

CODA Digest

All-causes delay and cancellations to air transport in Europe

Report for Q3 2020



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Author(s)			
C. Walker			
Contact Person(s)	Tel/email	Unit	
C. Walker	+32 2 729 3391	DECMA/AIU/BIS	

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DOCUMENT APPROVAL

AUTHORITY (Name and Function)	SIGNATURE	DATE
D. Marsh Head of Business Intelligence and Statistics Unit a.i.	Approval by email	09/12/2020
D. Huet Head of Aviation Intelligence Unit	Approval by email	15/12/2020
P. Merlo Director Directorate European Civil-Military Aviation		15.12.2020

COVID-19 Impact

This CODA Digest covers the period of July, August and September 2020 (Q3 2020) and is published while European aviation remains strongly affected by the **COVID-19 pandemic**. We have reduced the CODA Quarterly Digest to a minimum level of reporting. Even with this, we caution against any in-depth comparison with previous years.

1 Executive Summary

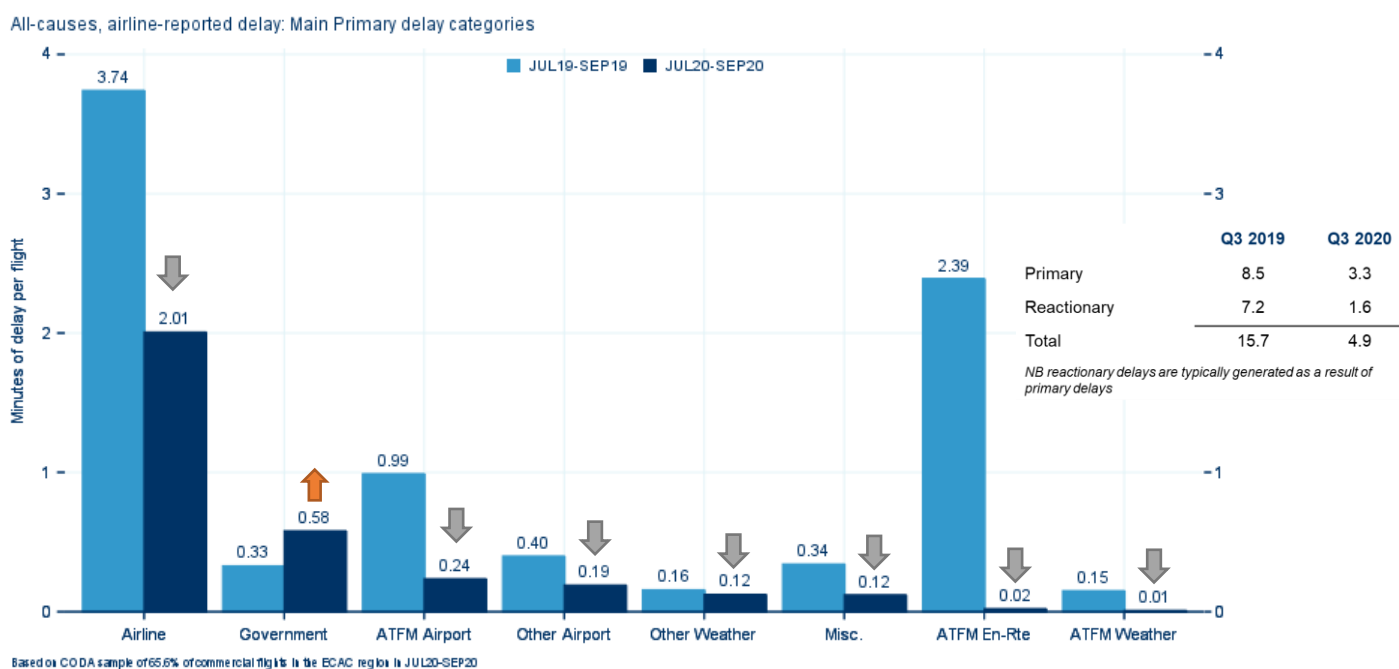
In terms of overall delay, the **average delay per flight for Q3 2020 decreased** by 10.8 minutes **to 4.9 minutes per flight**. This came amongst continuing unprecedented operational conditions for the whole aviation industry, with **quarterly traffic levels falling by 55%** in comparison to Q3 2019.

The reduction in overall delay is further highlighted by the **high arrival punctuality**, with **94.4% of flights arriving within 15 minutes or earlier than their scheduled arrival time (STA)**. This sharp increase occurred as airlines that could operate flights, saw many flights depart ahead of schedule, in turn arriving even earlier than their STA.

Analysis into the causes of delay, shows the main change came in relation to **governmental delay causes***, these delay codes being used to record delays due to mandatory security or immigration, customs and health related delays. The contribution of this cause to the average delay/flight almost **doubled in Q3 2020, contributing 0.6 minutes per flight** compared to 0.3 minutes in the same period in 2019, translating to an 18% of generated delay minutes.

En-route **ATFM delays fell to near 0.0 minutes/flight** with only a small amount of ATFM delays observed during the quarter.

Figure 1. Breakdown of the Average Delay per Flight Q3 2019 vs. Q3 2020

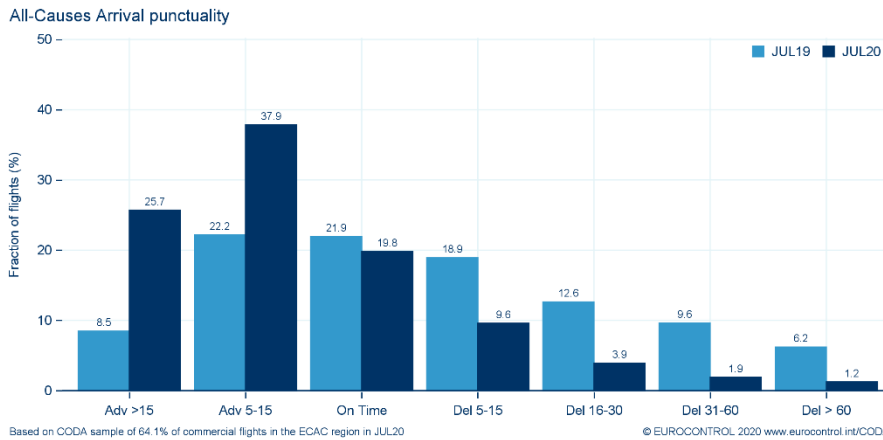


* Governmental delay grouping consists of (IATA delay codes 85 & 86) see Annex Standard IATA Delay Codes (AHM 730) for further detail.

2 Arrival Punctuality by Month

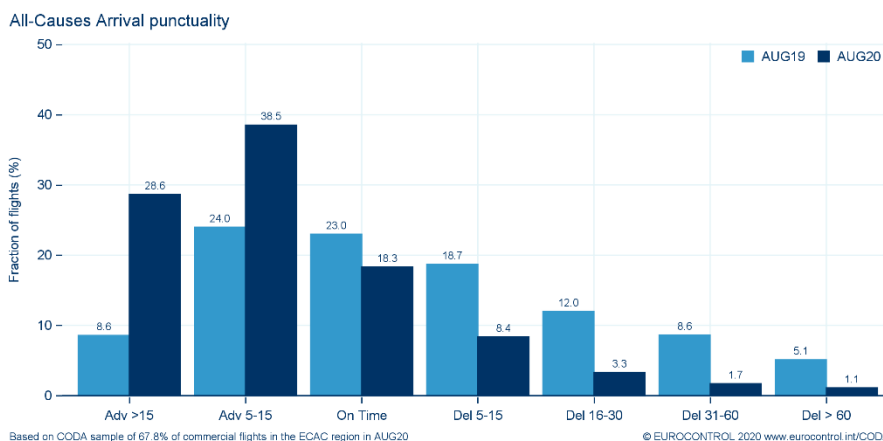
Figure 2. Arrival Punctuality July 2020

In a similar pattern to that of the previous quarter, Q3 2020 saw significant changes in airline punctuality as airline traffic fell, however flights that did operate achieved better punctuality. Still notable are the significant amount of early arrivals, as airlines that could operate flights saw many depart ahead of schedule, in turn arriving even earlier than their scheduled time of arrival.



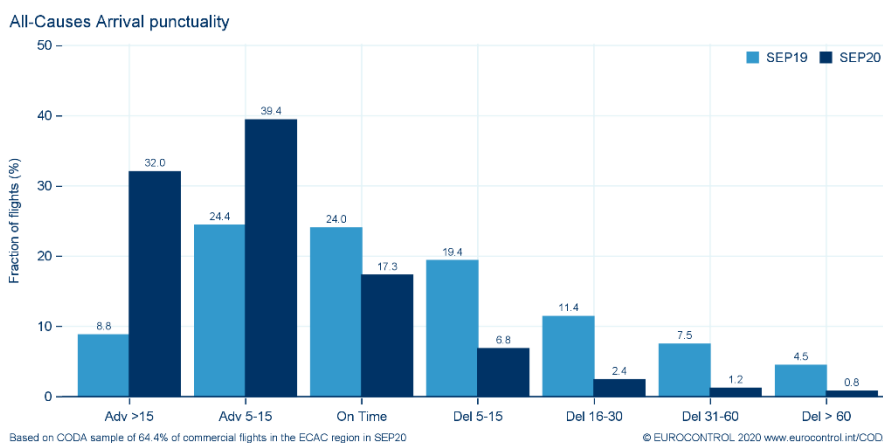
July 2020 saw 93.0% of flights arriving within 15 minutes or earlier than their scheduled arrival time (STA), compared to 71.5% in July 2019.

Figure 3. Arrival Punctuality August 2020



August 2020 saw 93.8% of flights arriving within 15 minutes, compared to 74.3% in August 2019.

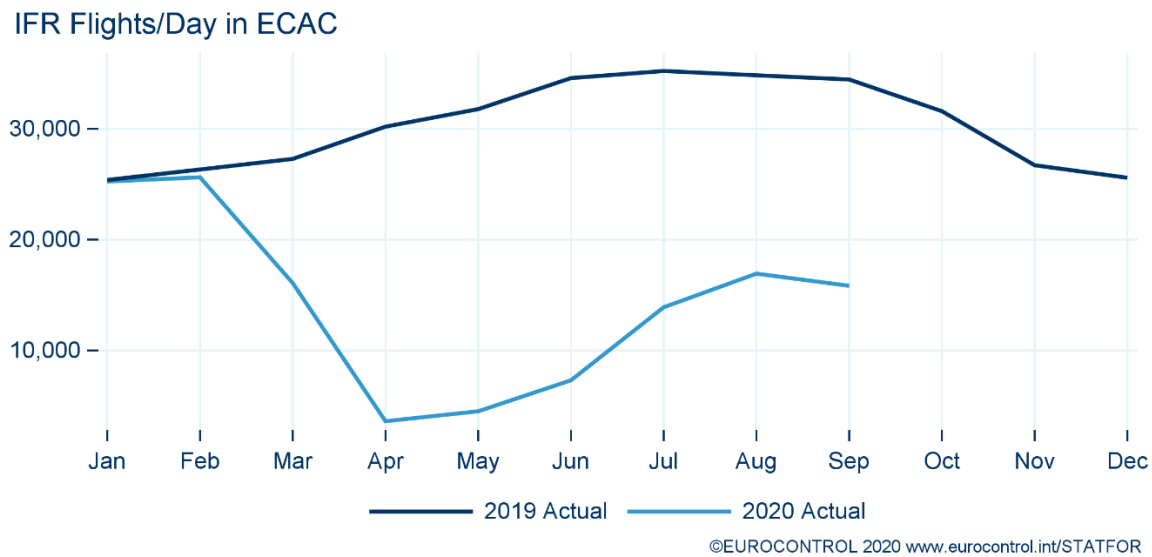
Figure 4. Arrival Punctuality September 2020



In September 2020, 95.5% of flights arrived with 15 minutes, compared to 76.6% in September 2019.

3 Traffic

Figure 5. Total Flights per Day in ECAC



European flights (ECAC) in average daily terms (Figure 1) decreased by 55.4% in Q3 2020 compared with Q3 2019. The quarterly average was of course strongly by the COVID-19 pandemic, which commenced in March 2020 and is continuing in 2020. Further information regarding traffic and forecasts is available at the STATFOR website and also via the [STATFOR Interactive Dashboard \(SID\)](#).

4 2020 Monthly Summary

Section 3 provides a month-by-month view for Q3 2020, highlighting the particular locations, causes of network delay or disruptions in further detail.

July 2020. The average all-causes delay per flight on departure was 5.8 minutes, a decrease of 12.0 minutes compared to July 2019.

In comparison to July 2019, network traffic fell by 60.7% with the impact of the COVID-19 pandemic continuing, however the decrease in traffic was not as dramatic to that seen during Q2-2020. Following the re-opening of borders towards the end of June and start of July, airlines started increasing flights in time for the start of the traditional European summer holidays.

In terms of flights, Ryanair was the busiest airline, followed by Turkish Airlines and Wizz Air. DHL was also busy as demand for freight remained strong. Paris CDG, Amsterdam Schiphol and Frankfurt Main were the busiest airports, alongside freight centric airports such as Leipzig Halle and Liege also remaining busy.

August 2020. The average delay per flight on departure was 4.8 minutes, a decrease of 10.7 minutes compared to August 2019.

Network traffic fell by 51.5% compared to August 2019, with traffic peaking on Friday 28 August with the network handling 18,802 flights, with a pattern emerging where Fridays were the busiest days. Again, Ryanair was the busiest airline in terms of flights, followed by easyJet and Turkish Airlines. Netjets were also busy, as demand for private flying into various holiday destinations remained strong. Amsterdam Schiphol, Paris CDG and Frankfurt Main were the busiest airports.

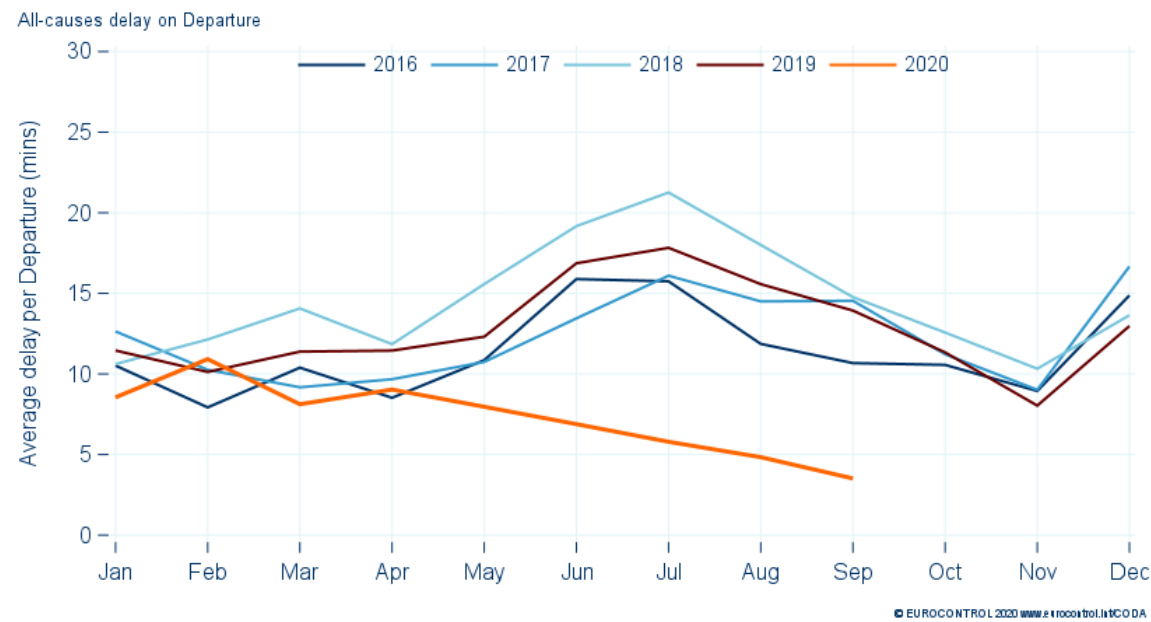
September 2020. The average delay per flight on departure was 3.5 minutes, a decrease of 10.4 minutes compared to September 2019.

Traffic for month decreased by 54.1% as the effects of the COVID-19 pandemic continued. Amsterdam Schiphol, Paris CDG and Frankfurt Main remained the busiest airports. In regard to airlines Ryanair, easyJet and Turkish Airlines operated the most flights. Once again DHL remained busy as freight demand continued.

5 Average Delay per Delayed Flight (Departure)

As the COVID-19 pandemic continued into 2020, delays for the quarter decreased, with an average departure delay per flight of 4.9 minutes. This down by 10.8 minutes per flight, compared to 15.7 minutes per flight in Q3 2019.

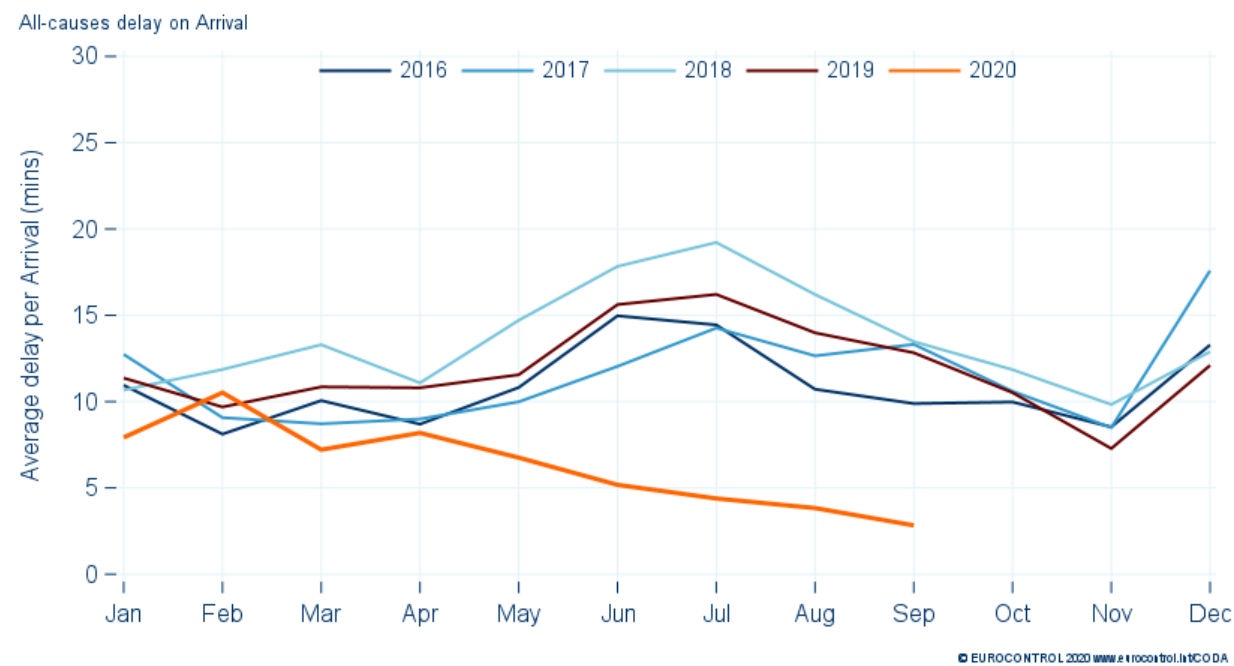
Figure 6. Average Delay per Flight (All-Causes) for Departures



6 Average Delay per Delayed Flight (Arrival)

The average delay per flight on arrival (Figure 8) showed a similar decreasing trend to that of the departure, at 3.7 minutes per flight, a decrease of 10.7 minutes when compared to Q3 2019.

Figure 7. Average Delay per Flight (All-Causes) for Arrivals



Scheduling Indicators

Two CODA scheduling indicators help airline schedulers determine the optimal schedule based on historical flight data:

Scheduling correctly is a difficult art: if too long a time is blocked for a flight, the airline will not be able to make best use of resources - staff, airframes, infrastructure. Too short a time can arguably be worse as late flights generate rotational delay with late incoming aircraft and passengers from previous flights having to be accommodated. When flights leave on time but arrive after the scheduled time of arrival they cause reactionary delays. Schedule padding is essential for air carriers in order to find schedules which work with the typical patterns of delay, so that they can deliver passengers on time, and get maximum use out of their aircraft. Consequently, when delays decrease it takes one or two (IATA) seasons for the airline to adapt its schedule accordingly.

The **Delay Difference Indicator - Flight (DDI-F)** or the difference between departure and arrival punctuality expressed in minutes. This can be indicated as a positive or negative figure, for example, a flight departing with 20 minutes delay and arriving with 30 minutes arrival delay will have a DDI-F of +10 minutes.

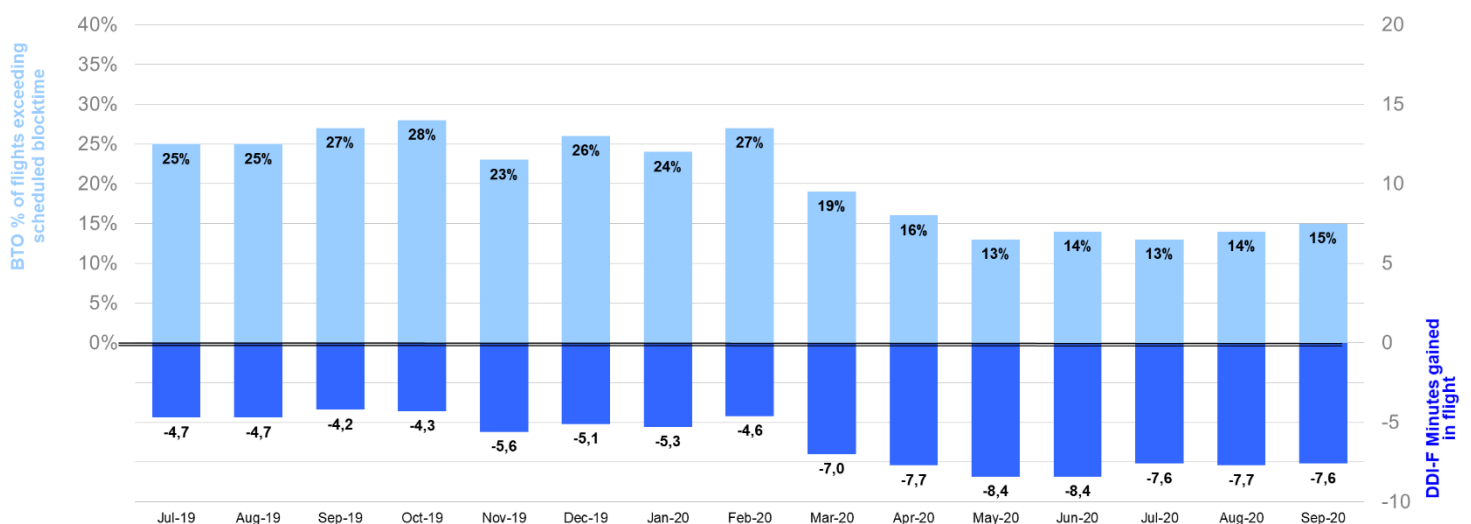
The European DDI-F in Q3 2020 was -7.6 minutes, this an increase in comparison to Q3 2019 where the DDI-F was -4.5 minutes. The exceptional operational conditions caused this large increase in the DDI-F as network congestion reduced.

The **Block Time Overshoot (BTO)** is the percentage of flights with an actual block time that exceeds the scheduled block time.

The **European BTO in Q3 2020 decreased to 14%** compared to 26% in Q3 2020, again here Q3 2020's unique operational conditions drove this decrease, as the reduction in traffic influenced those flights that did operate.

One of the drivers behind this change include changes in the so-called Route Availability Document (RAD) measures - to improve flight planning options, making flights 'greener' by ensuring more direct routings. Since the beginning of the COVID-19 pandemic in March 2020, the EUROCONTROL Network Manager (NM) together with the operational stakeholders has removed 1,200 network restrictions. This alongside with the absence of holding very busy airports, translates to more flights operating within scheduled block time.

Figure 8. Block Time Overshoot (BTO) and Delay Difference Indicator - Flight (DDI-F) July 2019 – September 2020



8 Year on Year Trends in All-Causes Indicators

This section summarises the year-on-year trends in the main indicators of delay from all-causes. A flight is considered delayed from 5 minutes.

The performance in Q3 2020 can be observed in (Figures 9, 10 and 11). Despite a good average delay per flight, the average delay per delayed (ADD) flight saw increases in notably April, a month where despite many flights operating ahead of schedule, those that did experience delays saw those increase significantly. As the year continued the situation stabilised with record low ADD's being observed.

Figure 9. Average all-causes delay per delayed flight ≥ 5 mins (departures top, arrivals bottom)



Figure 10. Percentage of flights delayed ≥ 5 mins for all-causes delay (departures top, arrivals bottom)

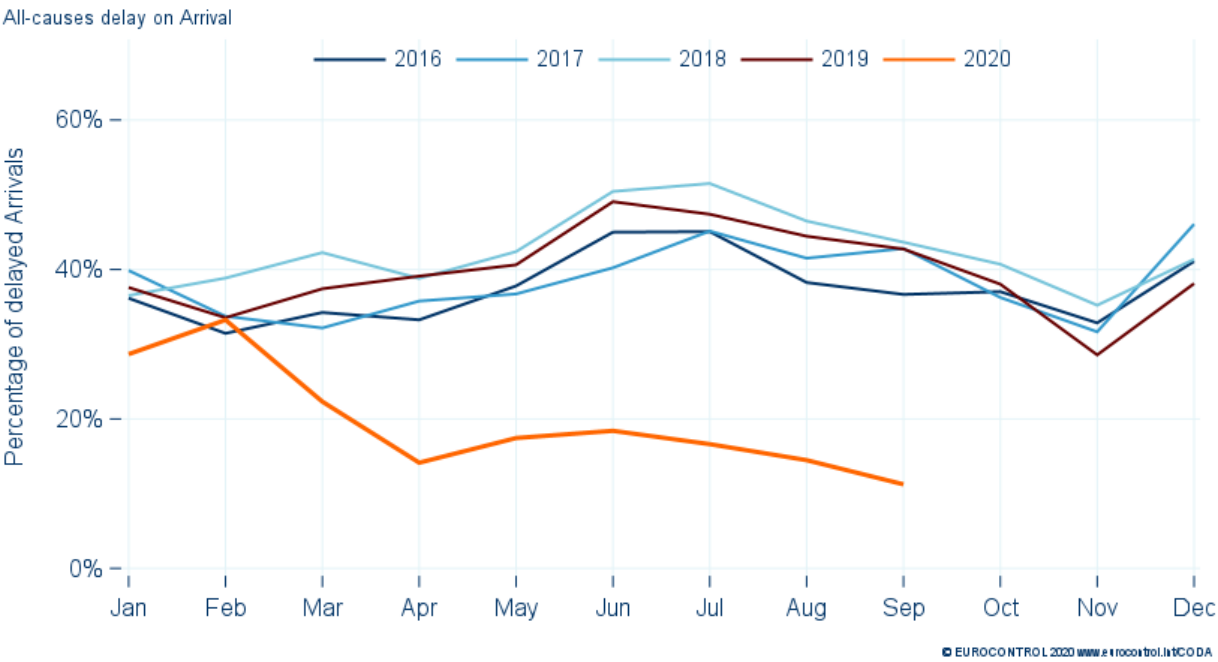
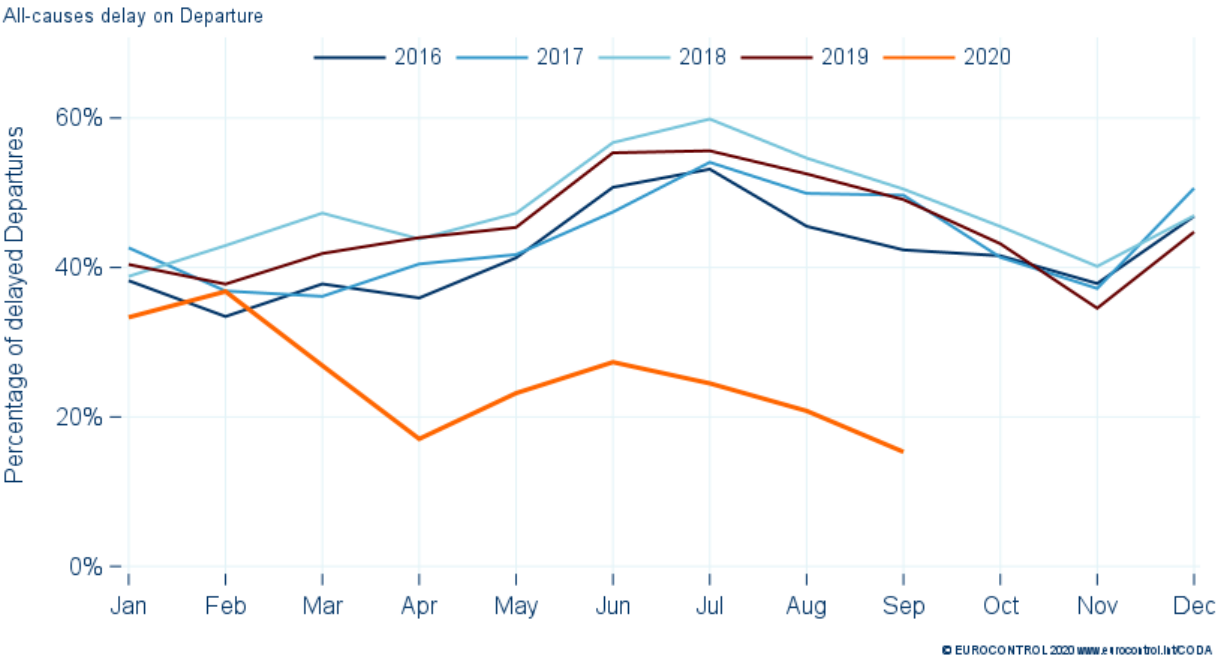
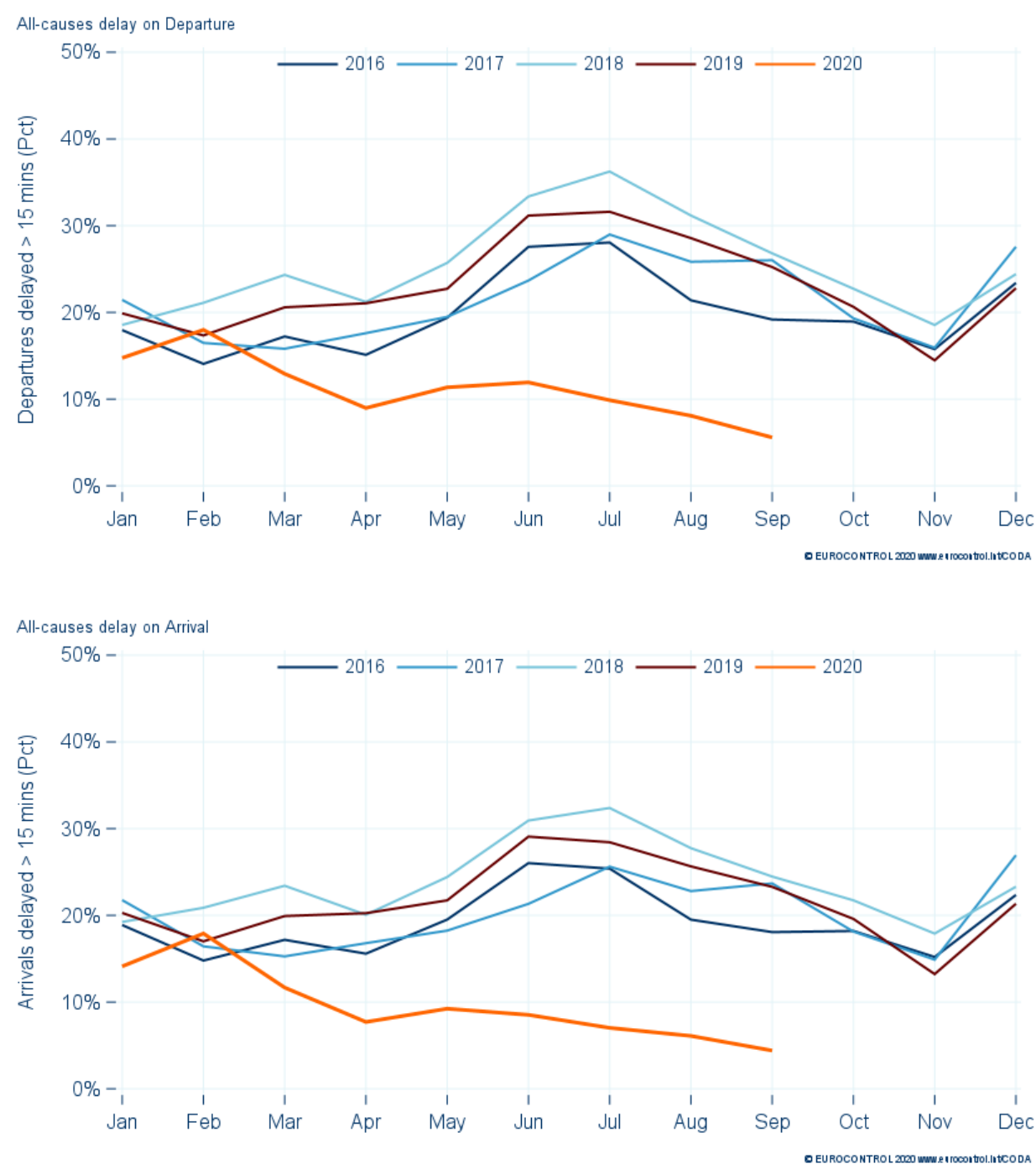


Figure 11. Percentage of flights delayed >15mins for all-causes (departures top, arrivals bottom)



9 Annex Standard IATA Delay Codes (AHM 730)

Others

00-05	AIRLINE INTERNAL CODES
06 (OA)	NO GATE STAND AVAILABILITY DUE TO OWN AIRLINE ACTIVITY Including Early Arrivals
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.
19 (PW)	REDUCED MOBILITY, boarding debarking of passengers with reduced mobility.

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
58 (EO)	OTHER AUTOMATED SYSTEM

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

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 Government 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 ¹ , 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: IATA – Airport Handling Manual (730 & 731)

¹ Restriction due to weather in case of ATFM regulation only, else refer to code 71 (WO)

Standard IATA Delay Code Sub-Codes (AHM 731)

73 (WR)	WEATHER: EN ROUTE OR ALTERNATE Z OUTSIDE AIRCRAFT LIMITS Y OUTSIDE CREW LIMITS X ETOPS
81 (AT)	ATFM DUE TO ATC EN-ROUTE DEMAND CAPACITY, standard demand capacity problems Z ATC ROUTEING Y HIGH DEMAND OR CAPACITY X ENVIRONMENTAL W WEATHER G OTHER
82 (AX)	ATFM DUE TO ATC STAFF EQUIPMENT EN-ROUTE, reduced capacity caused by industrial action or shortage or equipment failure, extraordinary demand due to capacity reduction in neighbouring area Z INDUSTRIAL ACTION Y EQUIPMENT FAILURE X STAFF SHORTAGE W MILITARY ACTIVITY V SPECIAL EVENT
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 Z HIGH DEMAND ATC CAPACITY Y INDUSTRIAL ACTION X EQUIPMENT FAILURE W STAFF SHORTAGE V ACCIDENT INCIDENT U MILITARY ACTIVITY T SPECIAL EVENT S NOISE ABATEMENT NIGHT CURFEW P HIGH DEMAND AIRPORT FACILITIES
85 (AS)	MANDATORY SECURITY Z MANDATORY SECURITY CHECK Y SECURITY CONTROL CHECKPOINTS X BAGGAGE AVI SECURITY W BAGGAGE IDENTIFICATION UNLOADING INTENDED V AIRPORT TERMINAL SECURITY U AIRLINE AIRCRAFT SECURITY CHECK T EXTRAORDINARY SECURITY EVENTS G OTHER
86 (AG)	IMMIGRATION, CUSTOMS, HEALTH Z IMMIGRATION EMMIGRATION Y CUSTOMS X HEALTH G OTHER
87 (AF)	AIRPORT FACILITIES, parking stands, ramp congestion, lighting, buildings, gate limitations, etc. Z PARKING STANDS LIMITATION NO PARKING STANDS AVAILABLE, EXCLUDING EARLY ARRIVALS Y RAMP CONGESTION, ABNORMAL STAND ACCESS LIMITATION (NON-ATC) X BUILDINGS W GATE LIMITATION NO GATE AVAILABLE EXCLUDING EARLY ARRIVALS V BAGGAGE SORTING SYSTEM DOWN SLOW U NO PUSH BACK CLEARANCE DUE TO INFRASTRUCTURE (NON-ATC) T JET BRIDGE INOPERATIVE S LACK OF CHECK IN COUNTERS R AIRFIELD ELECTRICAL SYSTEM FAILURE P PASSENGER TRANSPORT SYSTEM FAILURE N PUBLIC ADDRESS FLIGHT INFORMATION DISPLAY SYSTEM FAILURE M INSUFFICIENT FIRE COVER J LATE POSITIONING OF AIRCRAFT (WHEN RESPONSIBILITY OF AIRPORT) I SERVICE ROAD RESTRICTION H LATE ARRIVAL OR LACK OF FOLLOW ME VEHICLE G ANY OF THE ABOVE AT THE DESTINATION AIRPORT



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