



Pitot Probe

Reliability overview May 2020



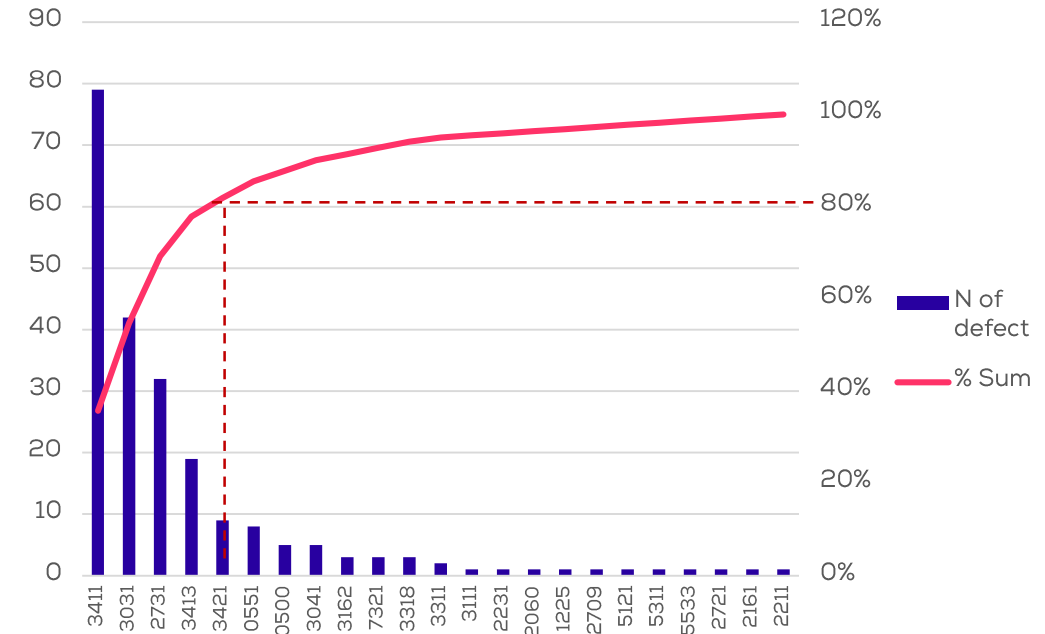
Pitot Probe ATA split and accountability

- ❑ ATAs responsible:
 - Probe Heating module - Interiors
 - Probe Structure - Structure
 - Probe Electrical installation - Avio
- ❑ Defects should be recorded in Trax under ATA 34-11 and 30-31 but big spread across 23 ATAs
- ❑ KLM TCC pool part (Koos van der Heijde)
- ❑ Five pitot probes on 737 NG
 1. Capitan
 2. First officer (F/O)
 3. Auxiliary (AUX)
 4. Right elevator
 5. Left elevator

Front group

Rear group
- ❑ Pitot probe (time/material):
 - 0851HT
 - 0851HT-1
 - 0851HT-1 MOD A
 - 0851HT-1 MOD B
- ❑ Pitot probe heat controls (ATA 30-31) – TCC parts
 - 233A3201-305 MODULE ASSY WINDOW/ PITOT HEAT
 - 233A3201-5 WINDOW/PITOT HEAT MODULE

Pitot probe defects 1.1.2013 to 3.6.2020



Description	ATA	N of defect	% Sum	Delay >180	Delay 60-180
STATIC AND TOTAL AIR PRESSURE SYSTEM	3411	79	36%	15	13
ICE AND RAIN PROTECTION	3031	42	55%	4	8
ELEVATOR AND TAB CONTROL SYSTEM	2731	32	69%	2	6
AIR DATA INSTRUMENTS	3413	19	78%	1	3
AIR DATA INERTIAL REFERENCE SYSTEM	3421	9	82%	2	2

Pitot Probe Fault code – ATA 30

Use hardwood or plastic tools only when you remove or apply the sealant around the probe base plate.

The Pitot probe Anti-Icing system uses resistance type heating elements to warm the probe.

Probe:- 115vac
P5-9:- 28vdc

If the probe heater does not draw current, the logic causes the indication light to come on.

The Pitot heat A switch controls heat to these system A probes:

- The Captains pitot.
- The Left elevator pitot
- The Left Alpha vane.
- The Total air temperature [TAT] probe.

The Pitot heat B switch controls heat to these system B probes:

- The First Officer pitot.
- The Auxiliary pitot.
- The Right elevator pitot.
- The Right Alpha vane.

801. AUX PITOT or CAPT STATIC AUX PITOT Light is ON - Fault Isolation

A. Description

- (1) The AUX PITOT Light on the Window and Pitot Heat Module, P5-9 is ON.

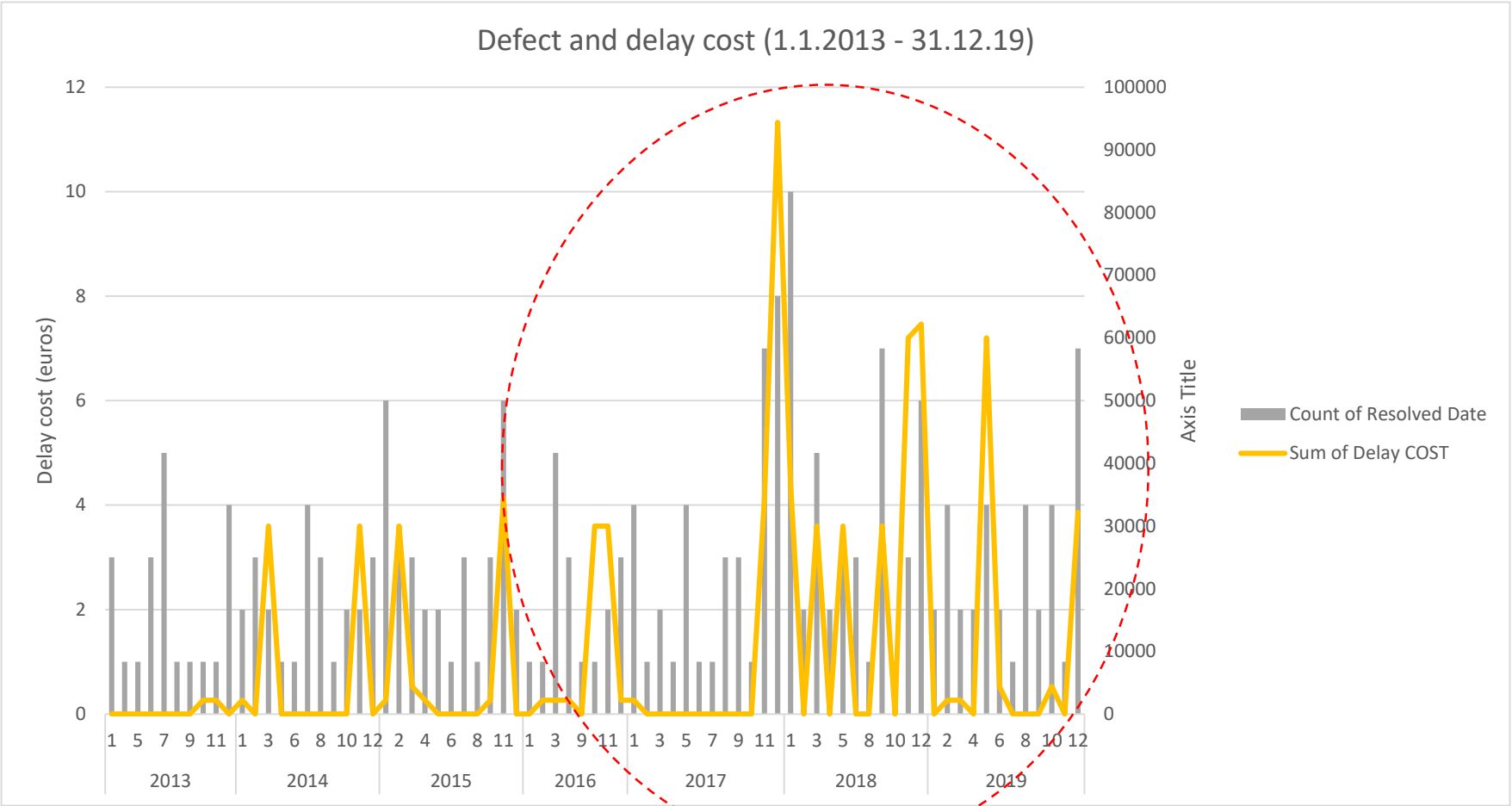
B. Possible Causes

- (1) Lower Right Pitot Probe, A25
- (2) Window and Pitot Heat Panel, P5-9
- (3) Circuit Breaker
- (4) Wiring



303 010 00	AUX PITOT light: light on.	30-31	TASK 801
303 020 00	CAPT PITOT light: light on.	30-31	TASK 802
303 030 00	F/O PITOT light: light on.	30-31	TASK 803
303 040 00	L ALPHA VANE light: light on.	30-31	TASK 804
303 050 00	L ELV PITOT light: light on.	30-31	TASK 805
303 060 00	Pitot probe: Does not get hot.	30-31	TASK 806
303 070 00	Probe heater indicator lights: do not come on when PITOT STATIC HEAT switches are OFF.	30-31	TASK 807
303 080 00	R ALPHA VANE light: light on.	30-31	TASK 808
303 090 00	R ELV PITOT light: light on.	30-31	TASK 809
303 100 00	TEMP PROBE light: light on.	30-31	TASK 810
304 010 41	WINDOW HEAT OVERHEAT light: light on - L FWD.	30-41	TASK 801

Pitot Probe removal across years

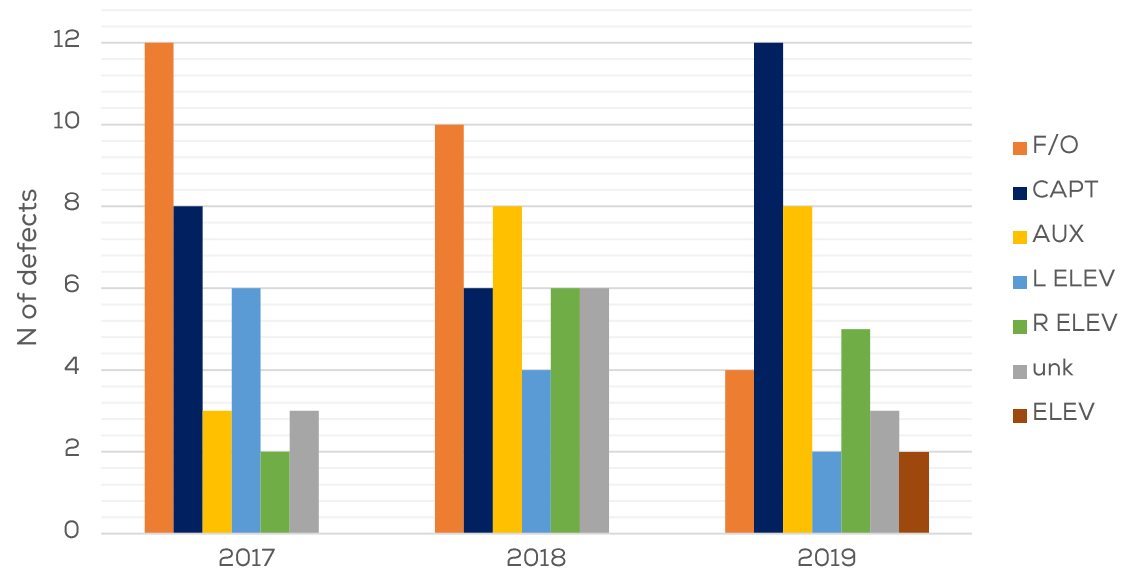


- Looking at defects and delay cost ok to focus analysis on last 3 years only.

Pitot Probe removal per position

- Front group probe n of defects/events higher than rear group – to be reviewed with Boeing and other operators
- Maybe front block more exposed to debris – TBC
- SB only performed on front block – effect on removal rates to be reviewed

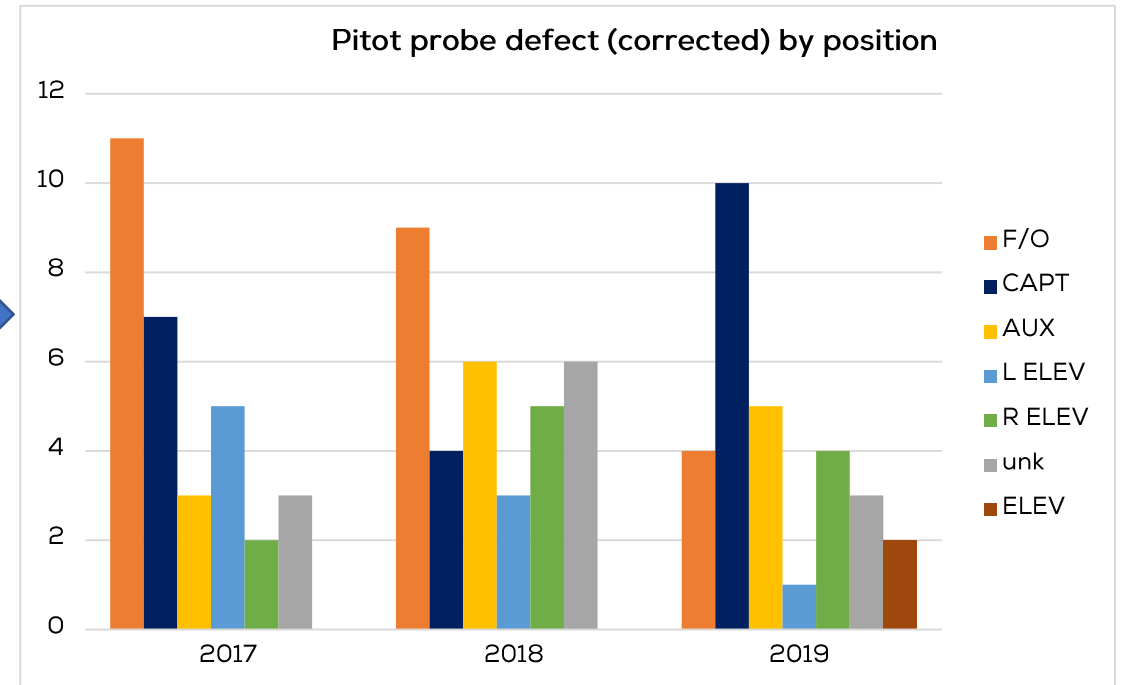
Pitot probe defect by installed position



With data correction (deletion of repeated defects on a single event)



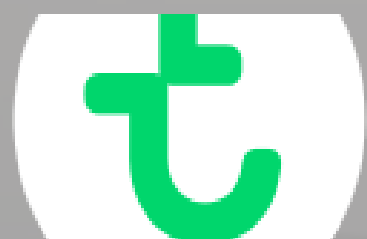
Pitot probe defect (corrected) by position



Pitot Probe Reliability investigation Conclusion and next steps

Next steps:

- ❑ Investigate why front group n of defect/events higher than rear group
- ❑ Check with Boeing if other operators experience high operational disruptions due to Pitot probe



transavia

