Data driven safety decisions

Kris Hutchings

Manager, Cabin Safety & Quality, Westjet

Data Driven Safety Decisions

Kris Hutchings

Manager, Cabin Safety & Quality

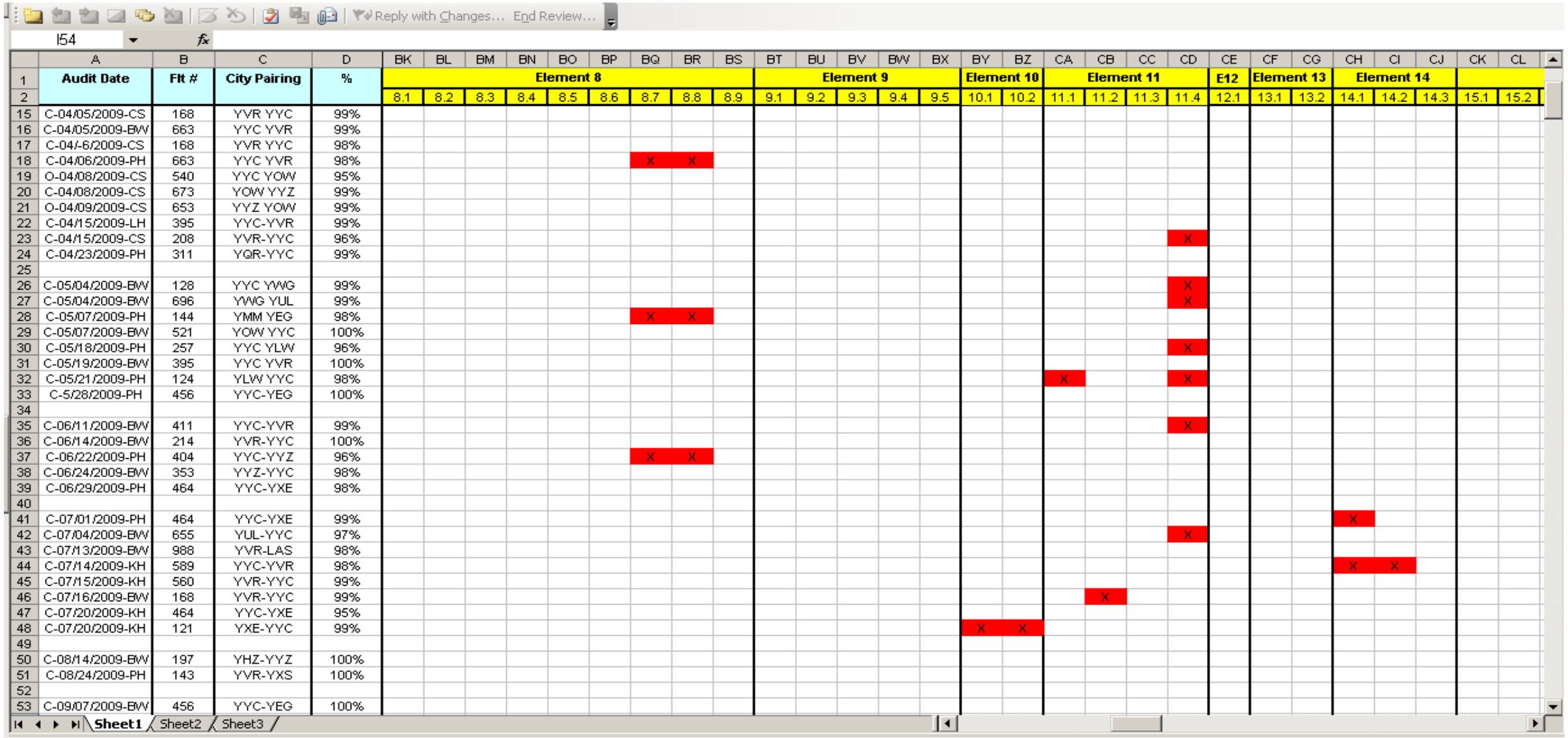
WESTJET Love Where You're Going

“Without data, you are just another person with an opinion”

- W. Edwards Deming

A brief look back…

We had numerous Excel sheets like this…



	A	B	C	D	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL
1	**Audit Date**	**Flt #**	**City Pairing**	**%**	**Element 8**									**Element 9**					**Element 10**		**Element 11**				**E12**	**Element 13**		**Element 14**				
2					8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.1	9.2	9.3	9.4	9.5	10.1	10.2	11.1	11.2	11.3	11.4	12.1	13.1	13.2	14.1	14.2	14.3	15.1	15.2
15	C-04/05/2009-CS	168	YVR YYC	99%																												
16	C-04/05/2009-BW	663	YYC YVR	99%																												
17	C-04/-6/2009-CS	168	YVR YYC	98%																												
18	C-04/06/2009-PH	663	YYC YVR	98%							X	X																				
19	O-04/08/2009-CS	540	YYC YOW	95%																												
20	C-04/08/2009-CS	673	YOW YYZ	99%																												
21	O-04/09/2009-CS	653	YYZ YOW	99%																												
22	C-04/15/2009-LH	395	YYC-YVR	99%																												
23	C-04/15/2009-CS	208	YVR-YYC	96%																				X								
24	C-04/23/2009-PH	311	YQR-YYC	99%																												
25																																
26	C-05/04/2009-BW	128	YYC YWG	99%																				X								
27	C-05/04/2009-BW	696	YWG YUL	99%																				X								
28	C-05/07/2009-PH	144	YMM YEG	98%							X	X																				
29	C-05/07/2009-BW	521	YOW YYC	100%																												
30	C-05/18/2009-PH	257	YYC YLW	96%																				X								
31	C-05/19/2009-BW	395	YYC YVR	100%																												
32	C-05/21/2009-PH	124	YLW YYC	98%																	X			X								
33	C-5/28/2009-PH	456	YYC-YEG	100%																												
34																																
35	C-06/11/2009-BW	411	YYC-YVR	99%																				X								
36	C-06/14/2009-BW	214	YVR-YYC	100%																												
37	C-06/22/2009-PH	404	YYC-YYZ	96%							X	X																				
38	C-06/24/2009-BW	353	YYZ-YYC	98%																												
39	C-06/29/2009-PH	464	YYC-YXE	98%																												
40																																
41	C-07/01/2009-PH	464	YYC-YXE	99%																								X				
42	C-07/04/2009-BW	655	YUL-YYC	97%																				X								
43	C-07/13/2009-BW	988	YVR-LAS	98%																												
44	C-07/14/2009-KH	589	YYC-YVR	98%																								X	X			
45	C-07/15/2009-KH	560	YVR-YYC	99%																												
46	C-07/16/2009-BW	168	YVR-YYC	99%																		X										
47	C-07/20/2009-KH	464	YYC-YXE	95%																												
48	C-07/20/2009-KH	121	YXE-YYC	99%															X	X												
49																																
50	C-08/14/2009-BW	197	YHZ-YYZ	100%																												
51	C-08/24/2009-PH	143	YVR-YXS	100%																												
52																																
53	C-09/07/2009-BW	456	YYC-YEG	100%																												

And our monthly safety scorecards looked like…

		August 2011	YTD 2011	August 2010	Year over Year Trend
Safety Reporting					
Inflight Safety Reports	Total # of Reports	73	656	58	▲
Reporting Ratio	Per 1000 Departures	5.31	6.41	4.50	▲
Reporting Culture	Reports per 100 Fas	3.24	29.16	2.78	▲
Inflight Proactive Reports	% of Total Reports	21%	18%	23%	▼
Report Close Out	Overdue Reports	5	*(As of September 5, 2011)*		

ARE YOU SURE THE DATA YOU GAVE ME IS CORRECT?
Dilbert.com DilbertCartoonist@gmail.com
I'VE BEEN GIVING YOU INCORRECT DATA FOR YEARS. THIS IS THE FIRST TIME YOU'VE ASKED.
5-7-14 ©2014 Scott Adams, Inc./Dist. by Universal Uclick
WHAT?
I SAID THE DATA IS TOTALLY ACCURATE.

Dashboard Capabilities

Inflight Reporting Culture

WESTJET

Date

1/1/2018 — 12/31/2018

A/C Type

All

Location

All

Occ Type

All

Risk Level

All

Investigation Type

All

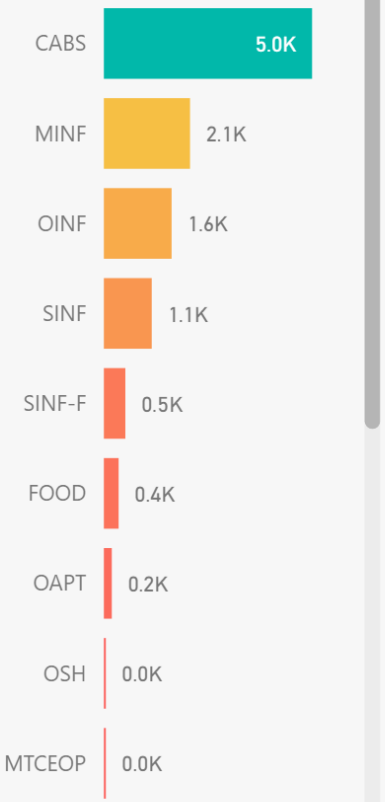
A/C Registration

All

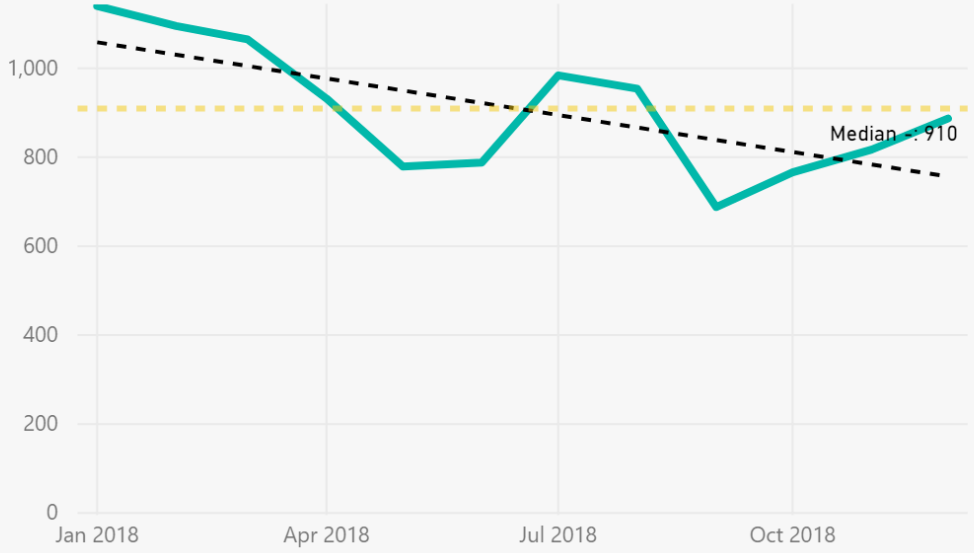
Total Inflight CRS Reports

10.90K

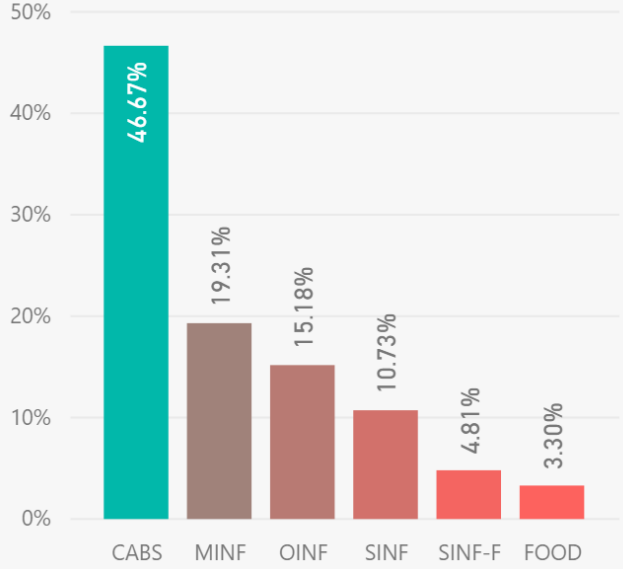
Report Numbers by Type



Inflight Total Reporting Rates

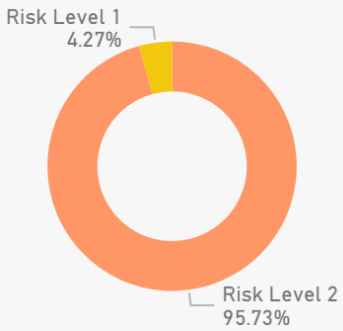


Breakdown by Report Type

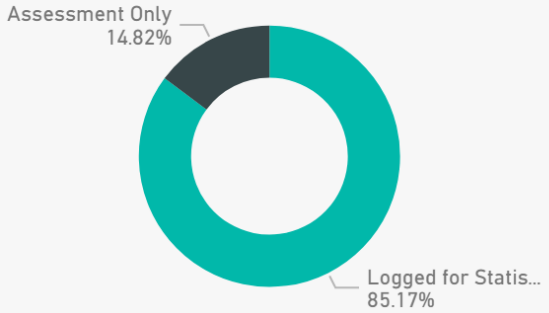


2018 January	February	March	April	May	June	July	August	September	October	November	December	Total	Total
1140	1095	1065	932	779	788	984	954	688	766	817	887	**10895**	**10895**

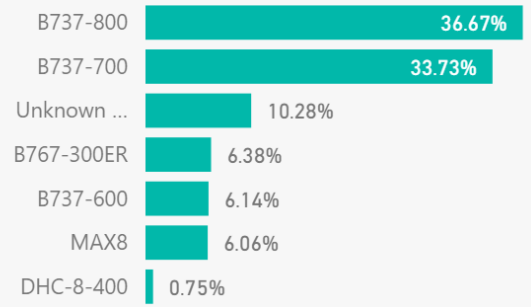
Breakdown by Risk



Reports by Action



Reports by A/C Type



What → Why

Threat & Error Management Classifications

Source: IATA Cabin Operations Safety Best Practices Guide

Inflight Safety Reporting - Event Descriptor TEM Analysis

WESTJET

Filter Menu

Date

1/1/2016 — 12/31/2018

Report Type

All

A/C Type

All

Incident City

All

Departure City

All

Destination City

All

Total Reports

3885

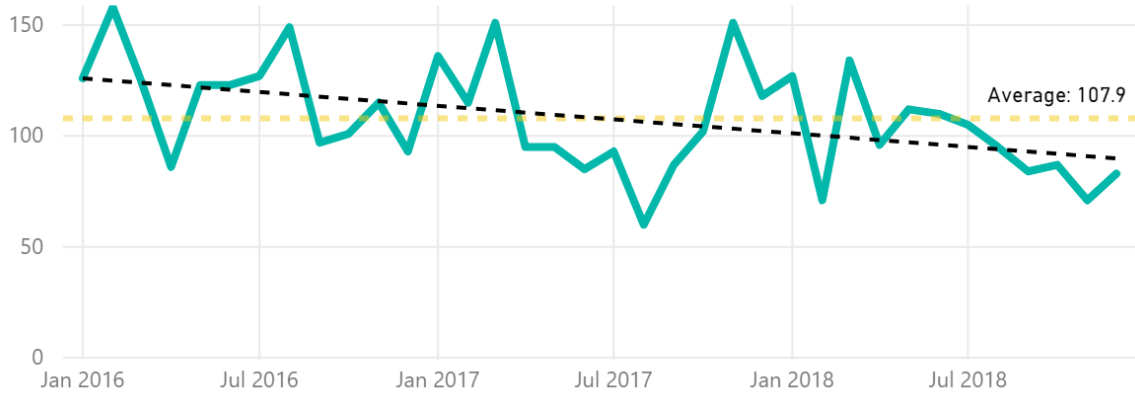
Reactive

2836

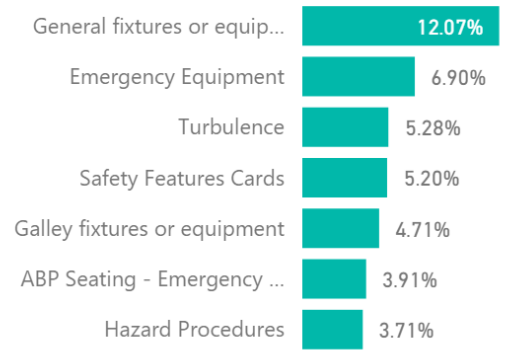
Proactive

182

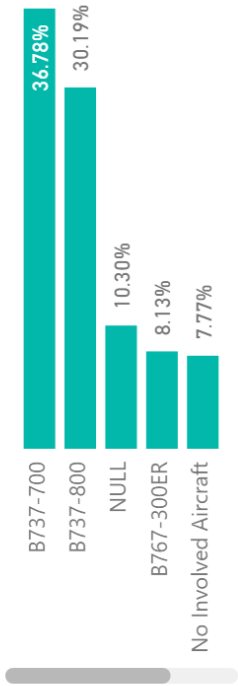
Report Trending



Event Descriptor

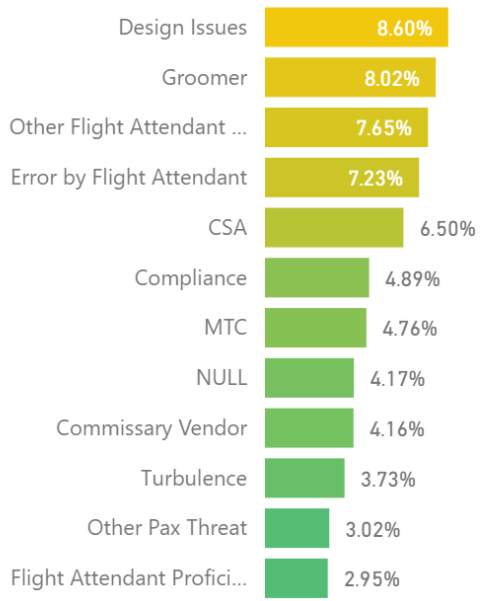


Aircraft



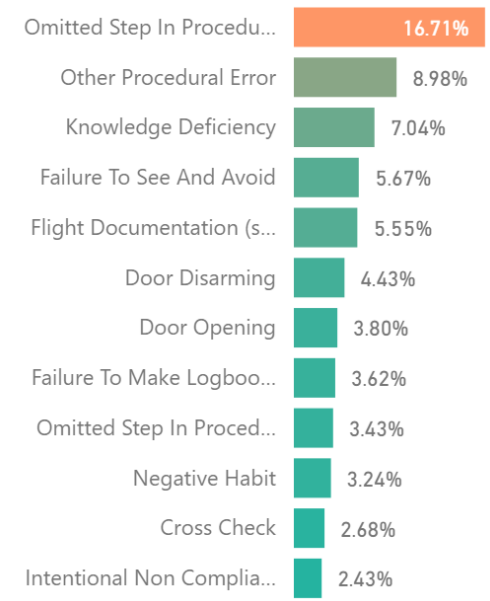
Threats

9686



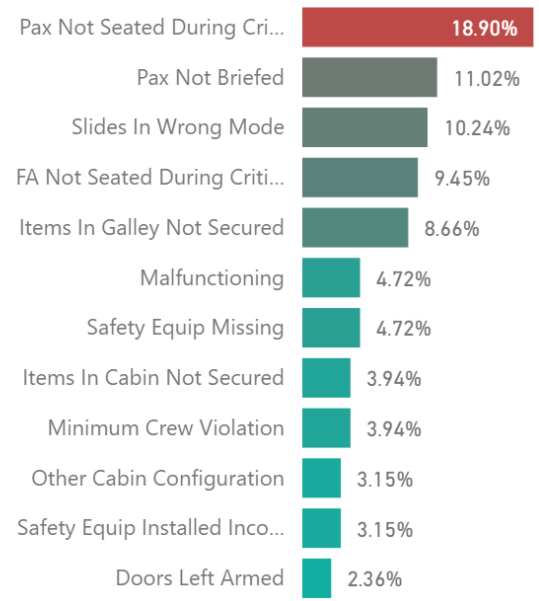
Errors

2868



UCS

201



Inflight Safety Reporting - Event Descriptor TEM Analysis

WESTJET

Filter Menu

Date

1/1/2016 — 12/31/2018

Report Type

All

A/C Type

All

Incident City

All

Departure City

All

Destination City

All

Reported By

All

Flight Number

All

Total Reports

3885

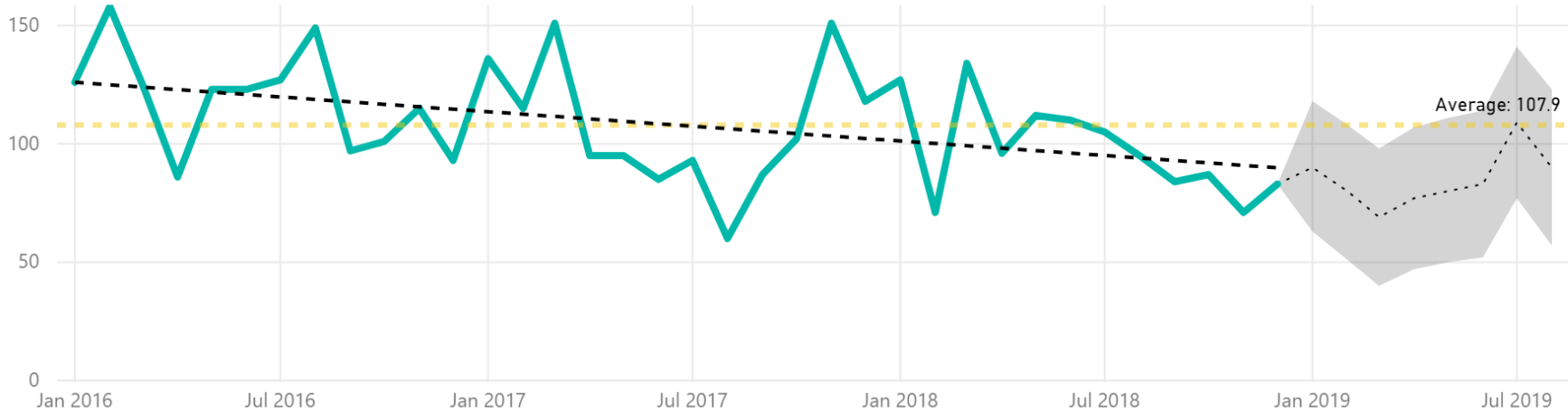
Reactive

2836

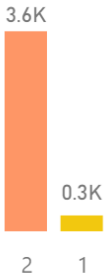
Proactive

182

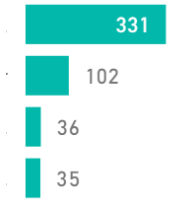
Report Trending with Perdictive Forcasting



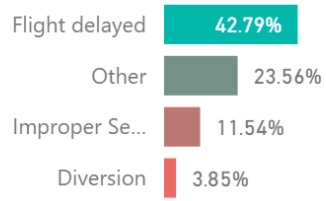
Risk Level



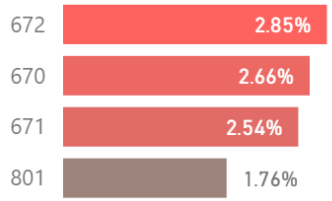
Reported By



Effect on Flight

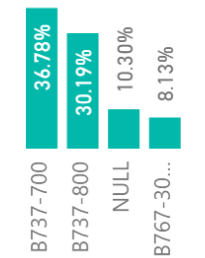


Reports by Tail #



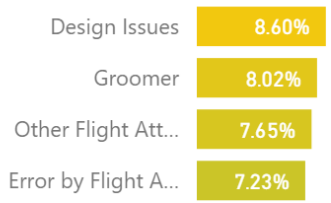
Reports by Flight Number

Aircraft



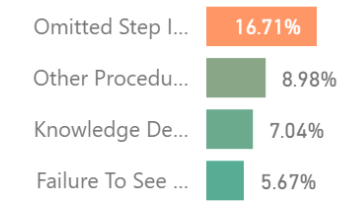
Threats

9686



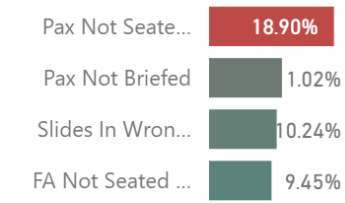
Errors

2868

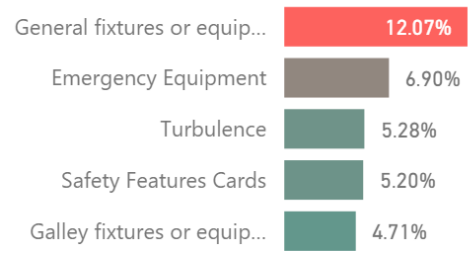


UCS

201



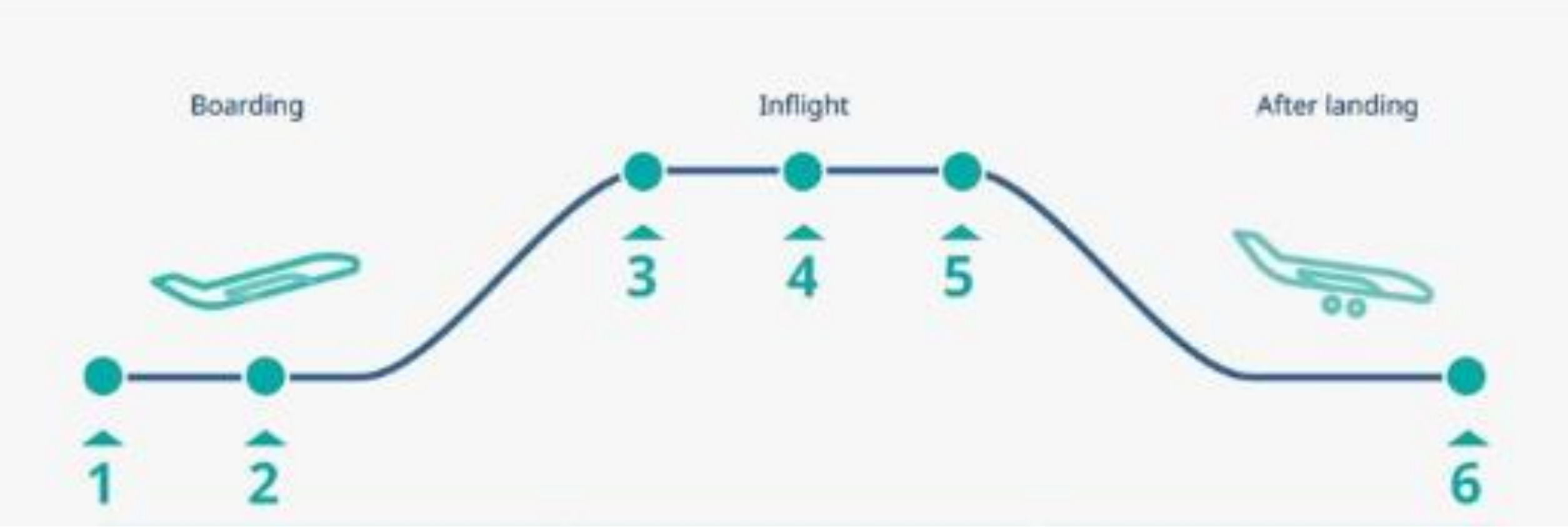
Event Descriptor



Case Study:
Safety vs. Service

Marketing has asked if it is possible to…

How much time is available for service?



Inflight Cabin Operations Safety Assessment

WESTJET

Filter Menu

Date

1/1/2018 — 12/22/2018

Service Level

All

A/C Type

All

Audit Type

All

CCM

All

GR Assessment

All

Route Type

All

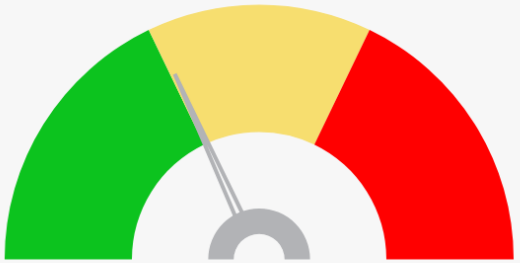
Departure

All

Arrival

All

120 Day Performance Score



2.55

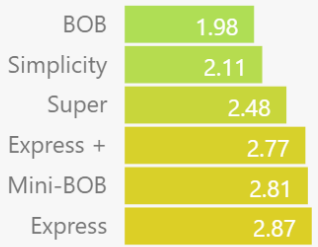
This visual does not support exporting.

182 Open	**164** Closed
253 Domestic	**93** International

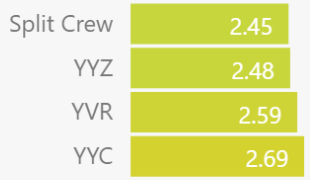
32 YVR Crew	**110** YYC Crew	**80** YYZ Crew

Performance Score by Audit Type

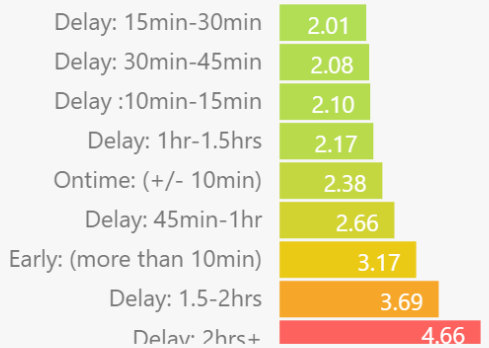
Performance Score by Service Offering



Performance Score by Crew Base



Performance Score by Delay



Performance Score by Route

Departure City	Arrival City	# of Assessmnets	Score
YEG	YYJ	1	7.77
RSW	YYZ	1	6.98
DUB	YYC	1	6.37
YYC	DUB	1	5.71
LIR	YYZ	2	5.56
LAX	YYZ	1	5.34
PHX	YVR	1	5.25
PHX	YYC	1	5.13
YWG	YHM	1	4.76
YYC	YEG	2	4.36
YLW	YYZ	2	4.24
YYZ	YWG	6	4.07
IAH	YYC	1	4.05
YEG	YYC	1	3.72
YYC	LAX	3	3.66
YYC	YOW	2	3.66
YYC		1	3.63
YQQ	YEG	3	3.52
YVR	OGG	1	3.43
YUL	YYZ	1	3.35
YYZ	YEG	6	3.29
YYC	PSP	2	3.18
LAS	YYC	2	3.16
YVR	YEG	4	3.14
YYC	YVR	21	3.02
YYC	YLW	8	3.02
YYC	YQQ	2	2.91
YYC	YXX	6	2.88
PSP	YYC	4	2.88
YWG	YYZ	5	2.87
Total		**346**	**2.55**

Inflight Cabin Operations Safety Assessment

WESTJET

Filter Menu

Date

1/1/2018 — 12/22/2018

Service Level

All

A/C Type

All

Audit Type

All

CCM

All

GR Assessment

All

Route Type

All

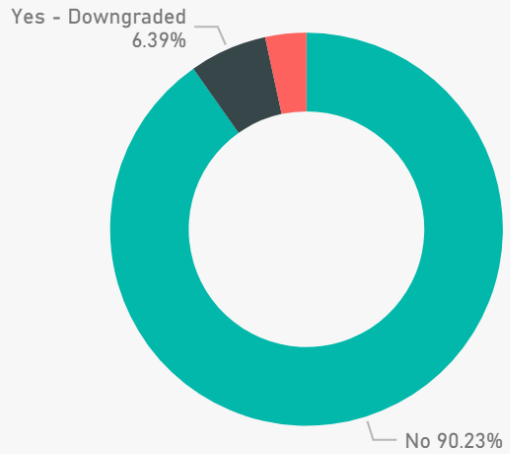
Departure

All

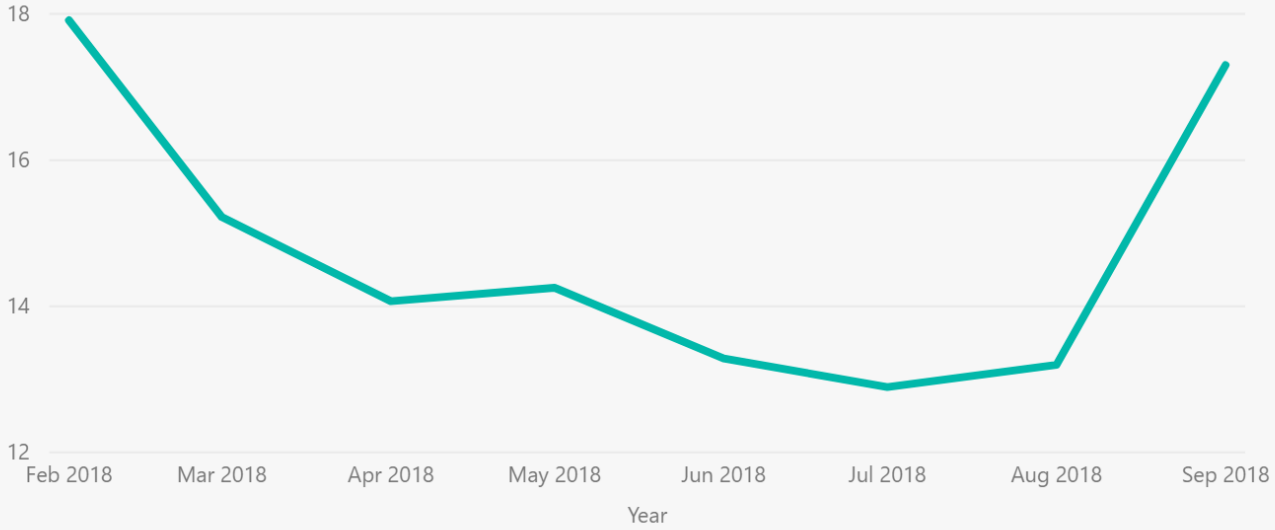
Arrival

All

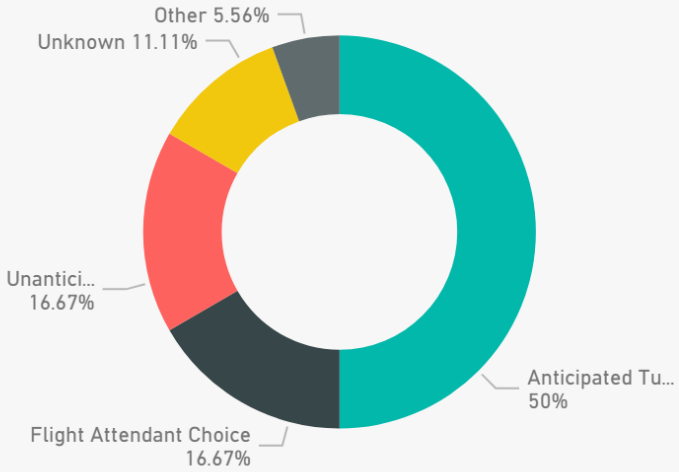
Service Modification



Service Performance (Average Time Per Guest (Sec) Month / Month)



Reason for Modification



Average Service Setup Time (MIN)

11.93

Average Service Restow Time (MIN)

5.91

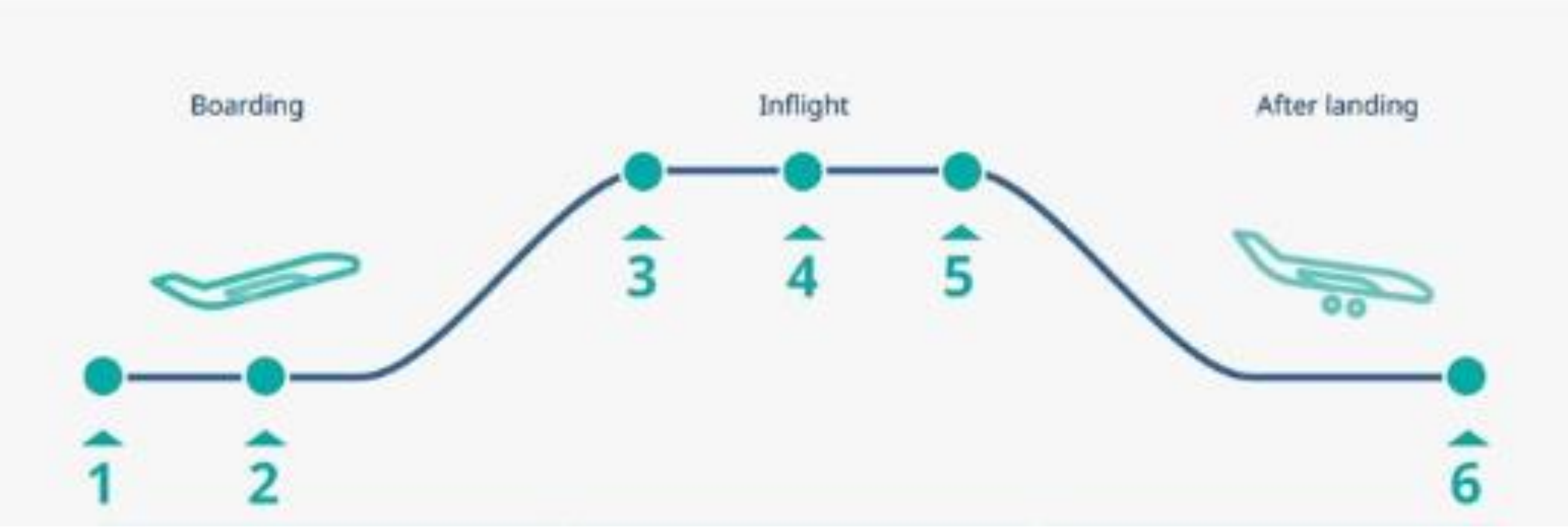
Average Service Delivery Time (MIN)

28.07

14.38

Average Time Per Guest (Secs)

How much time is available for service?



“Numbers have an important story to tell. They rely on you to give them a clear and convincing voice”

- Stephen Few

WESTJET