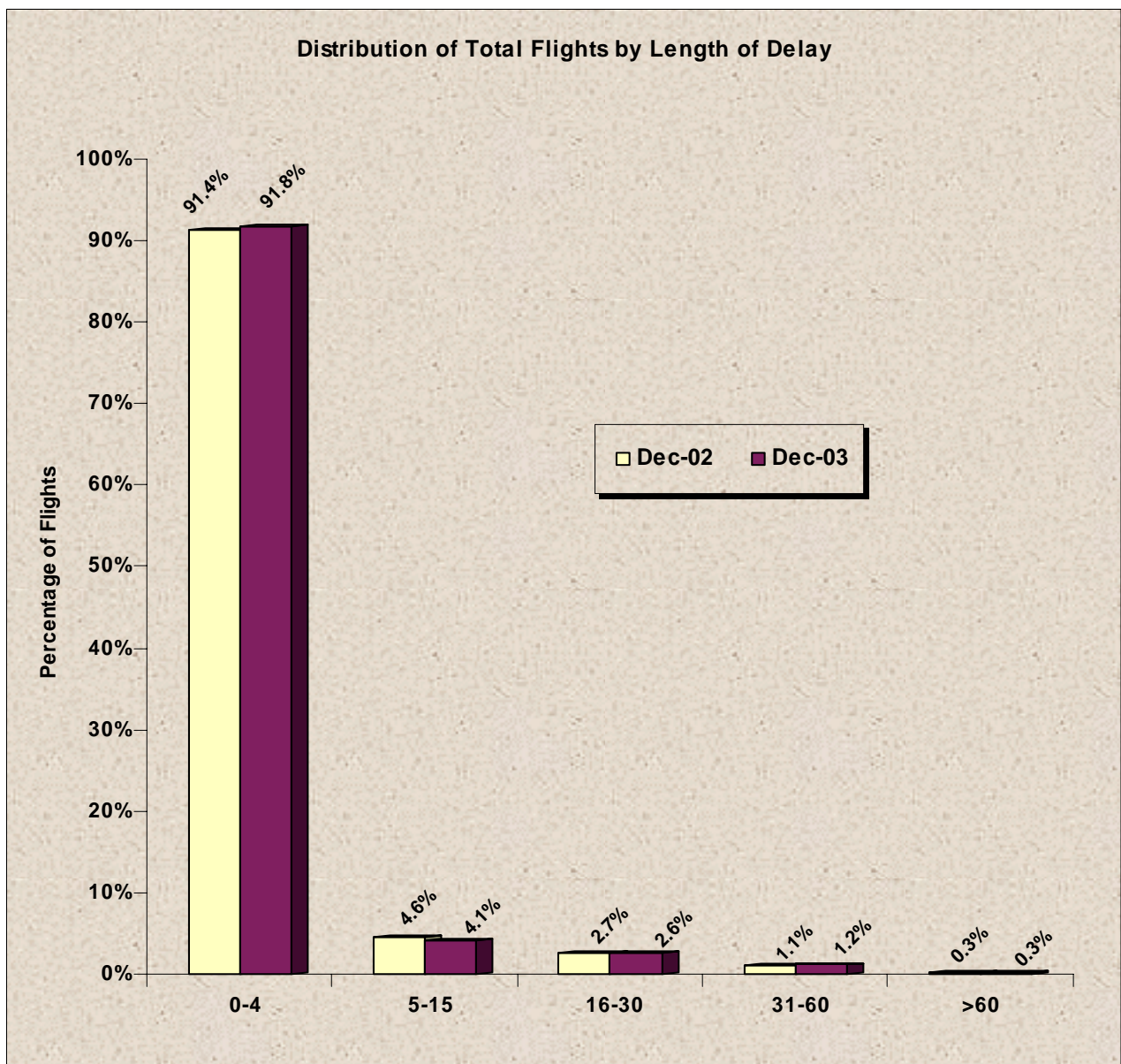
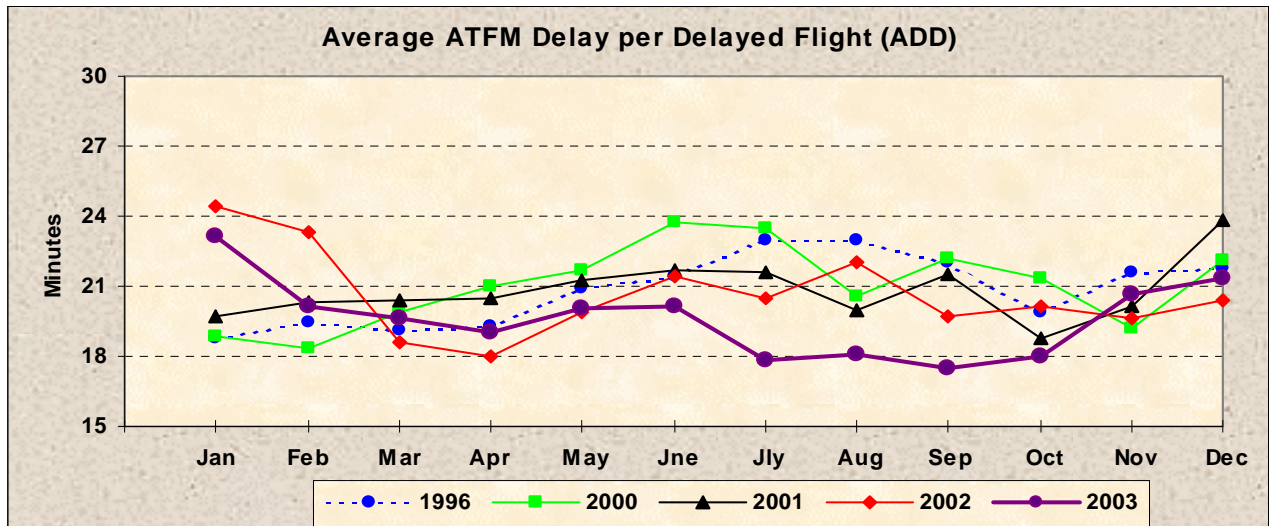
- ✈ Severe weather conditions including low visibility, strong winds, heavy snowfalls and fog, closing some airports for short periods.
- ✈ Technical problems including radar problems at Paris/Charles de Gaulle, Stockholm and Brussels ACCs; radar maintenance at Ljubljana ACC and Catania; FDP problems at Maastricht; radar testing at Munich; radar failure at Rhein UAC; ILS failure at Amsterdam and Milan/Malpensa.
- ✈ WIP at Catania, Calabria and Barcelona; blocked runway at Menorca and London Heathrow.
- ✈ Industrial action by civil aviation personnel at Milan ACC.
- ✈ Staff shortages at Paris/Charles de Gaulle ATC, Paris le Bourget ATC and Canary Islands.
- ✈ Other items: Naples closed due to Euromed summit; military air show in Gran Canaria; new arrival procedures at Zurich.

² Only categories with more than one percent of the delay were taken into account.

2. Year on Year Trends in Main Indicators

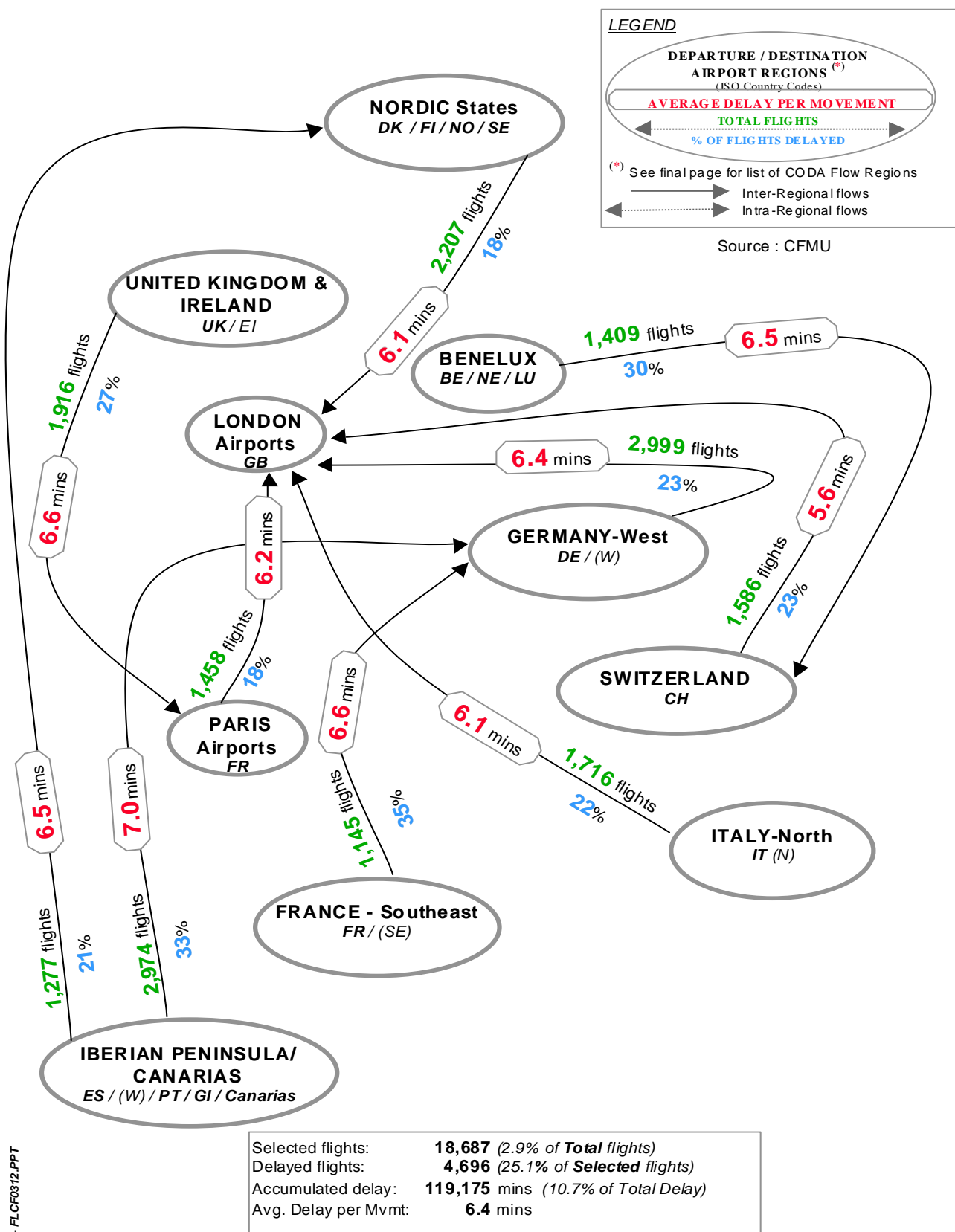


Source : CFMU ATFM Data



Source : CFMU ATFM Data

3. Most Affected Traffic Flows by CODA Regions



07/0104 - FLCF0312.PPT

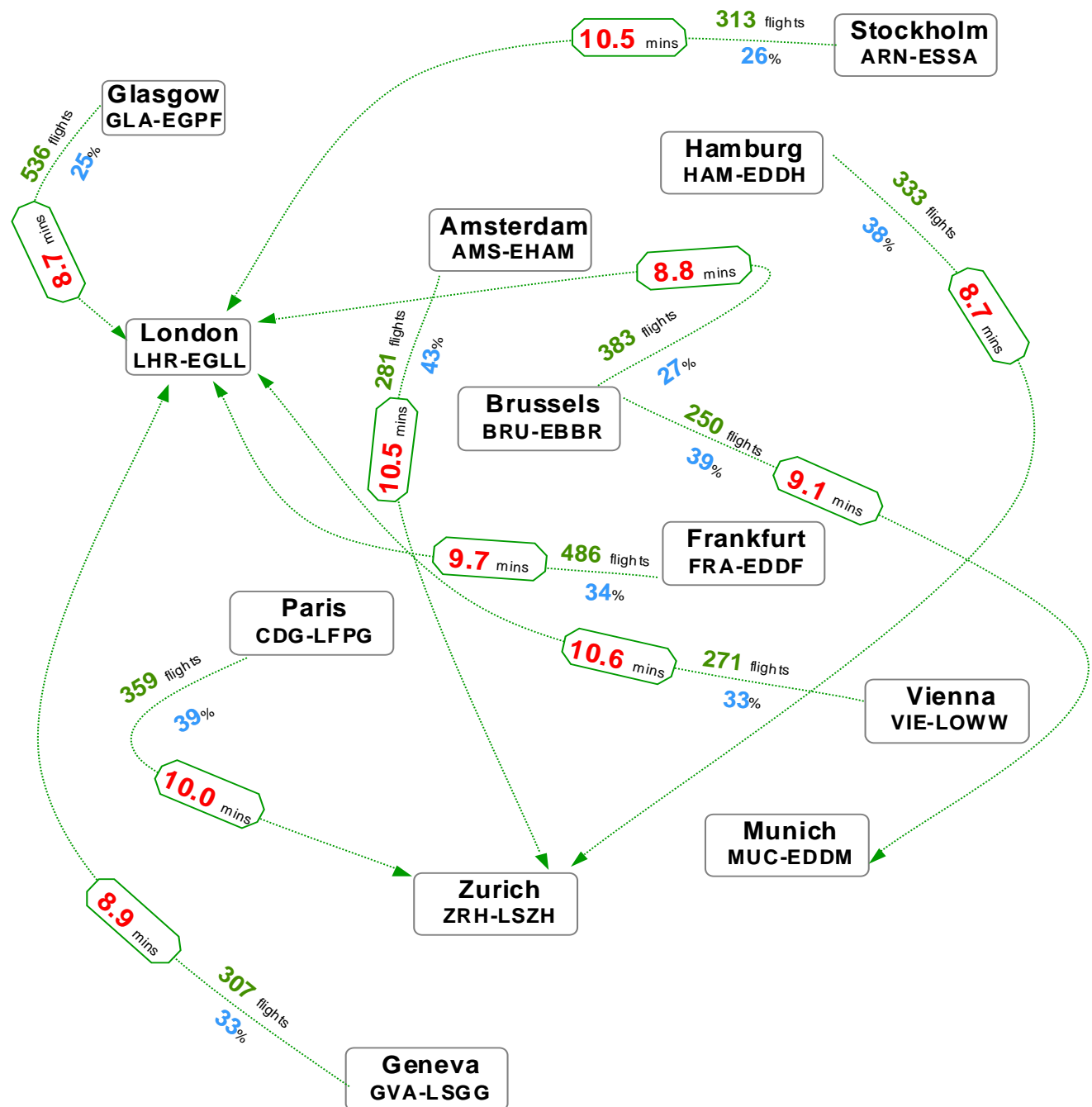
ATFM Delay Situation on **10** Regional CODA Traffic Flows (>1,000 flights)
in **December 2003**

4. Most Affected City Pairs

AVERAGE DELAY PER MOVEMENT

Source : CFMU

Total Number of Flights & % of Flights Delayed

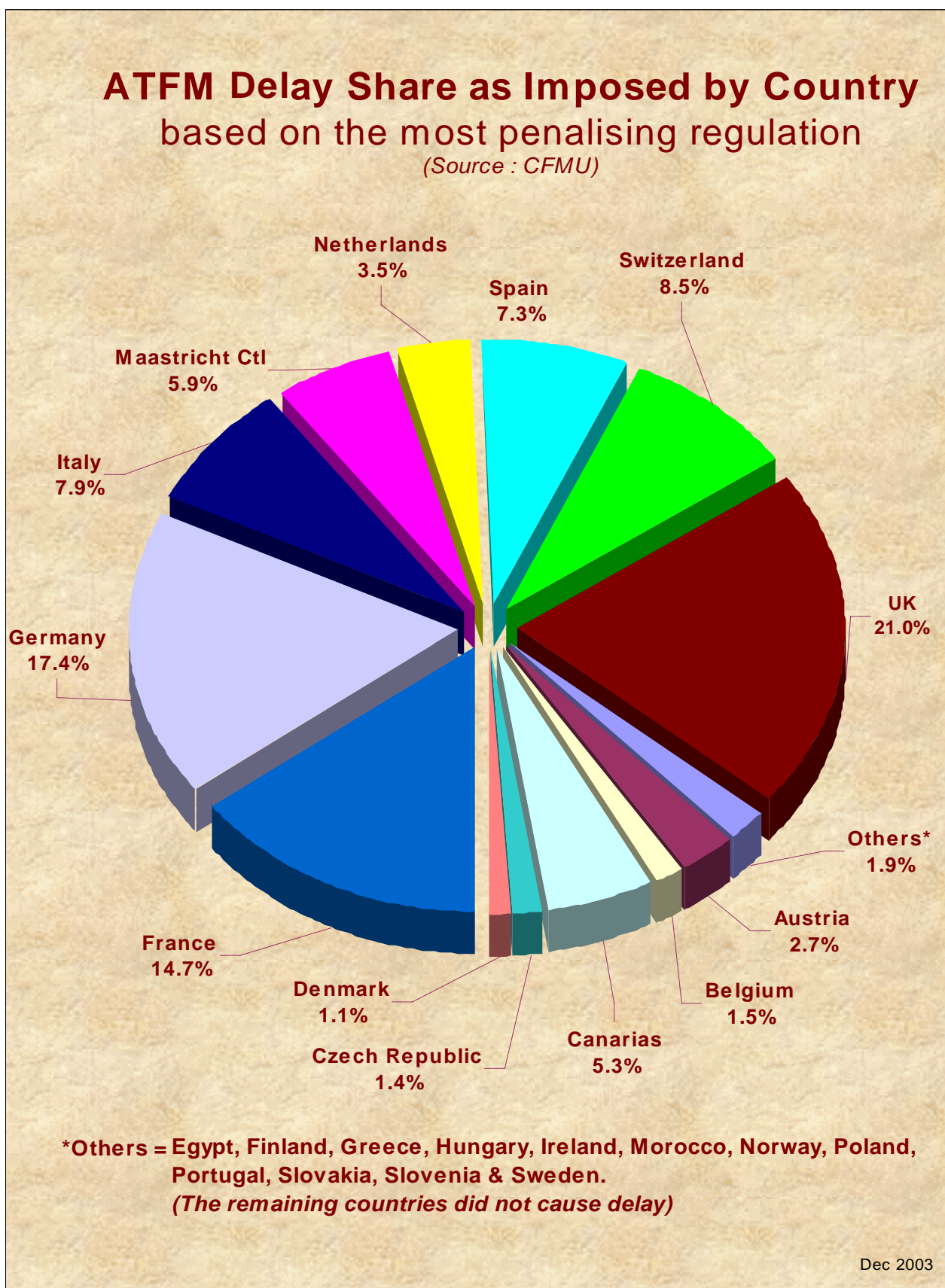


Selected flights: 3,519 (0.5% of Total flights)
 Delayed flights: 1,157 (33% of Selected flights)
 Accumulated delay: 33,392 mins (3% of Total Delay)
 Avg. Delay per Mvmt.: 9.5 mins

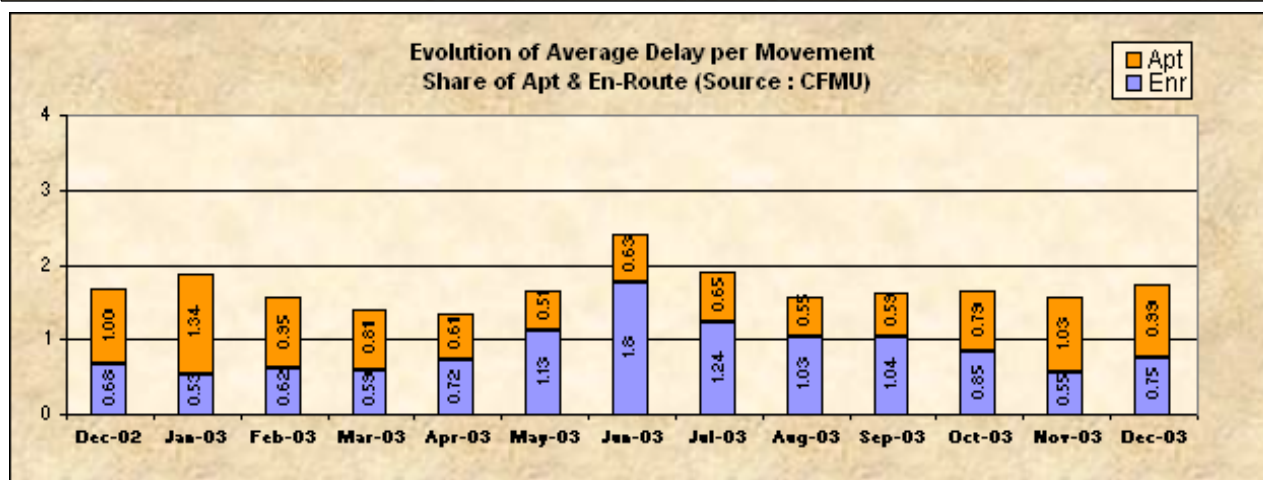
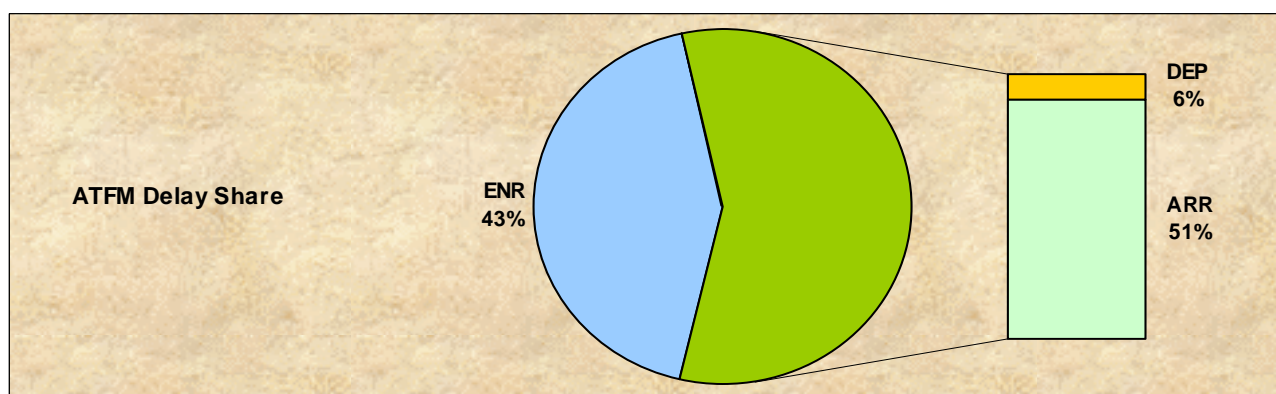
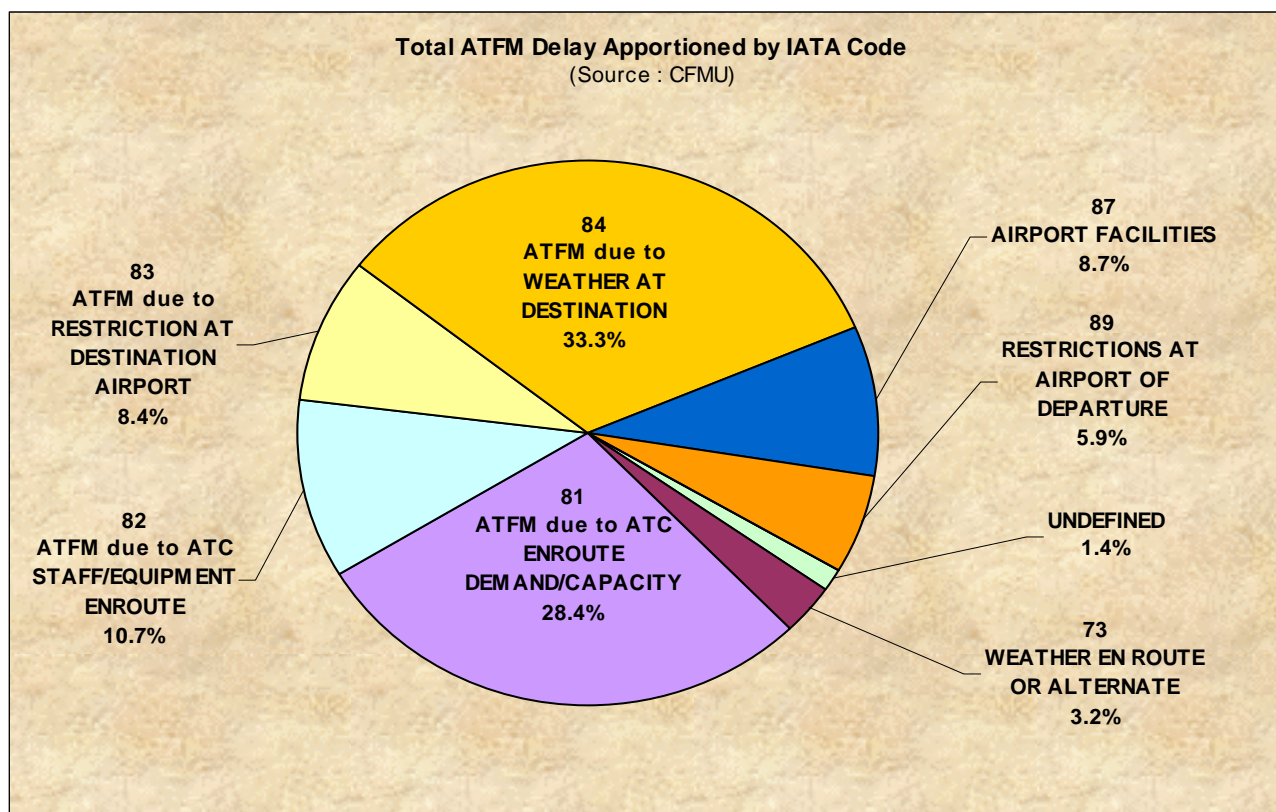
ATFM Delay Situation on 10 City Pairs (>250 flights) in December 2003

07/01/04 - CPQF0312.PPT

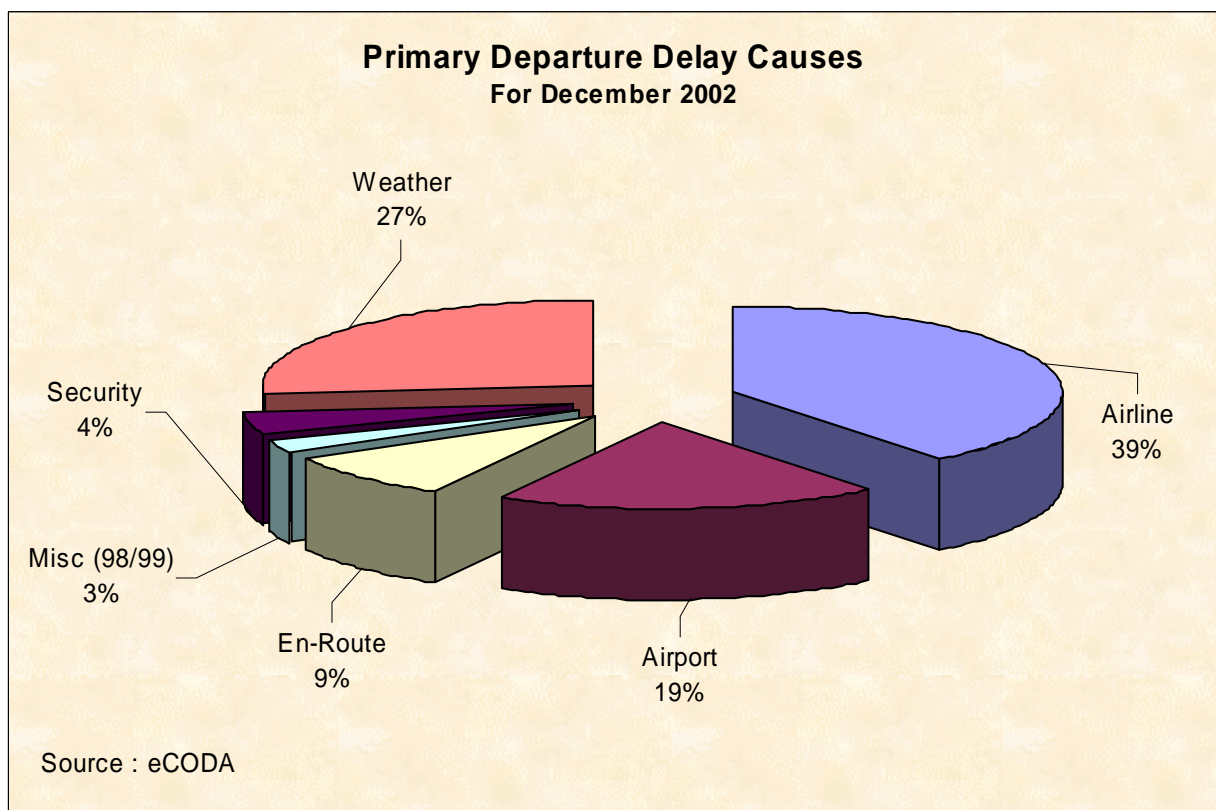
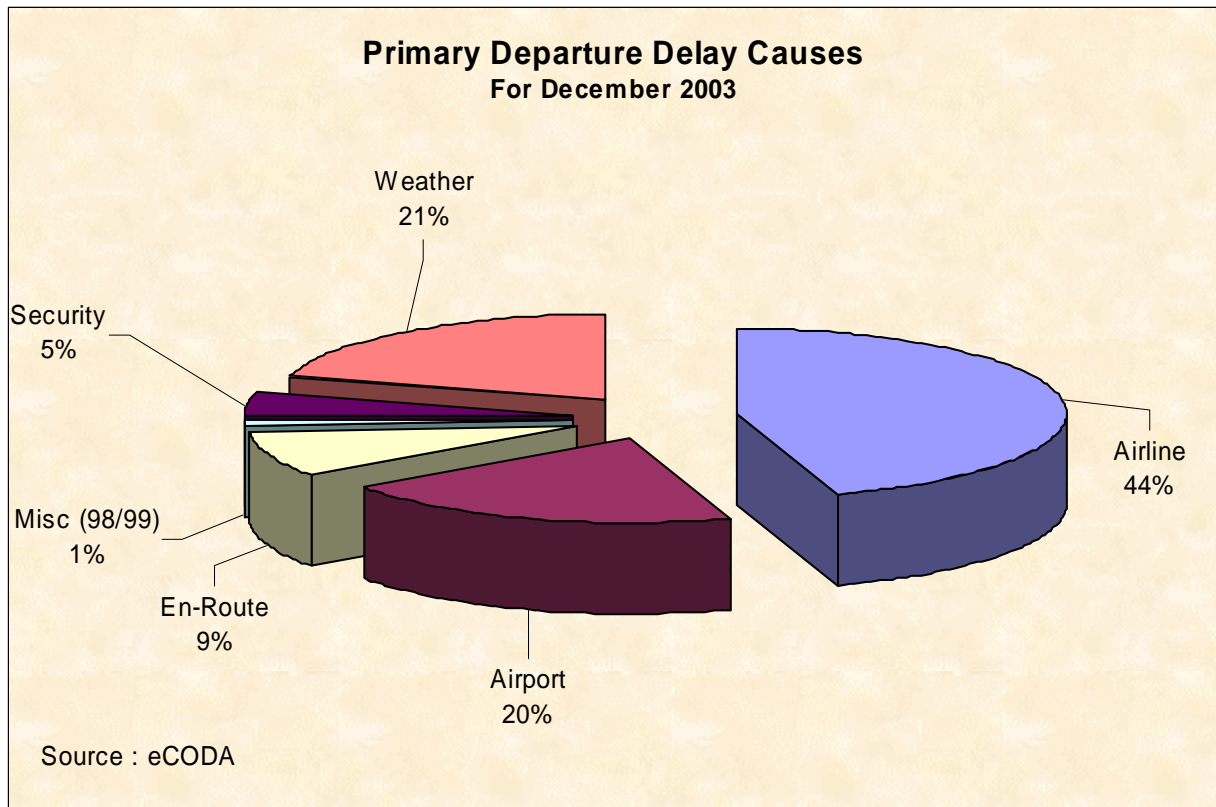
5. Delay Share by Country



6. Reasons for ATFM Delay



7. Primary Departure Delay Causes



Definition of CODA Flow Regions (Annex 1)

Definition of CODA Flow Regions

Glossary of Terms and Abbreviations (Annex 2)

Delay Parameter Abbreviations

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

Glossary of Terms

AEA	Association of European Airlines
ATFM	Air Traffic Flow Management
ATS	Air Traffic Services
CFMU	Central Flow Management Unit
CODA	Central Office for Delay Analysis
EATMP	European Air Traffic Management Program
ECAC	European Civil Aviation Conference
EDAS	European Delay Analysis System
ERA	European Regions Airline Association
EURACA	European Air Carrier Assembly
IACA	International Air Carrier Association
IATA	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 weather³, 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

³ 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		87	AIRPORT FACILITIES
		A			87	AIRPORT FACILITIES
		D			89	RESTRICTIONS AT AIRPORT OF DEPARTURE
De-icing	D	D	De-icing		87	AIRPORT FACILITIES
Equipment non-ATC	E	D	Runway or taxiway lighting failure		87	AIRPORT FACILITIES
Ind Action non-ATC	N	D	Firemen's strike		98	INDUSTRIAL ACTION OUTSIDE OWN AIRLINE
		A			98	INDUSTRIAL ACTION OUTSIDE OWN AIRLINE
		D			89	RESTRICTIONS AT AIRPORT OF DEPARTURE
Military Activity	M	D	Brilliant Invader; ODAX		82	ATFM due to ATC STAFF/EQUIPMENT ENROUTE
		E			83	ATFM due to RESTRICTION AT DESTINATION AIRPORT
		A			89	RESTRICTIONS AT AIRPORT OF DEPARTURE
Special Event	P	D	European football cup; Heads of Government meetings		83	ATFM due to RESTRICTION AT DESTINATION AIRPORT
		A			89	RESTRICTIONS AT AIRPORT OF DEPARTURE
		D			73	WEATHER EN ROUTE OR ALTERNATE
Weather	W	E	Thunderstorm; low visibility; X winds		84	ATFM due to WEATHER AT DESTINATION
		A			89	RESTRICTIONS AT AIRPORT OF DEPARTURE
		D			81	ATFM due to ATC ENROUTE DEMAND/CAPACITY
Other	O	E	Security alert		81	ATFM due to ATC ENROUTE DEMAND/CAPACITY
		A			83	ATFM due to RESTRICTION AT DESTINATION AIRPORT