

Line Maintenance Operational Dashboard

Live app: <https://jfk-ops-live-dashboard-vercel-mirro.vercel.app/>

A low-code, station-tailorable operations platform designed to improve day-of-ops visibility, precision resource management, and tactical execution quality in line maintenance environments.

Primary objective: reduce planning friction and make real-time staffing/ops decisions faster.

Delivery model: low-code web app, easy to tailor, near-zero software cost to operate.

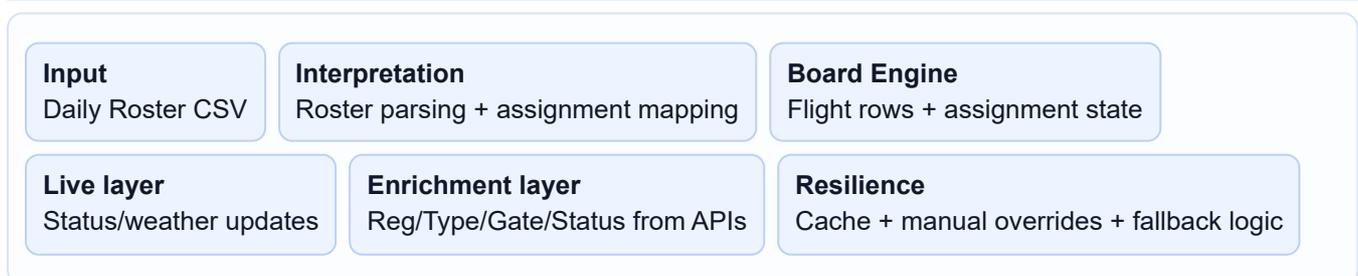
1) Executive Context

Line maintenance teams operate in high-tempo windows where schedule changes, gate/turn pressures, and variable staffing create coordination risk. The dashboard consolidates planning and live context into one operational surface so engineers and managers can execute with less friction.

2) Core Capabilities

Capability	What it does	Operational value
Daily Roster CSV Upload	Ingests daily station activity into a ready-to-use board.	Fast startup; no manual rebuild of the shift board.
Interpretative parsing logic	Transposes roster inputs into structured flight/assignment records.	Works with variable roster formats across stations.
Assignment layer	Editable certifier/mechanic fields + manual temporary staff support.	Rapid rebalance when shift reality changes.
Gantt + Heat-map	24h timeline with overlap/peak intensity visibility.	Clear staffing insight for managers during peaks.
Weather tile	Now + AM/PM/EVE weather context with precipitation.	Improves tactical planning and risk anticipation.
Enrichment layers	Flight/reg/type/status enrichment with caching and fallback behavior.	Better completeness and continuity during feed issues.

3) Architecture (practical, resilient)



4) Why this resource management model works

- **Precision through visibility:** every active flight line has assignment context and timing context.
- **Fast correction mechanics:** manual assign/override supports temporary shift changes instantly.

- **Peak-time clarity:** Gantt and heat-map expose overlap pressure before it becomes operational debt.
- **Station portability:** parser + low-code approach makes it feasible to tailor by station with low effort.

5) Market Evidence Snapshot (why this is strategically aligned)

Selected industry references consistently point to the same direction: digitized operational control, better data visibility, and faster decision loops are central to reducing disruption cost and improving reliability.

- **IATA operational resilience focus:** on-time performance, disruption handling, and operational efficiency remain major airline value drivers.
- **SITA Air Transport IT Insights:** airlines and airports continue increasing digital/real-time operational investment to improve punctuality and service outcomes.
- **MRO digitalization studies:** practical digital workflows and integrated data views improve planning quality and reduce avoidable reactive work.

Reference links:

<https://www.iata.org/>

<https://www.sita.aero/resources/type/surveys-reports/air-transport-it-insights/>

<https://www.mckinsey.com/industries/aerospace-and-defense/our-insights>

6) API and Data Approach

- **Open components:** app logic, UI, workflow model, and station-tailoring approach are open and extensible.
- **Sensitive data boundary:** staff-level details and credentials remain private/configured outside open artifacts.
- **Enrichment strategy:** multi-layer feed handling with controlled rate use, caching, and manual fallback.
- **Type normalization:** DOC8643 mapping standardizes A/C type display.

7) Screenshots & Walkthrough

Live tracker temporarily unavailable; using fallback snapshot + schedule.

Airline	Flight	A/C Reg	A/C Type	Terminal	Gate	ETA	STD	Status	Certifier	Mechanic	Notes
JL	JL006/005	-	A350	8	-	1100	1350	Scheduled	Andrew Ibsen	Assign...	-
NH	NH110/109	-	B777	7	-	1130	1405	Scheduled	Andrew Ibsen	Assign...	-
BA	BA117/176	-	B787	8	18C	1217	2110	Scheduled	Andrew Ibsen	Nikolas Dundon	-
BA	BA175/172	-	B787	8	18D	1334	2140	Scheduled	Andrew Ibsen	Nikolas Dundon	-
EI	EI105/104	-	A330	7	-	1455	1800	Scheduled	Rahman Anikan	Fahim Abrar	-
BA	BA173/112	-	B787	8	20	1521	1915	Scheduled	Devran Turegun	Nikolas Dundon	-
QF	QF3/4	-	B787	8	-	1525	1815	Scheduled	Ray Abes	Naresh Dindiall	-
EI	EI111/110	-	A321	7	-	1625	1830	Scheduled	Mark Ferrel	Fahim Abrar	-
IB	IB211/212	EC-OIL	A32X	8	-	1625	1755	Scheduled	Saleh Al Assaf	Assign...	-
ZO	Z0701/702	G-CKWP	B787	7	-	1655	1905	Scheduled	Assign...	Assign...	-
BA	BA177/174	-	B787	8	16	1658	1950	Scheduled	Rahman Anikan	Frank Richmond	-
NZ	NZ2/1	-	B787	1	-	1700	1920	Scheduled	Assign...	Assign...	-

Figure 1 — Daily roster execution board with assignment columns, status, and quick-edit controls.

Documentation & Examples

Everything you need to Integrate with ADS-B Exchange

Quick Start Examples

JavaScriptPythoncURL

ADS-B Exchange Javascript Example JAVASCRIPT

```
// ADS-B Exchange API Example
const response = await fetch('https://www.adsbexchange.com/data/', {
  method: 'GET',
  headers: {
    'Content-Type': 'application/json'
  }
});

const data = await response.json();
console.log(data);
```

Copy

Unlock the power of the ADS-B Exchange API, which provides seamless access to comprehensive real-time and historical data of airborne aircraft. With a robust dataset that covers a wide array of vital flight information, this API is designed for developers, aviation enthusiasts, and organizations requiring detailed aerial insights. Whether you are building flight tracking applications, conducting aviation research, or simply eager to stay informed about ongoing air traffic, the ADS-B Exchange API delivers a reliable solution to tap into an extensive pool of aircraft data, ensuring you stay updated with the latest airborne activity at your fingertips.

Utilizing the ADS-B Exchange API comes with numerous advantages. The key benefits include:

- Real-time tracking of active flights, enhancing situational awareness.
- Access to historical flight data for comprehensive analysis.
- Coverage of a vast number of aircraft worldwide, ensuring extensive data availability.
- User-friendly documentation and support, allowing for quick integration.
- Free access to open-source data, promoting transparency and collaboration in aviation information sharing.

Figure 2 — Live operational context including weather and feed-health indicators.

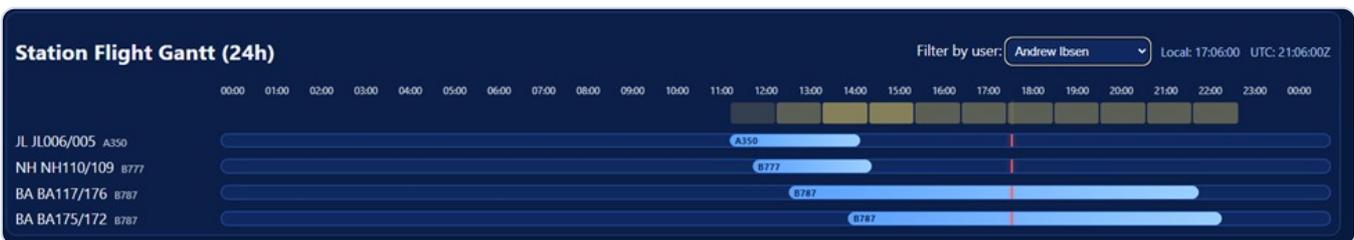


Figure 3 — Full-station Gantt and heat-map for peak-window visualization and staffing insight.

Enrichment (≤3/day): OK (0) **Cache: 474 flight mappings**

Figure 4 — User-filtered Gantt view for individual workload and task balancing.

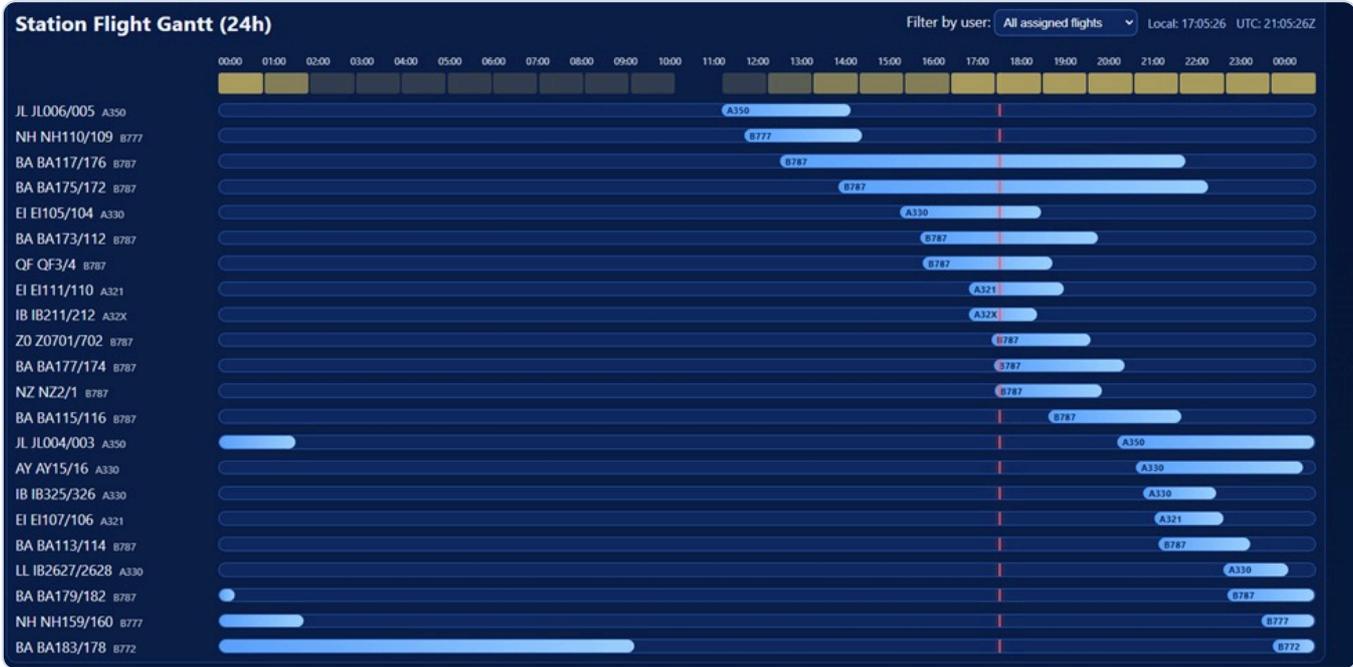


Figure 5 — Enrichment and cache telemetry to support trust, continuity, and troubleshooting.

8) Implementation & Adoption Notes

- Can be deployed quickly as a web app and tailored with station-specific defaults.
- Supports iterative rollout: start with one station, expand with localized parser tuning.
- Designed to be practical for both frontline engineers and operational leadership.

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