



BOBCAT ATFM Operational Updates

ATFM/SG/16
6 - 10 April 2026





- **Refresher: What is BOBCAT?**
- **Current Afghanistan Airspace Arrangements**
- **BOBCAT Post-Operations Analysis:
4 Sep 2025 – 28 Feb 2026**
- **Impact of Middle East Political Tension (March 2026)**

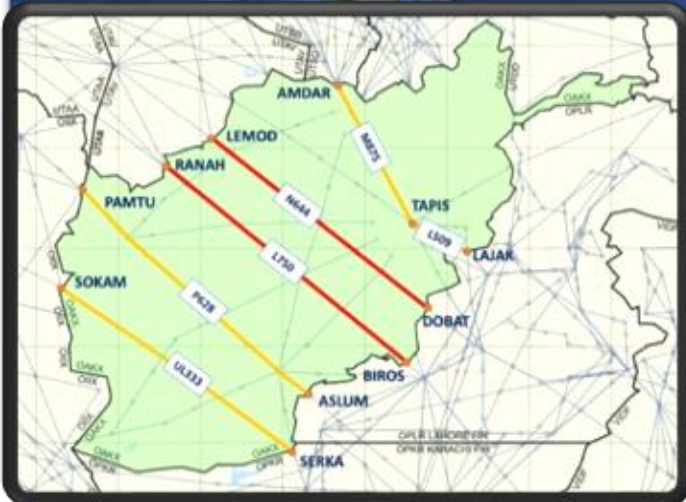
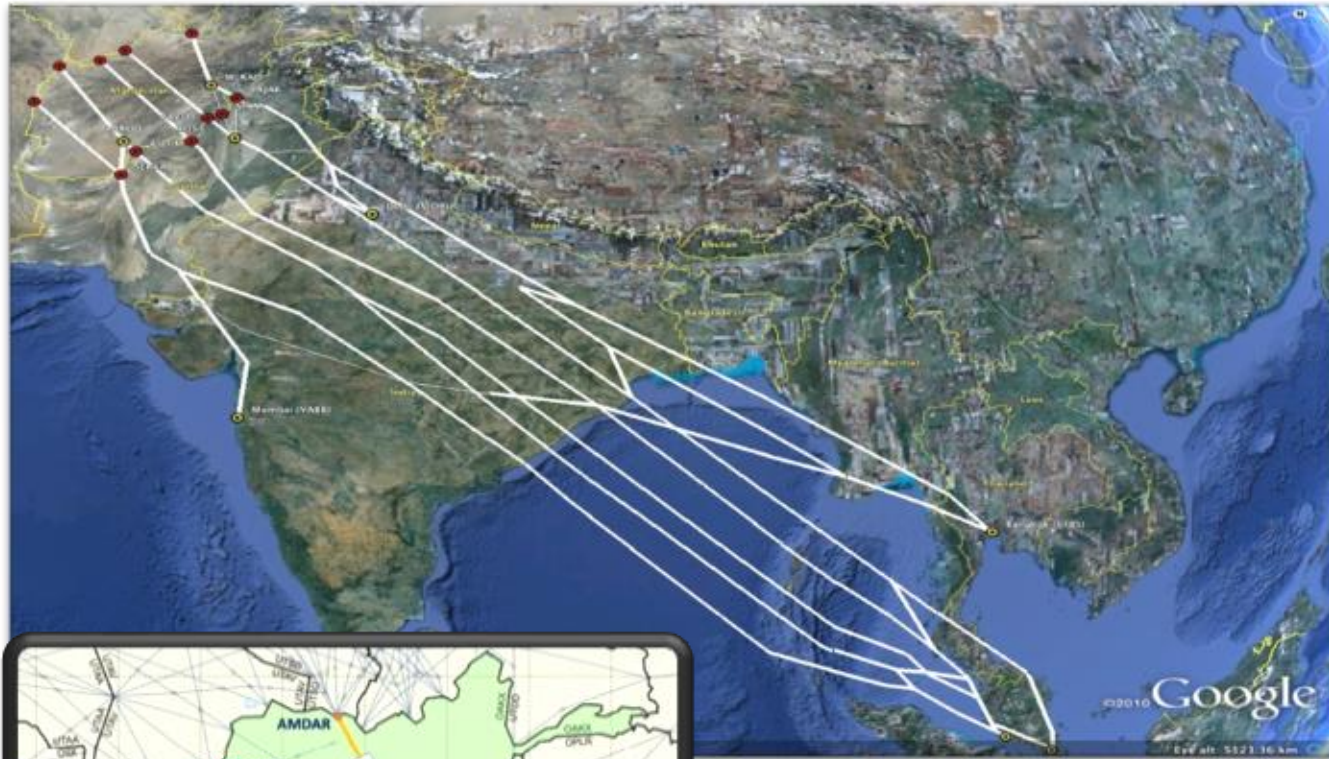




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Refresher: What is BOBCAT?



*Managing westbound
nighttime traffic through Kabul
FIR between 2000 – 2359 UTC
through ATFM slot assignment
based on Airspace Users' slot
requests (entry waypoint, FL,
entry time)*

Operational since 2007



Menu	Flight Allocation (All member) Refresh in 165 second(s)..							
Flight Allocation All Allocation	Organization:	Departure Date:						
Waypoint Allocation	AEROTHAI	Sun, 05 Oct 2025 <input type="button" value="View"/>						
View Free Slots	Departure Airport: ▶							
Allocation History	Flights With Slot Allocation							
ATFM Delay	▶ Callsign ▲	Aircraft	Dep	Dest	Date	EOBT	CTOT	Delay
	1 ▶ AFR225	B772	VIDP	LFPG	05Oct25	1934	1954	0
	2 ▶ AUA26	B772	VTBS	LOWW	05Oct25	1640	1700	0
	3 ▶ BAW142	B788	VIDP	EGLL	05Oct25	2005	2033	0
	4 ▶ CAL061	A359	RCTP	EDDF	05Oct25	1425	1448	0
	5 ▶ CAL063	B77W	RCTP	LOWW	05Oct25	1520	1558	15
	6 ▶ CAL073	A359	RCTP	EHAM	05Oct25	1450	1513	0
	7 ▶ DLH761	A343	VIDP	EDDF	05Oct25	2125	2155	0
	8 ▶ DLH763	A388	VIDP	EDDM	05Oct25	2004	2025	1
	9 ▶ DLH773	A359	VTBS	EDDM	05Oct25	1820	1840	0
	10 ▶ EVA065	B787	RCTP	LOWW	05Oct25	1545	1605	0
	11 ▶ EVA071	B789	RCTP	EDDM	05Oct25	1525	1545	0
	12 ▶ EVA087	B77W	RCTP	LFPG	05Oct25	1530	1550	0
	13 ▶ HVN19	A359	VVNB	LFPG	05Oct25	1620	1641	6
	14 ▶ HVN31	B789	VVTS	EDDF	05Oct25	1605	1627	7
	15 ▶ HVN35	B789	VVNB	EDDM	05Oct25	1715	1730	0
	16 ▶ HVN37	B789	VVNB	EDDF	05Oct25	1555	1610	0
	17 ▶ KLM872	B78X	VIDP	EHAM	05Oct25	2225	2245	0
	18 ▶ SIA312	A359	WSSS	EGKK	05Oct25	1655	1715	0
	19 ▶ SIA322	A388	WSSS	EGLL	05Oct25	1500	1520	0

<https://www.bobcat.aero>

0000 – 1159 UTC

- Airlines submit slot request via BOBCAT system
- Bangkok ATFMU provides support as needed

1200 – 1210 UTC

- BOBCAT system allocates BOBCAT ATFM slots comprising:
 - CTOT at ADEP
 - Entry Waypoint for Kabul FIR
 - CTO at Kabul FIR Entry Waypoint
 - Flight Level at Kabul FIR Entry Waypoint

1210 – 2359 UTC

- Airlines submit FPL in accordance with BOBCAT slots
- Airlines adjust BOBCAT slots as needed through the BOBCAT system
- Airlines & DEP ATC manage departures in compliance with CTOT

BOBCAT Timeline: Aug 2021 – Sep 2025



G0145/22 NOTAMR G0062/22
 Q) OAKX/QAFX/IV/NBO/E/000/999
 A) OAKX
 B) 2206080730 C) 2208312359 EST
 E) ATS NOT AVAILABLE IN THE KABUL FIR.

Cessation of Enroute ATC in Kabul FIR
 Kabul FIR Contingency Plan activated



Avoidance of Kabul FIR by airspace users



Increasing tensions in the MID region

Typical S/SE Asia – Europe Routing
 Lanzhou – Urumqi ...
 Delhi – Lahore – Kabul – ...
 Mumbai – Muscat – Tehran – ...
 Mumbai – Muscat – ... – Baghdad – ...
 Mumbai – Muscat – Jeddah – Cairo – ...

Aug/Sep 2021

April 2024

April 2025

4 Sep 2025

BOBCAT Service suspended

Prep for BOBCAT resumption

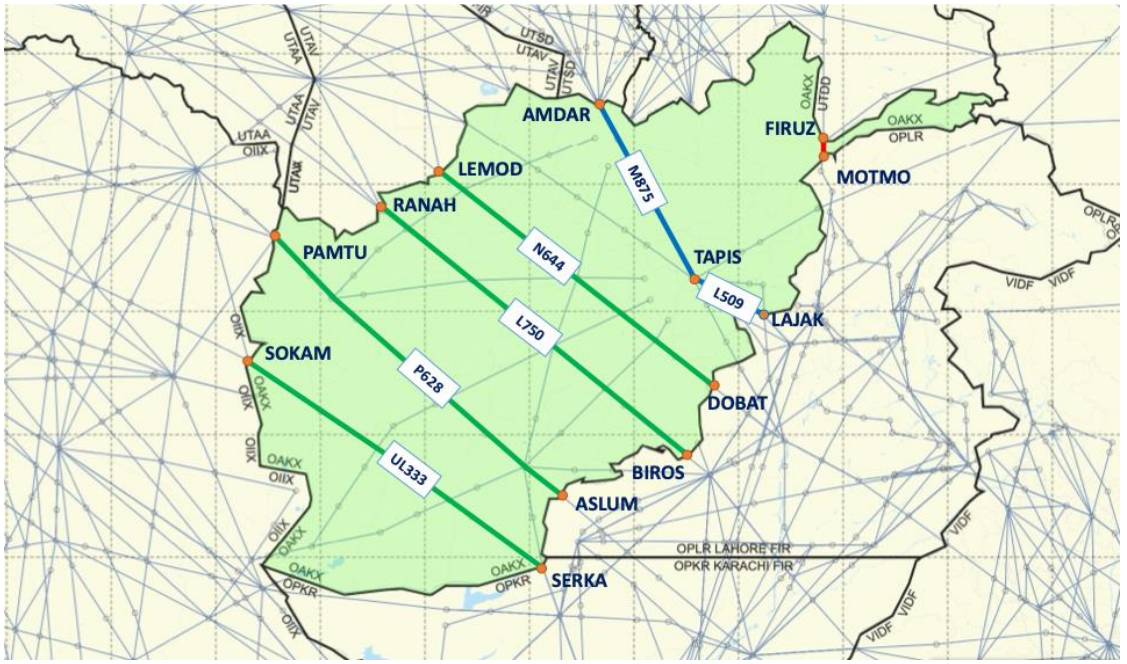
BOBCAT resumed



- ✓ Refresher: What is BOBCAT?
- **Current Afghanistan Airspace Arrangements**
- BOBCAT Post-Operations Analysis: 4 Sep 2025 – 28 Feb 2026
- Impact of Middle East Political Tension (March 2026)



BOBCAT service resumed
4 Sep 2025



<https://www.afgais.com/oakx-oakb-kabul-kabul-fir>

Kabul FIR Current Situation

- No enroute ATC service
- Overflight allowed on **5 contingency routes with 15-min longitudinal spacing at FIR boundary, with contingency procedure in effect (e.g., TIBA)**

Overflight	FL320 – FL510	FL300 – FL510
Arrivals & Departures	FL290 or below	FL290 or below
	UL333, P628, L750, N644	M875/L509, P500



BOBCAT System Configuration: Aircraft Spacing

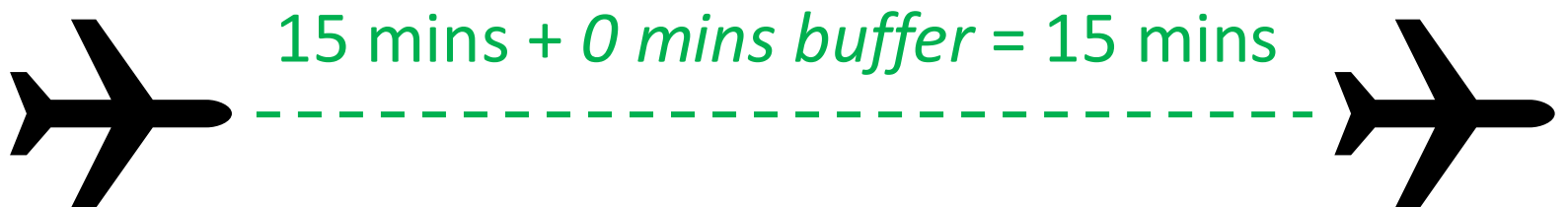
Current BOBCAT
Spacing Parameter



Kabul FIR
Contingency Plan



New BOBCAT
Spacing Parameter





- ✓ Refresher: What is BOBCAT?
- ✓ Current Afghanistan Airspace Arrangements
- **BOBCAT Post-Operations Analysis:
4 Sep 2025 – 28 Feb 2026**
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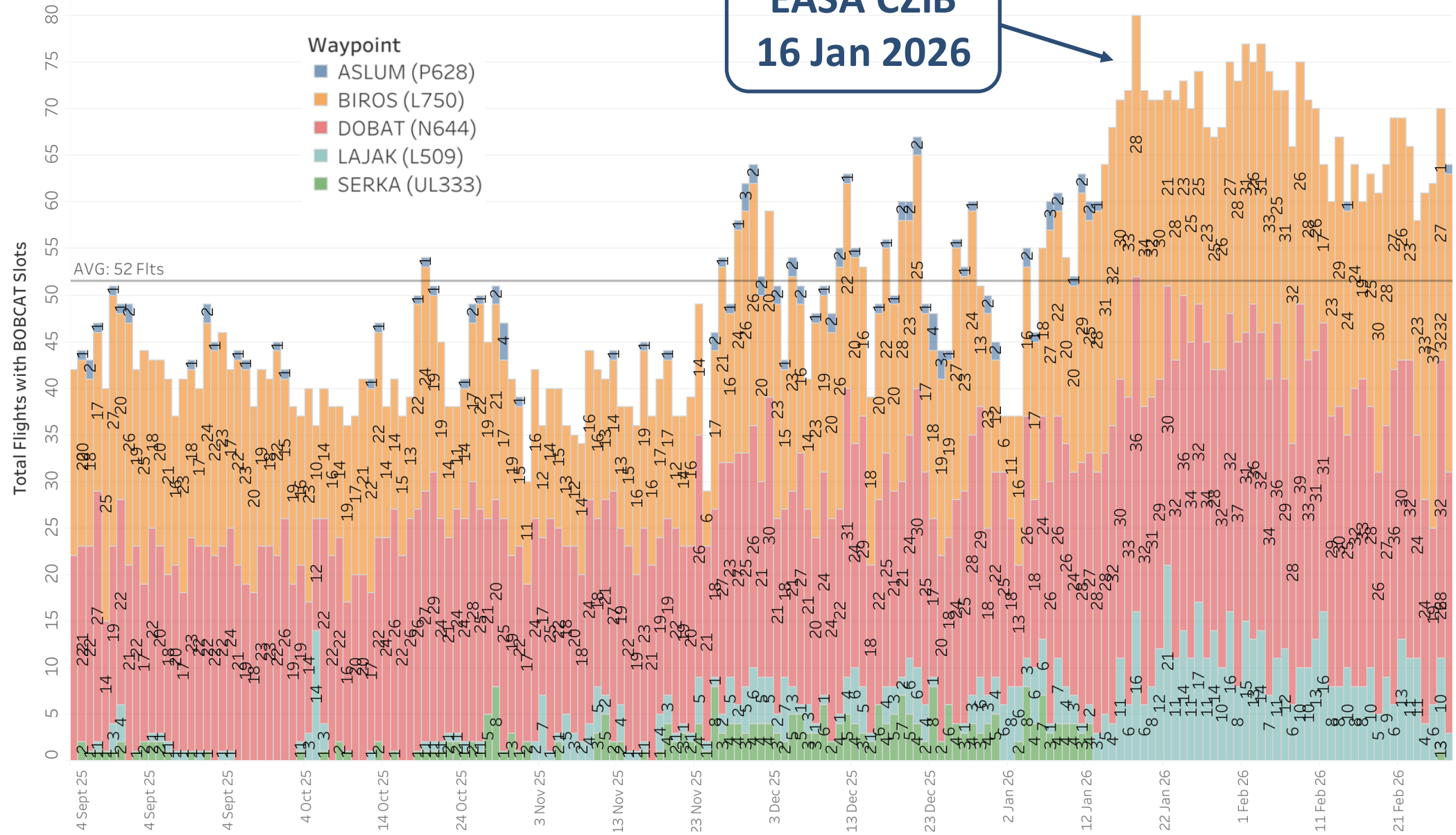


- **Analysis Period:** 178-day period (4 Sep 2025 – 28 Feb 2026)
- **Data Sources:**
 - BOBCAT Slot Allocation
 - ATS Movement Messages



AEROTHAI Aeronautical Radio of Thailand
ศูนย์วิทยุการบินแห่งประเทศไทย

BOBCAT Traffic Demand



9,180
Total Flights
(178 days)

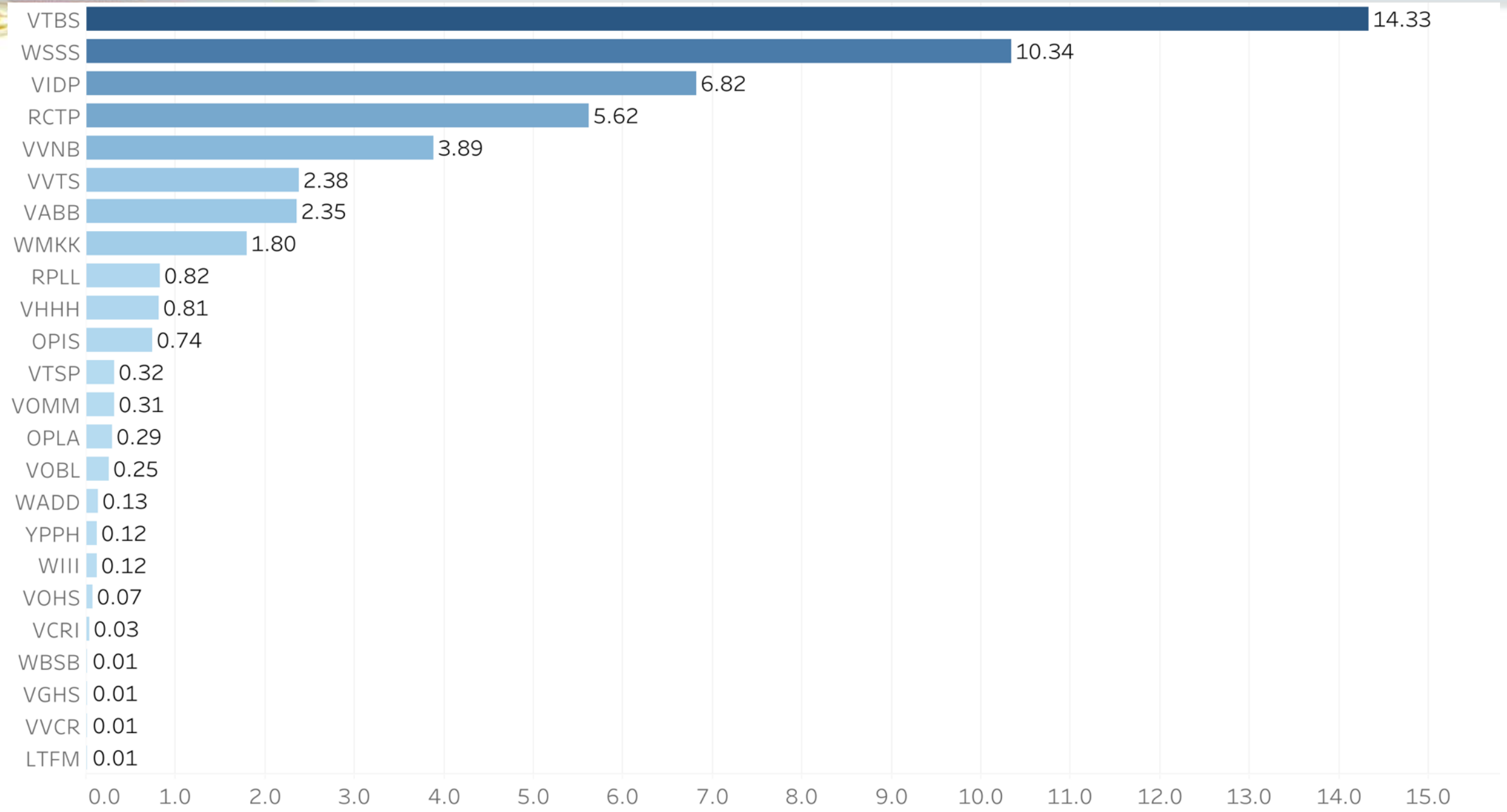
52
Average
flights/night

80
Peak
flights/night

Data Source: Final BOBCAT Slot Allocation (4 Sep 2025 – 28 Feb 2026)



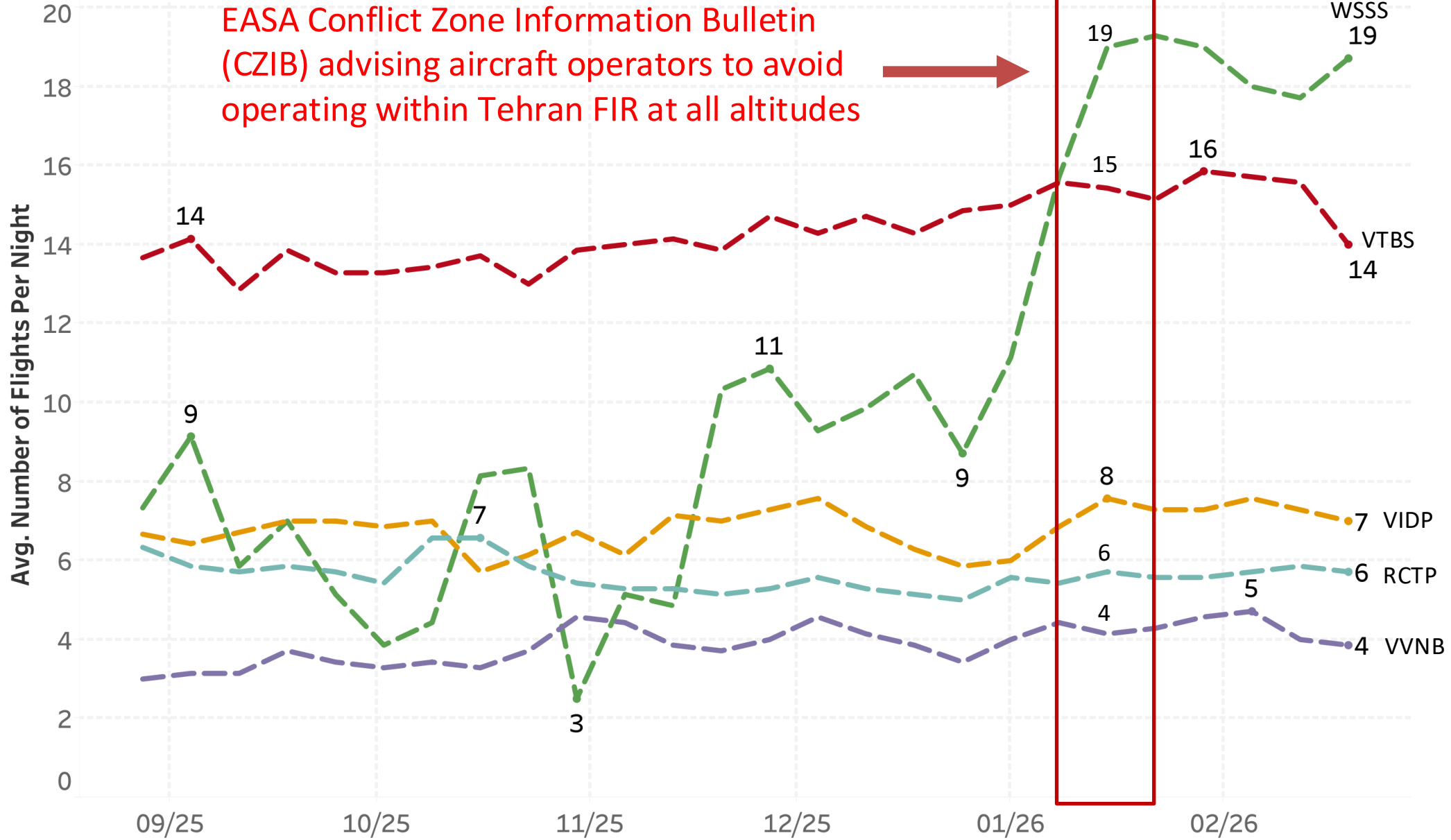
Average Daily BOBCAT Slot Allocation by ADEP



Data Source: Final BOBCAT Slot Allocation (4 Sep 2025 – 28 Feb 2026)



Average Daily BOBCAT Slot Allocation **Top 5 ADEP**



Data Source: Final BOBCAT Slot Allocation (4 Sep 2025 – 28 Feb 2026)

BOBCAT Slot Allocation by Airlines



THA 21.0% (11 flts/night)	DLH 9.5% (5 flts/night)	BAW 6.7% (4 flts/night)	THY 6.2% (4 flts/night)	EVA 5.3% (3 flts/night)		
SIA 11.1% (6 flts/night)	CAL 5.3% (3 flts/night)	SWR 4.6% (3 flts/night)	AUA 1.4% (1)	MAS 1.3% (1)	ACA 1.3% (1)	
			CFG 1.3% (1)		FIN	
HVN 10.1% (6 flts/night)	KLM 4.8% (3 flts/night)	AFR 4.2% (3 flts/night)	AHY 1.2% (1)	VIR		
			QFA			

29
Airlines Participation



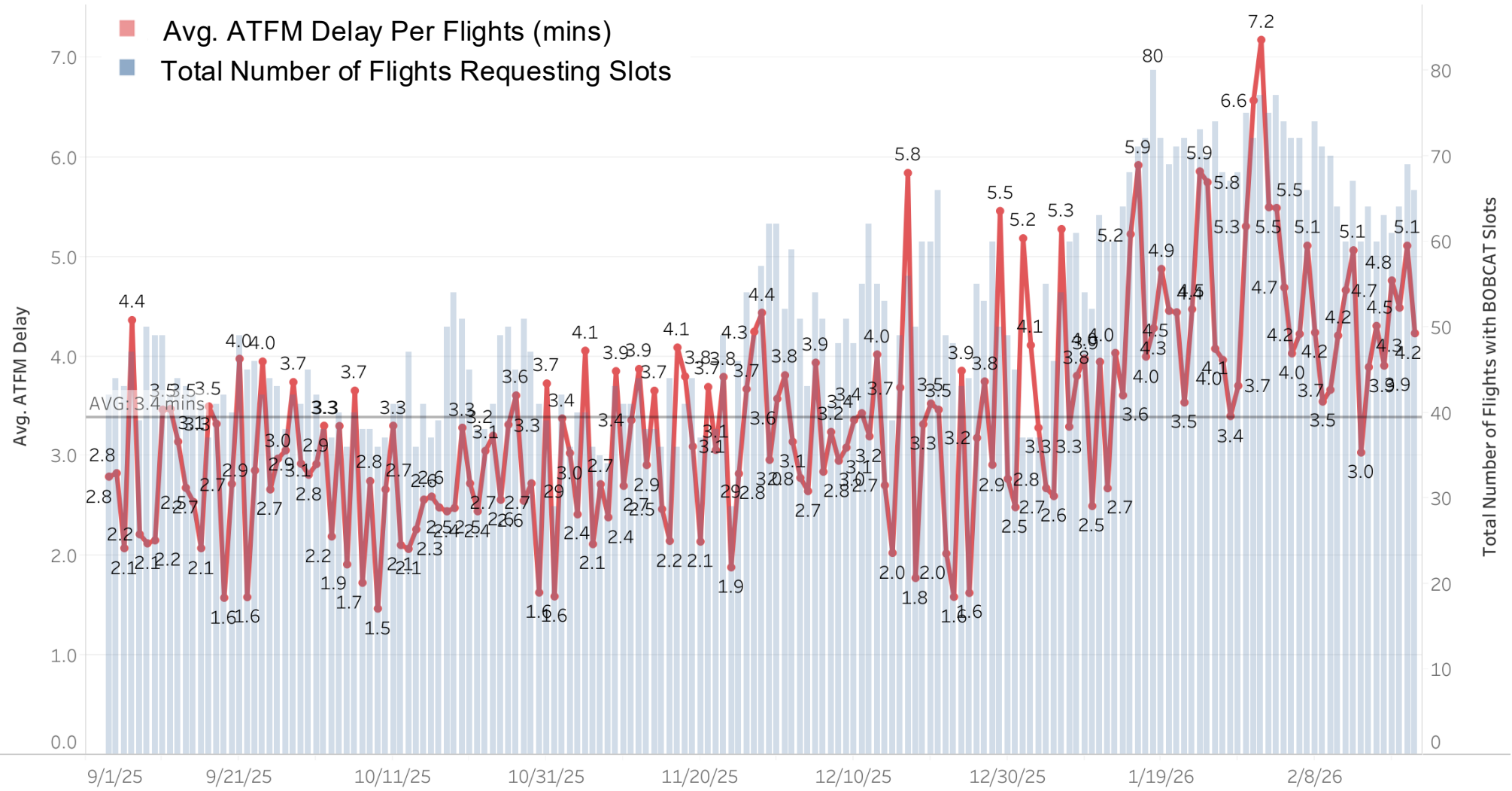
ATFM Delay Statistics

29,387 mins
Total ATFM Delay
(178 days)

3.6 mins/ft
Average
ATFM Delay

~3,350 tons
Fuel Savings

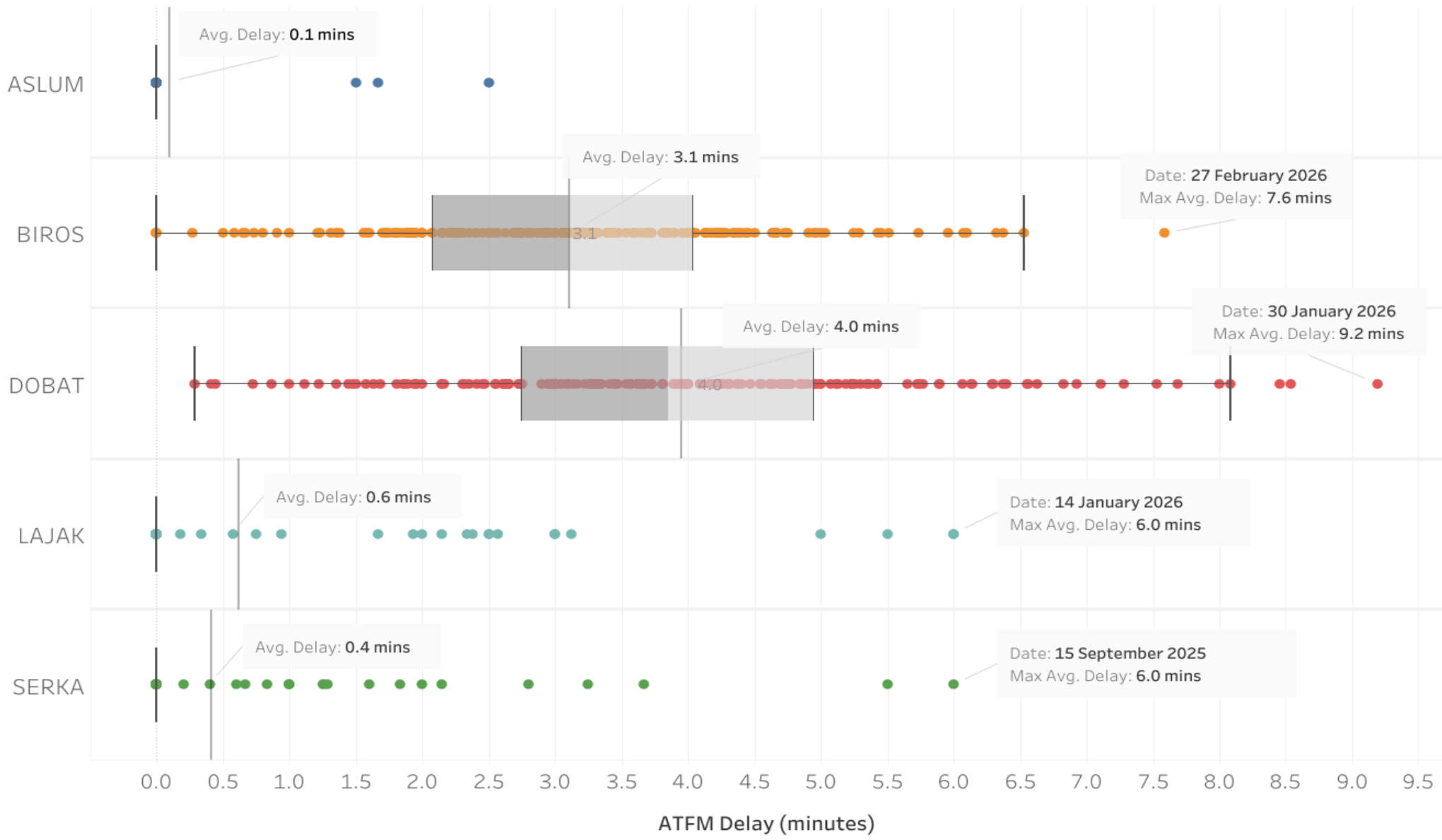
~10,586 tons
CO₂ emissions
reduced



Data Source: Initial BOBCAT Slot Allocation (4 Sep 2025 – 28 Feb 2026)



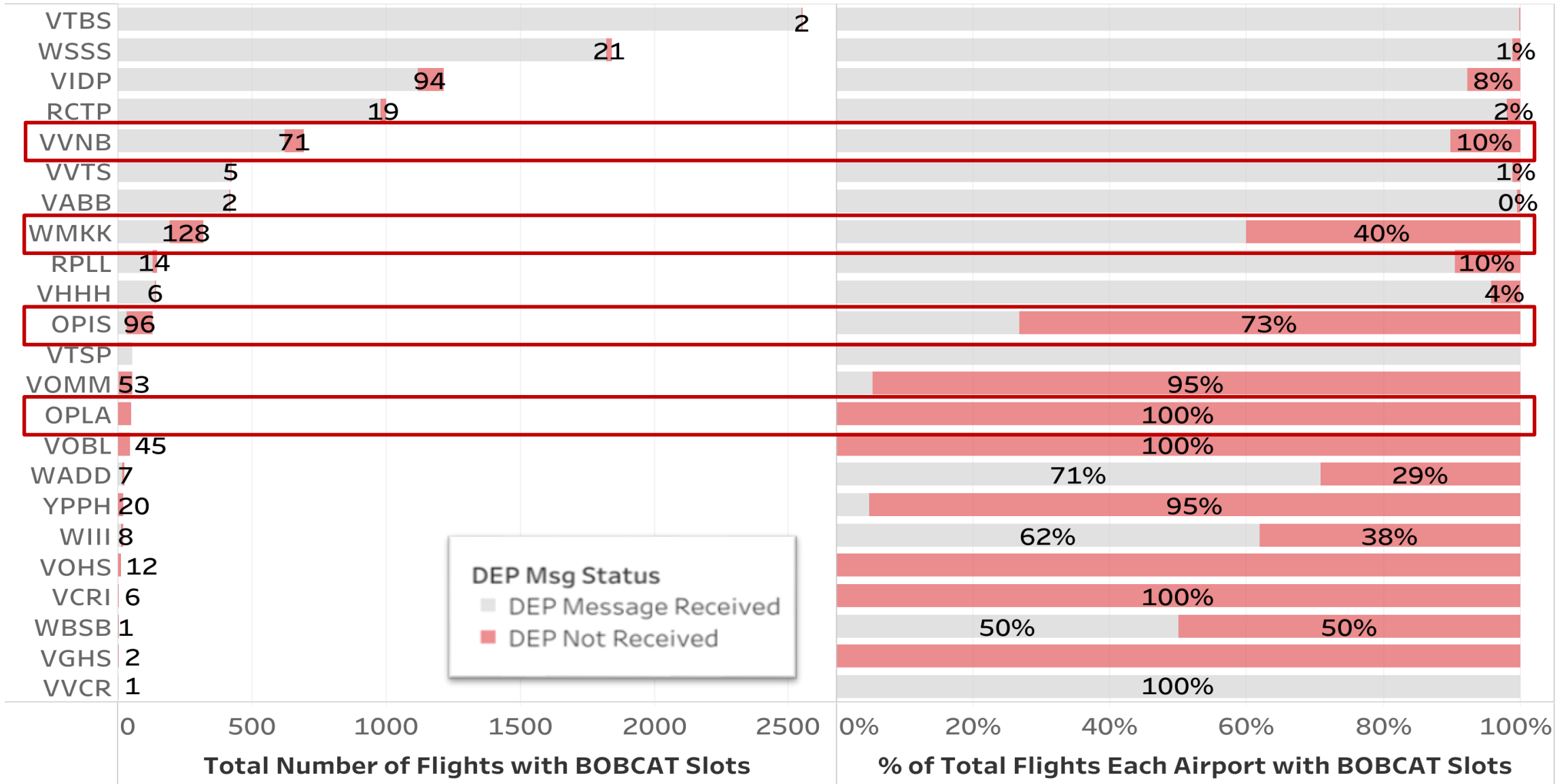
ATFM Delay Distribution by Entry Waypoints



Data Source: Initial BOBCAT Slot Allocation (4 Sep 2025 - 28 Feb 2026)

Non-Receipt of DEP Messages

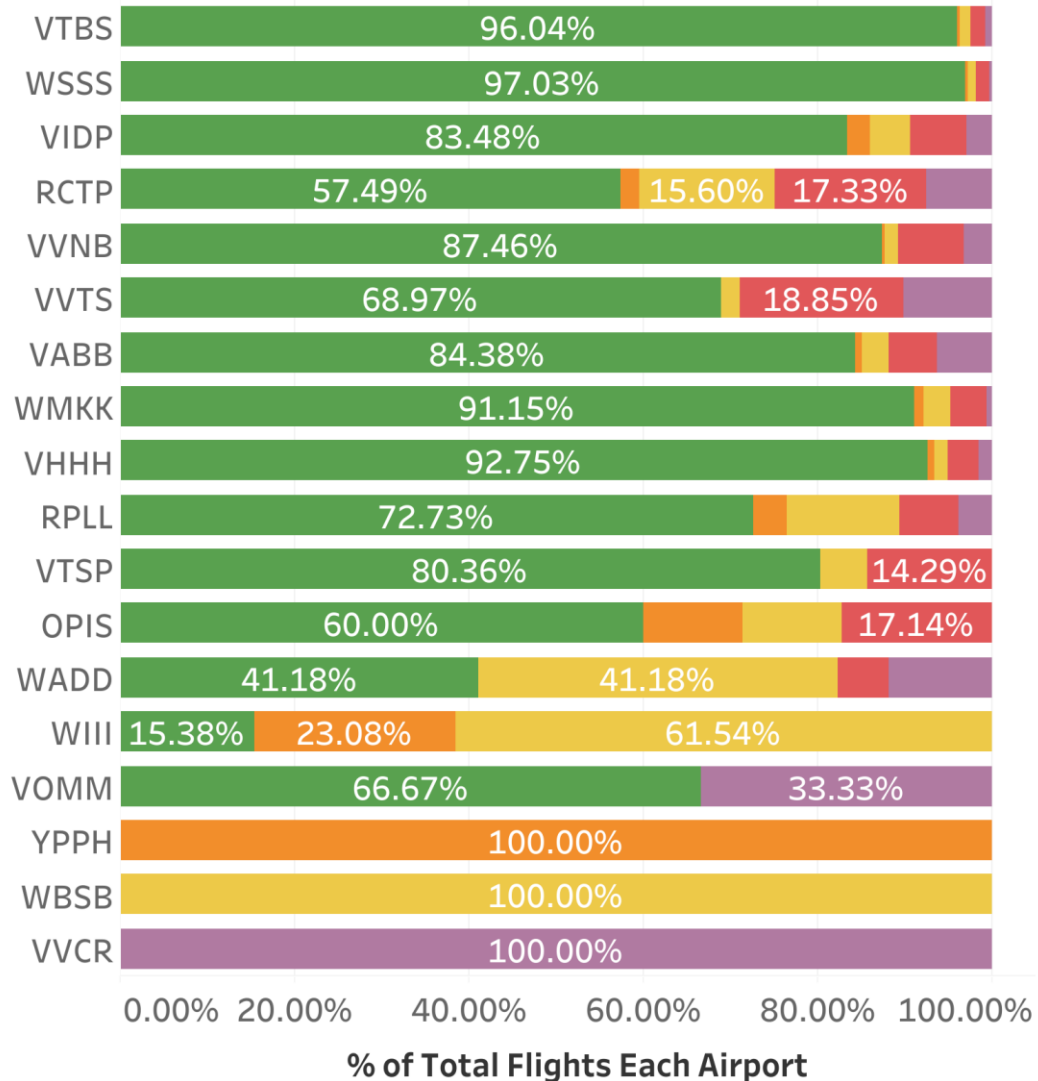
Non-Receipt DEP Message at Each Airport



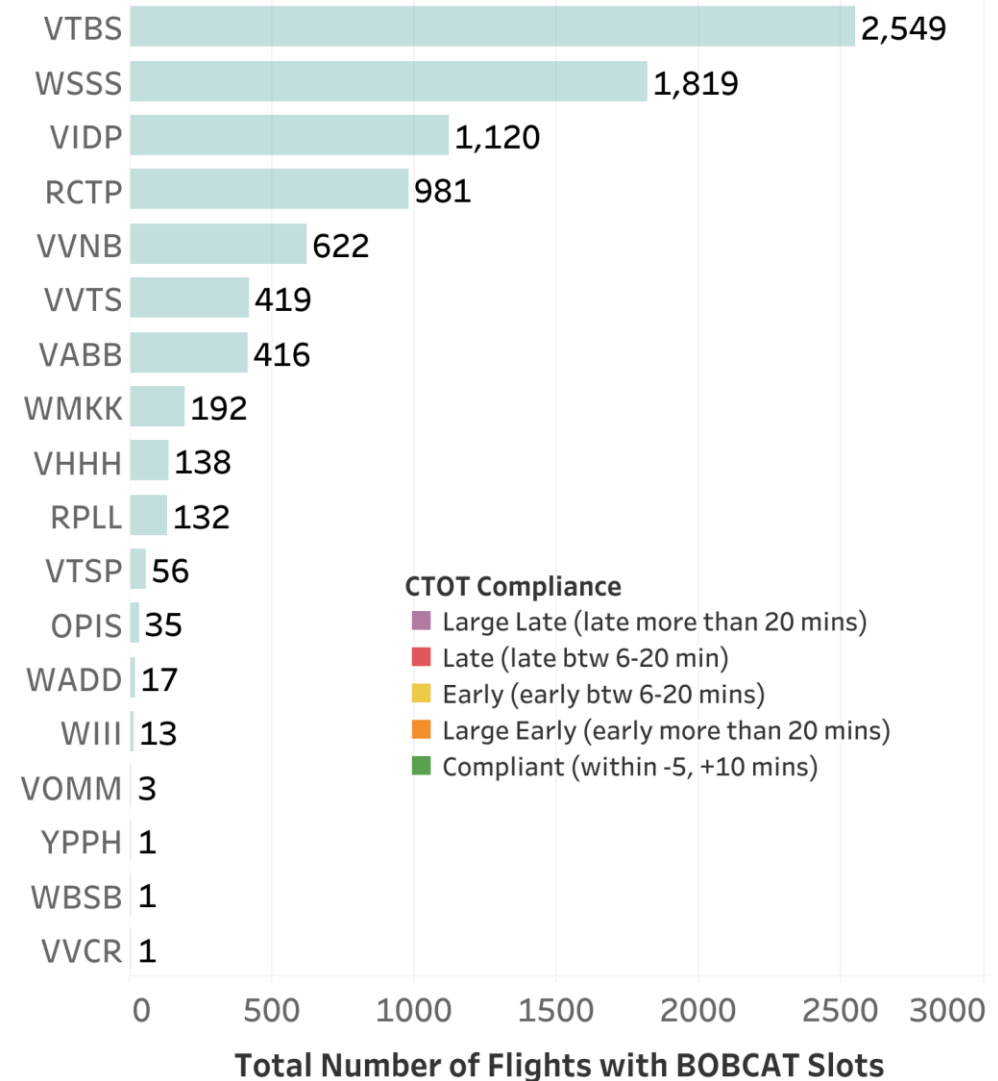
CTOT Compliance Analysis



CTOT Compliance at Each Airport



Total Number of DEP Message Received

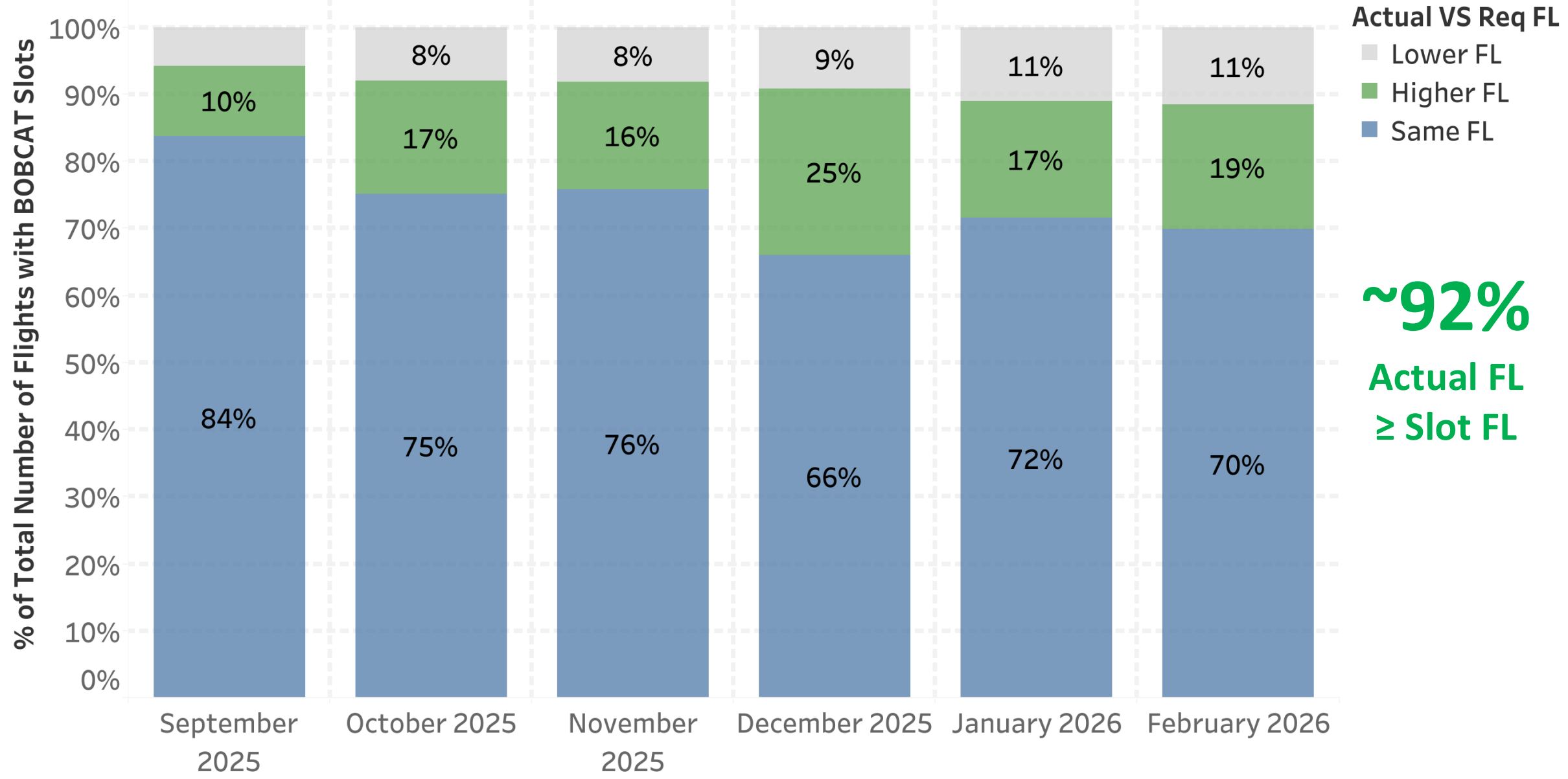


CTOT Compliance

- Large Late (late more than 20 mins)
- Late (late btw 6-20 min)
- Early (early btw 6-20 mins)
- Large Early (early more than 20 mins)
- Compliant (within -5, +10 mins)

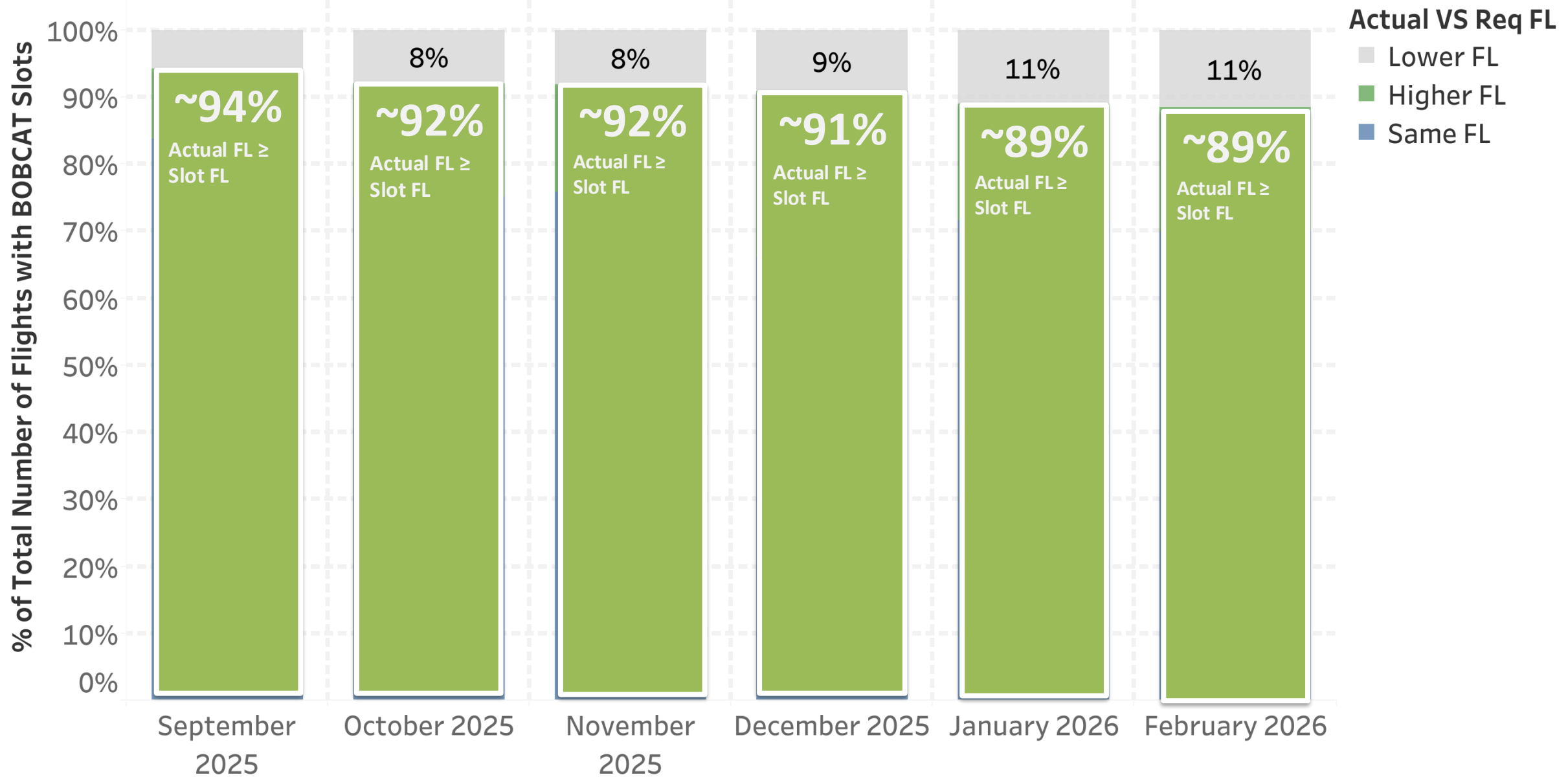


Actual Kabul FIR Entry Flight Levels



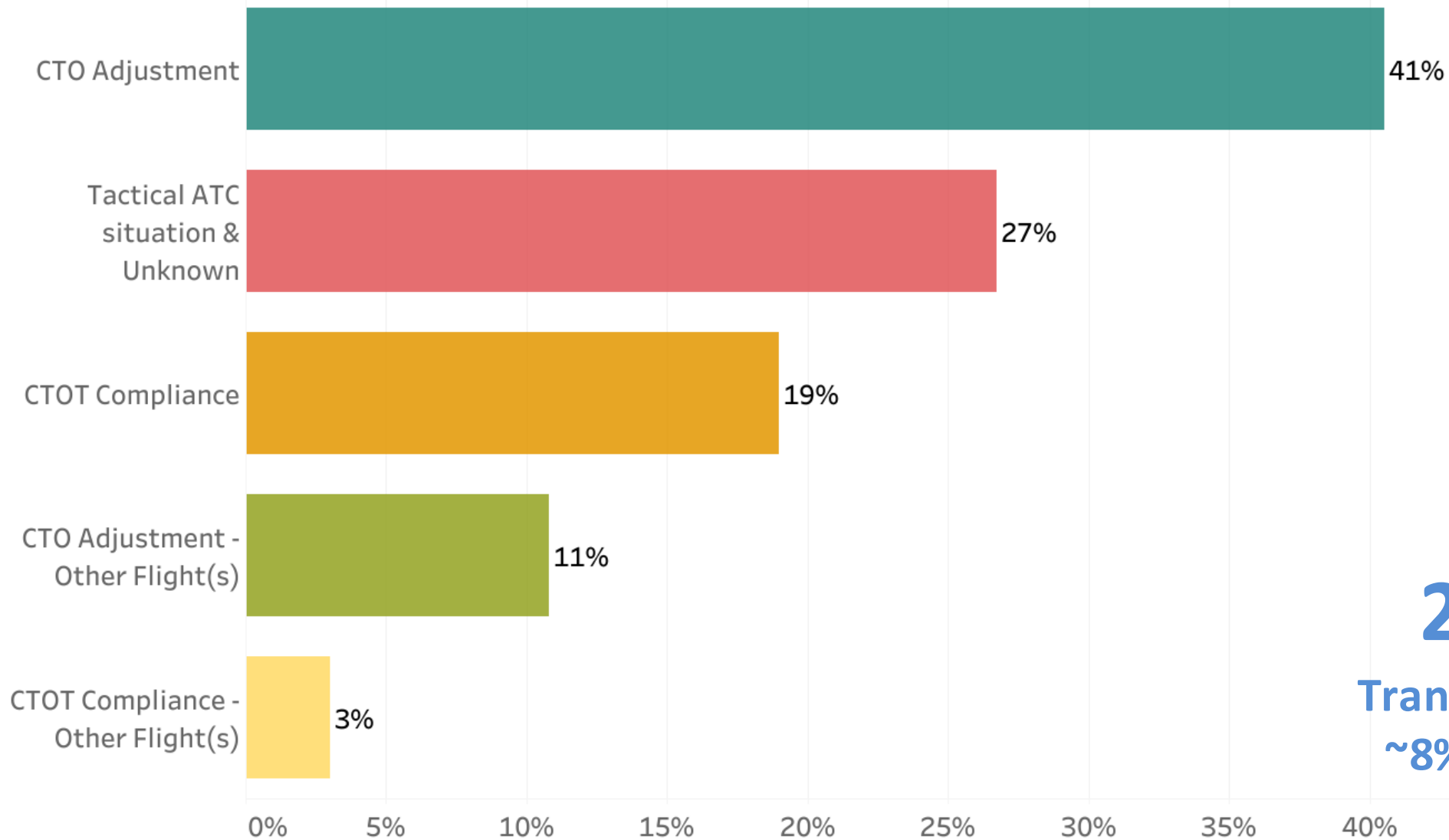
Data Source: Final BOBCAT Slot Allocation & ANSP Traffic Sample Data (4 Sep 2025 – 21 Feb 2026)

Actual Kabul FIR Entry Flight Levels



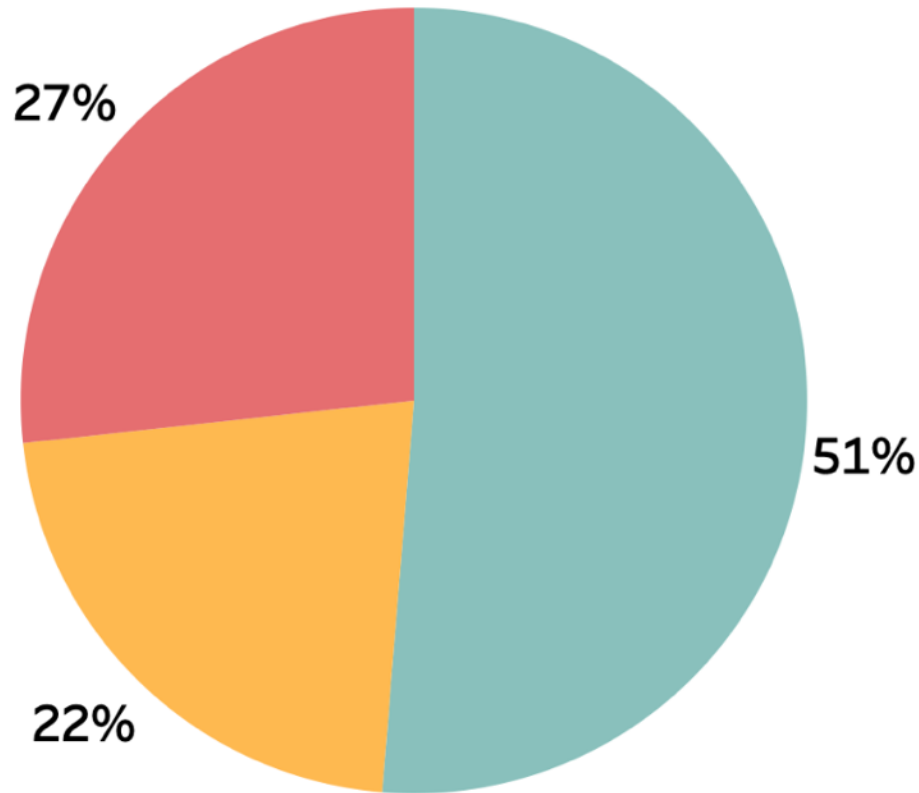


Reasons for Lower Entry Flight Levels



232 Flights
Transits at Lower FL
~8% of TSD from PAA

Reasons for Lower Entry Flight Levels



51%

CTO Compliance

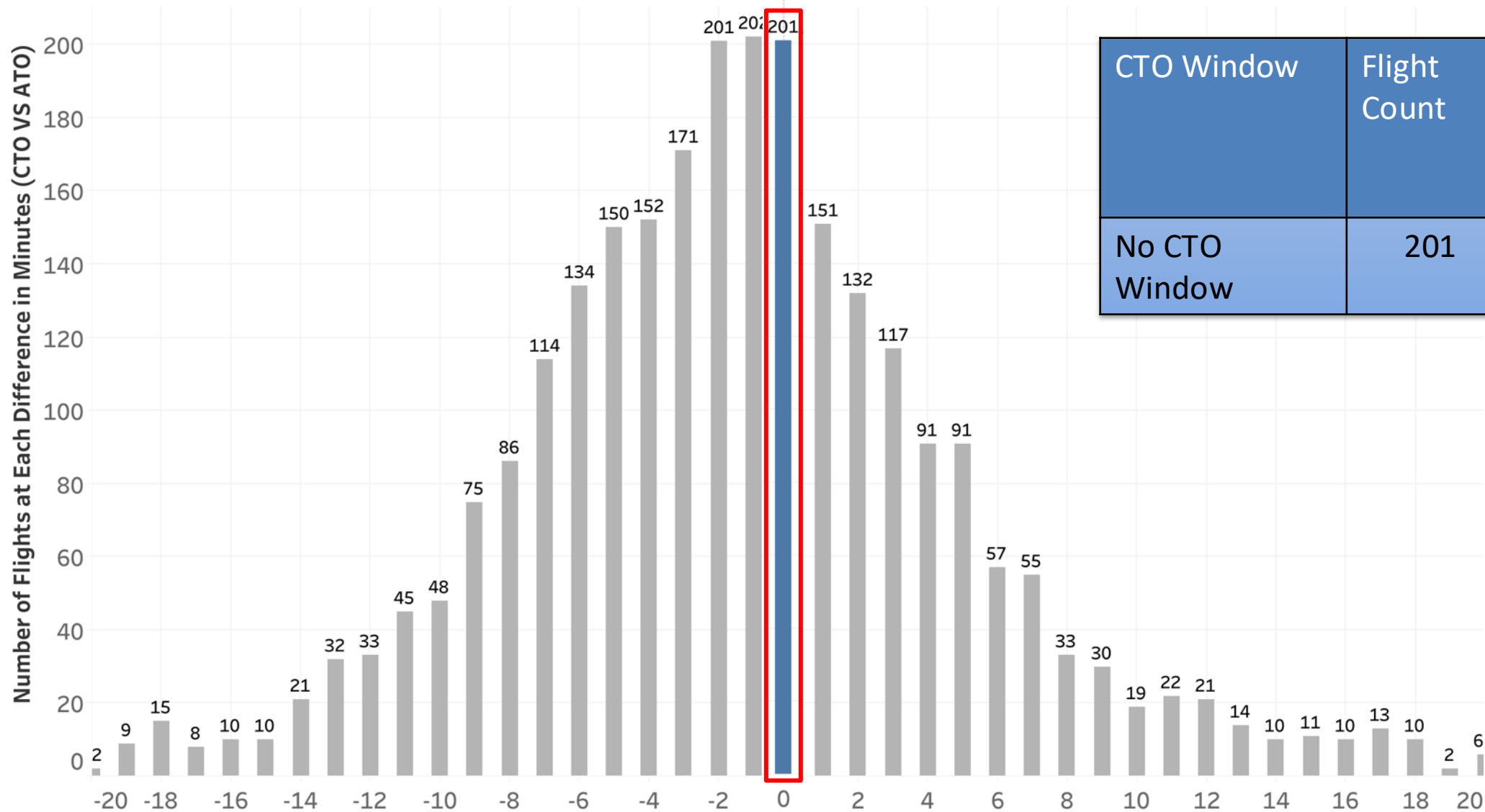
27%

Tactical ATC Issue

22%

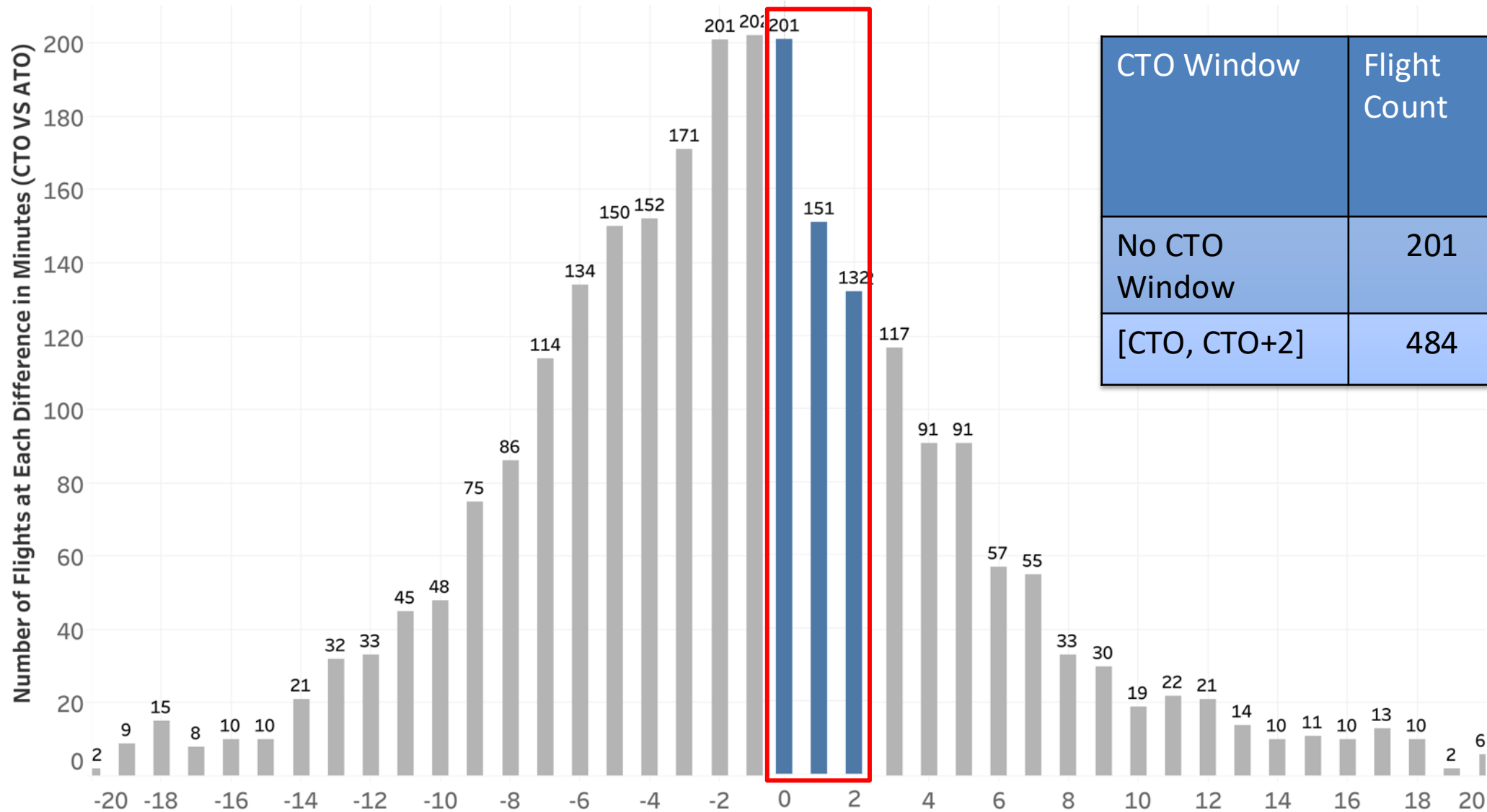
CTOT Compliance

Kabul FIR Entry CTO Compliance



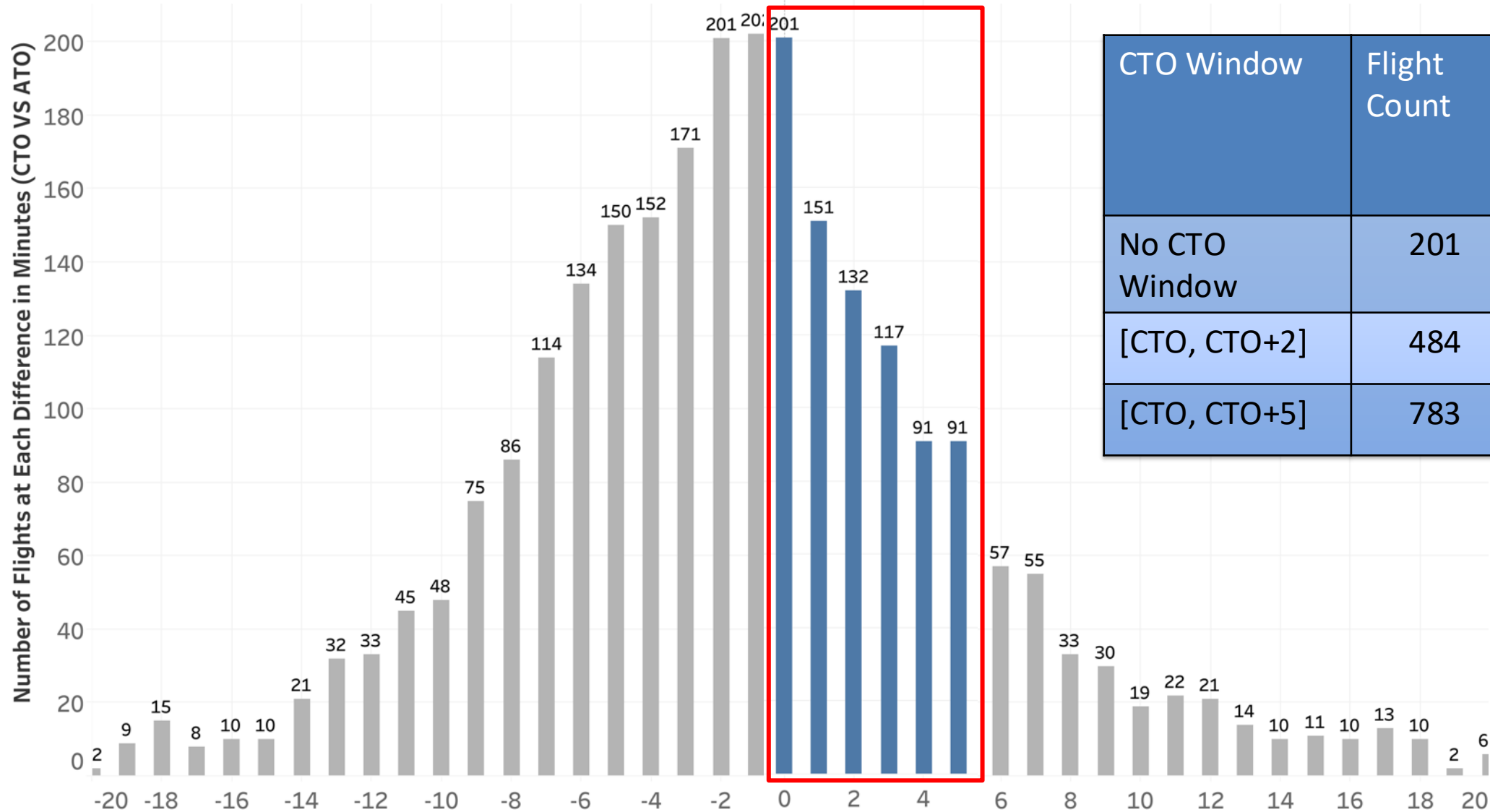
CTO Window	Flight Count	Percentage of Total Flights (N=2,614)
No CTO Window	201	7.69 %

Kabul FIR Entry CTO Compliance



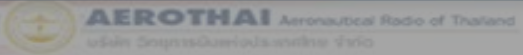
CTO Window	Flight Count	Percentage of Total Flights (N=2,614)
No CTO Window	201	7.69 %
[CTO, CTO+2]	484	18.52 %

Kabul FIR Entry CTO Compliance

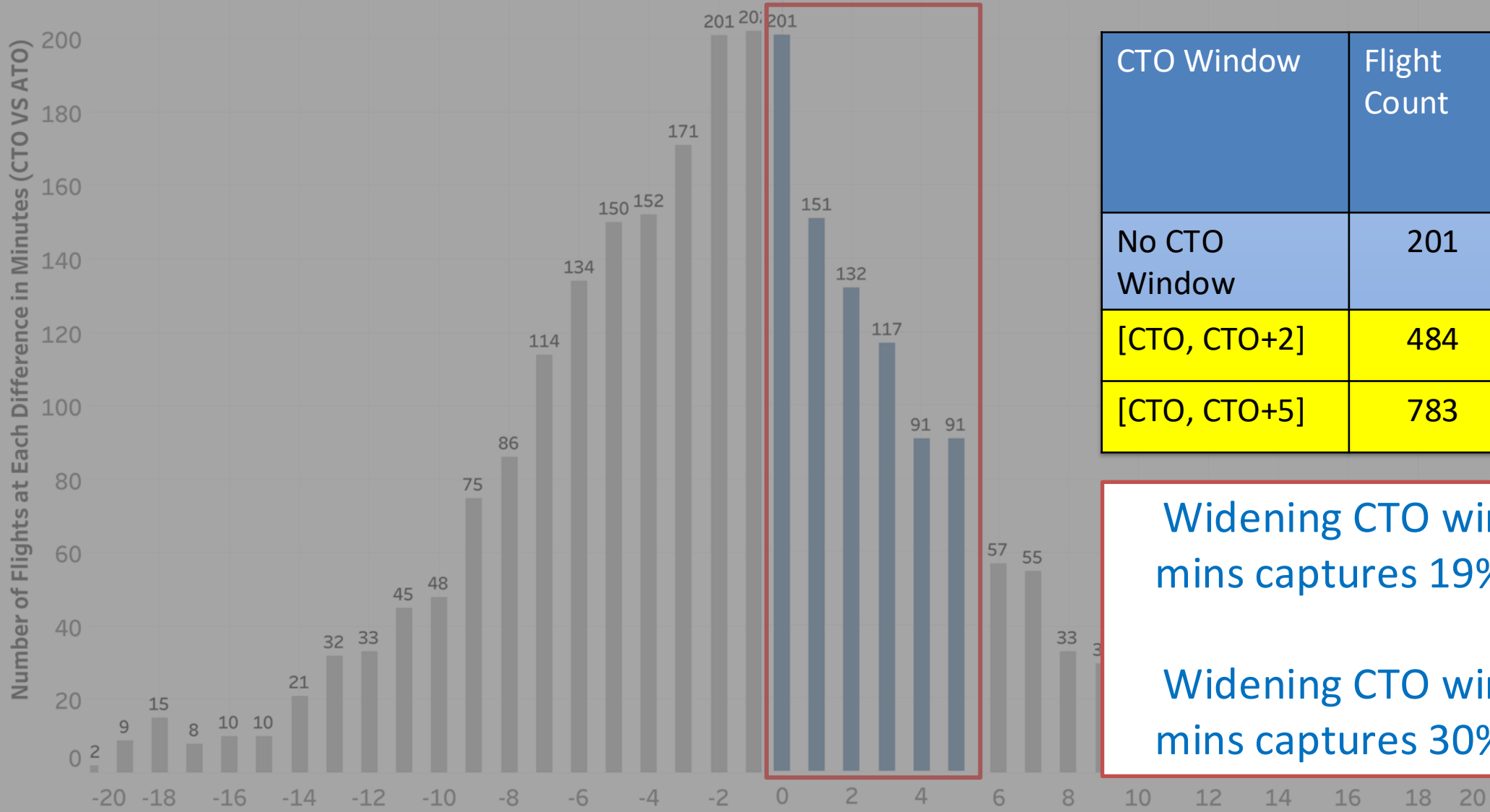


CTO Window	Flight Count	Percentage of Total Flights (N=2,614)
No CTO Window	201	7.69 %
[CTO, CTO+2]	484	18.52 %
[CTO, CTO+5]	783	29.95 %

CTO Window Impact Study



Kabul FIR Entry CTO Compliance



CTO Window	Flight Count	Percentage of Total Flights (N=2,614)
No CTO Window	201	7.69 %
[CTO, CTO+2]	484	18.52 %
[CTO, CTO+5]	783	29.95 %

Widening CTO window to 2 mins captures 19% of flights

Widening CTO window to 5 mins captures 30% of flights

What Have We Learned?

- Reactivation of BOBCAT ops on 4 Sep 2025 was successful, thanks to cooperation from States, ANSPs, and Airspace Users
- Effective support for nighttime westbound traffic, allowing high achievement of optimal flight levels

- ✓ **Thailand will continue to provide BOBCAT service,**
- ✓ **Post-operations analysis with support of TSD from relevant States will continue to be reported at relevant forums**





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- **Impact of Middle East Political Tension (March 2026)**





Recent Middle East Political Developments

Nov – Dec 2025

Rising tension in the Middle East

Mid-Jan 2026

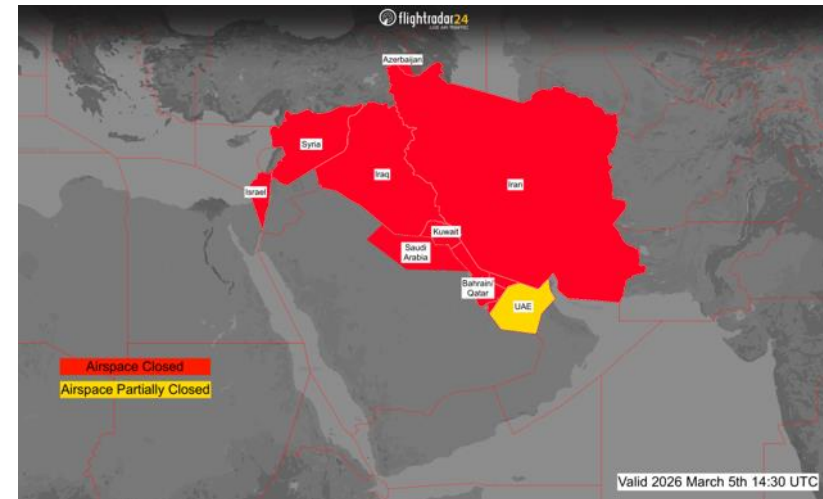
Brief closure of Tehran FIR

Late Feb – Mar 2026

Full airspace closure of up to 9 FIRs

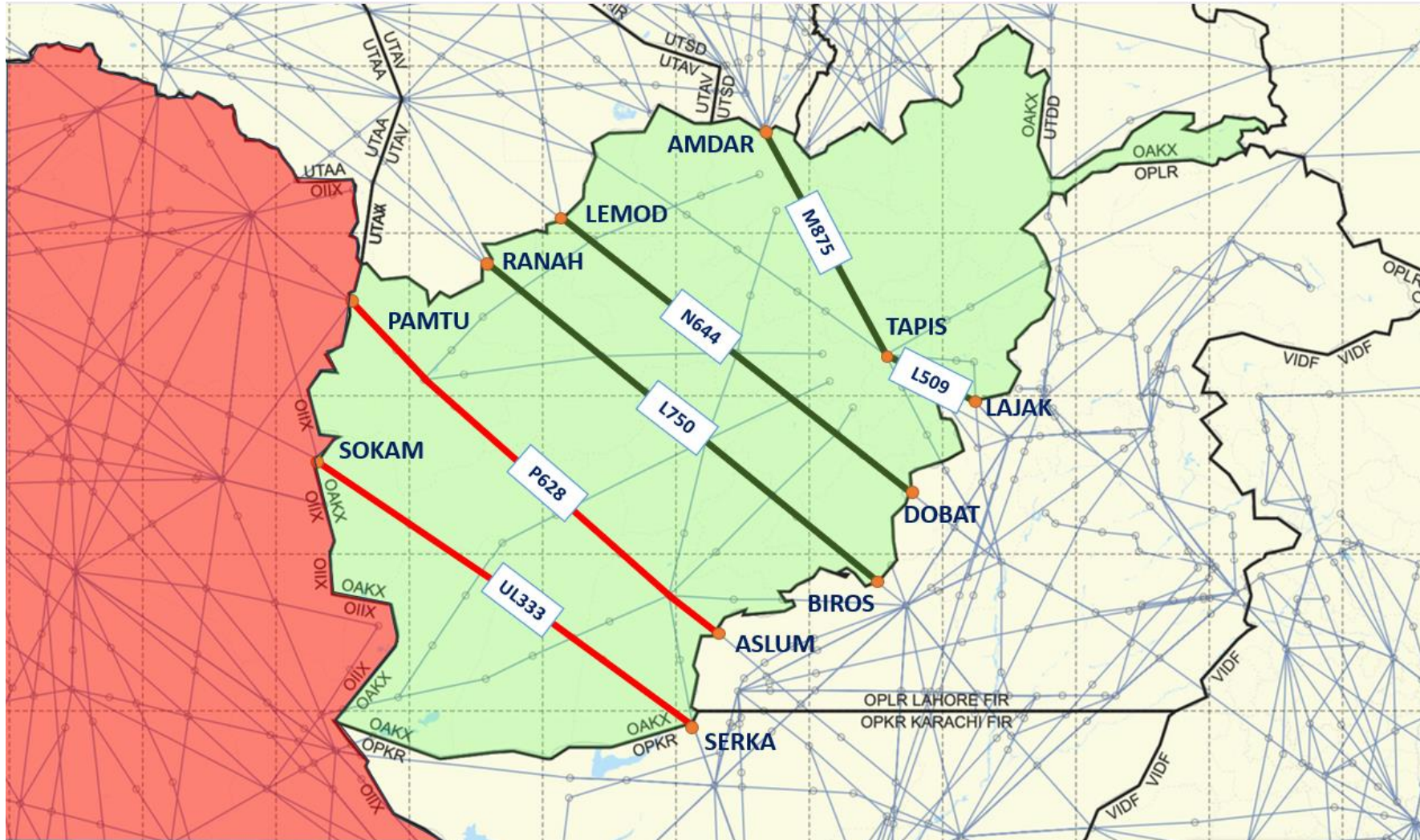


Jan'26 Tehran FIR Closure



Mar'26 Middle East FIR Airspace Closures

Impact on ATS Routes through Kabul FIR



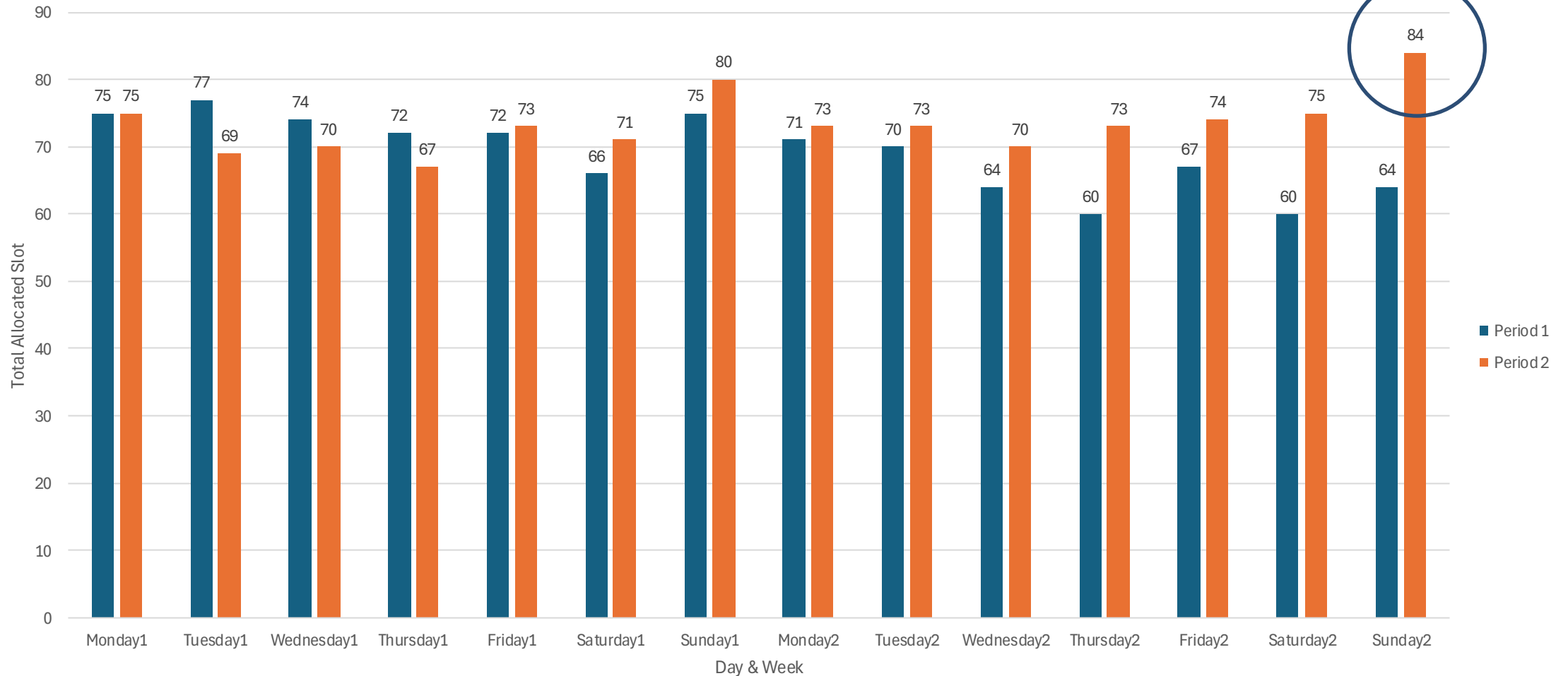
-  Tehran FIR
(Closed due to military activities)
-  Routes connected to Tehran FIR
-  Remaining routes



Impact Analysis: Early Feb vs Early Mar

Total Allocated Slot by Day
 From 2 - 15 FEB 2026 (Period 1)
 & 2 - 15 MAR 2026 (Period 2)

All-Time High



■ Period 1: Between 2 – 15 Feb 2026

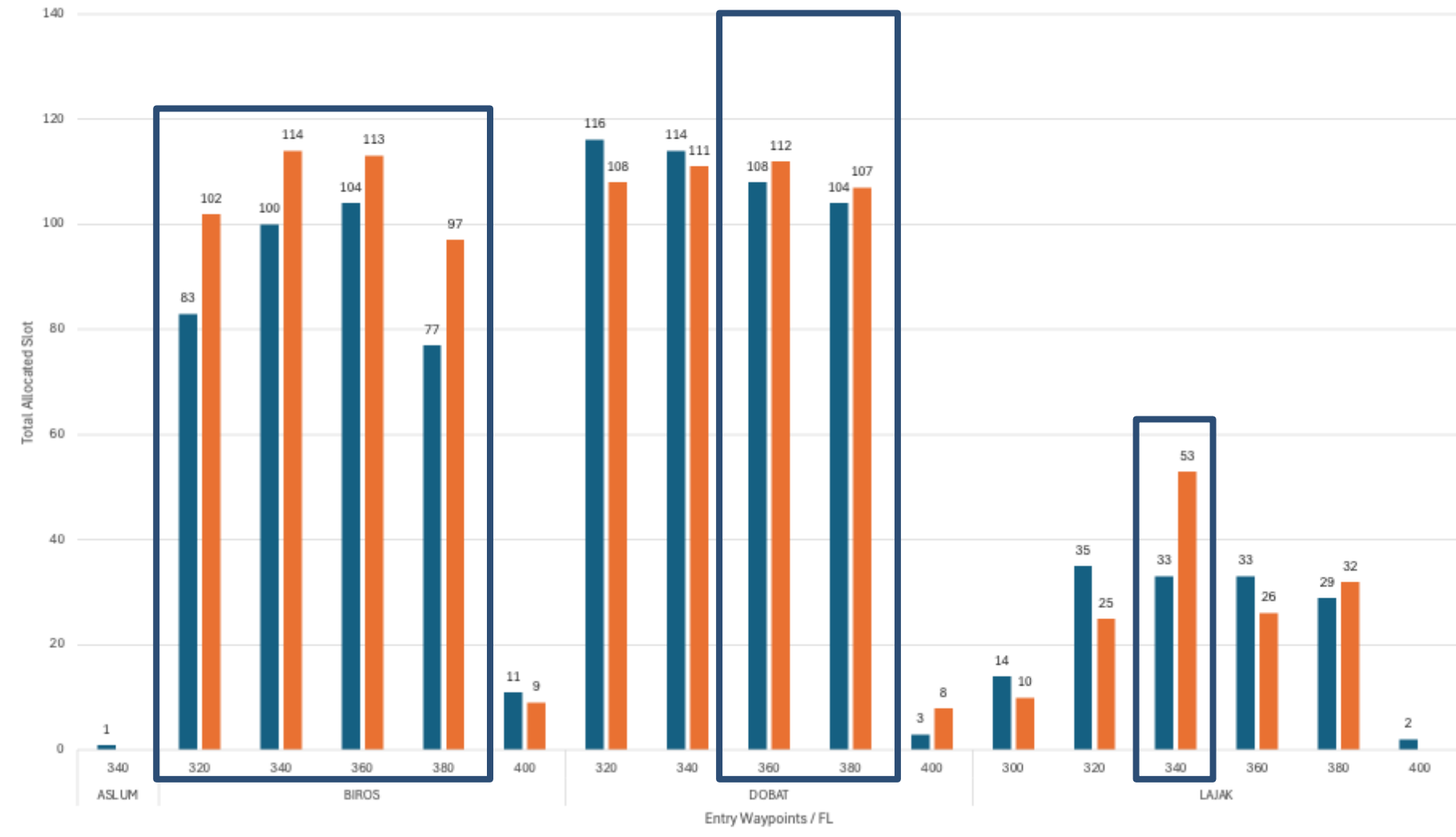
■ Period 2: Between 2 – 15 Mar 2026



Impact Analysis: Early Feb vs Early Mar



BOBCAT Slot Allocation by Entry Waypoints and FL
 From 2 - 15 FEB 2026 (Period 1)
 & 2 - 15 MAR 2026 (Period 2)



**FL 320, 340,
360, 380
BIROS**

**FL 360, 380
DOBAT**

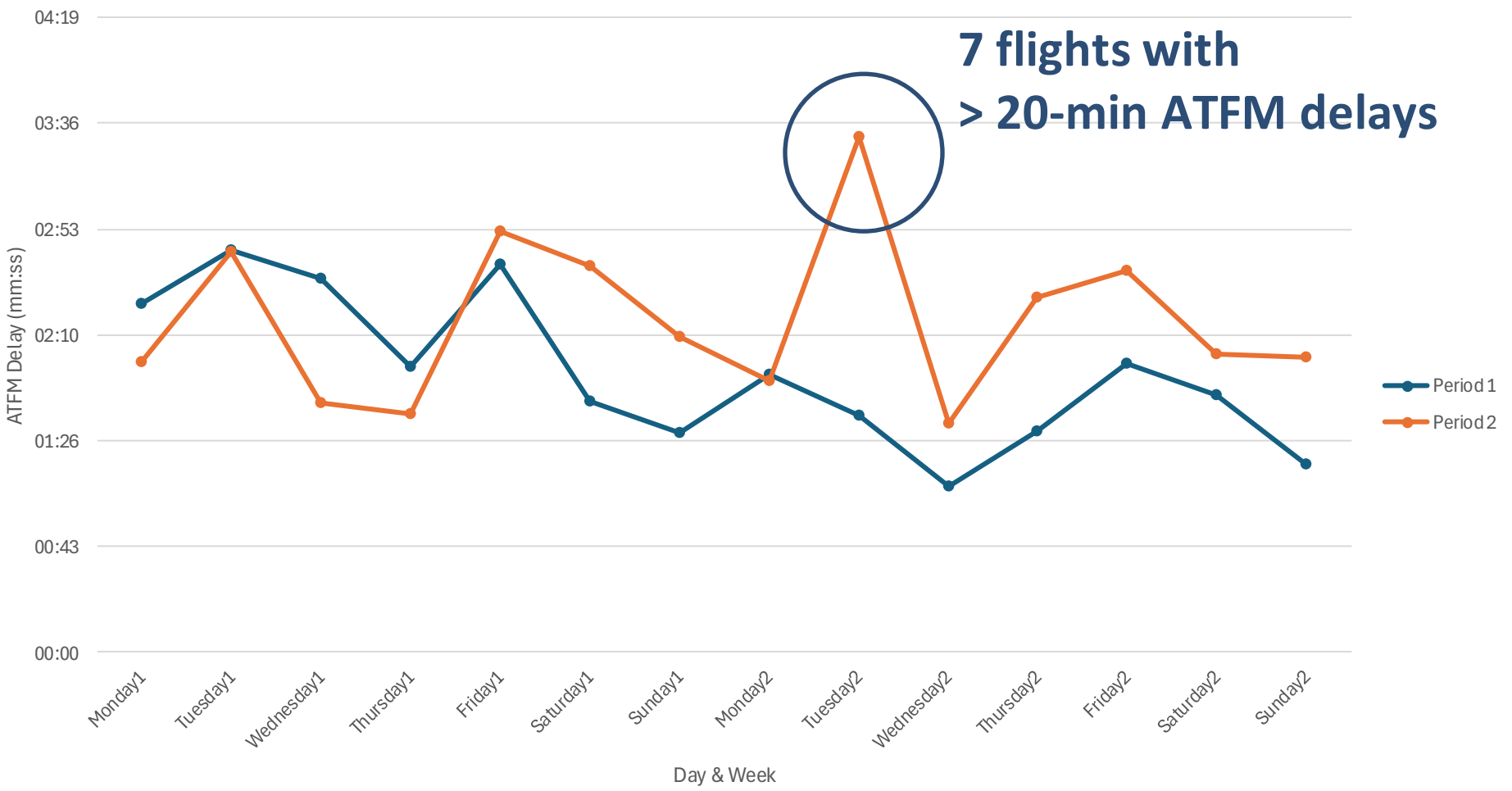
**FL 340
LAJAK**

Period 1: Between 2 – 15 Feb 2026
 Period 2: Between 2 – 15 Mar 2026

ATFM Delay Analysis



Average ATFM Delay by Day
From 2 - 15 FEB 2026 (Period 1)
& 2 - 15 MAR 2026 (Period 2)



■ Period 1: Between 2 – 15 Feb 2026

■ Period 2: Between 2 – 15 Mar 2026

So...what do we know thus far?

- Increasing level of traffic demand, especially around “popular” FLs on L750, N644, L509
- General increase in ATFM delay, with some flights experiencing 20 – 45 minutes

Recommendation for Airspace Users:

- ✓ Include alternate entry waypoints & FLs in Slot Requests
- ✓ Increase Maximum Acceptable Delay (MAD) parameter





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บริษัท วิทยุการบินแห่งประเทศไทย จำกัด

Thank You!

ATFM/SG/16
6 - 10 April 2026

