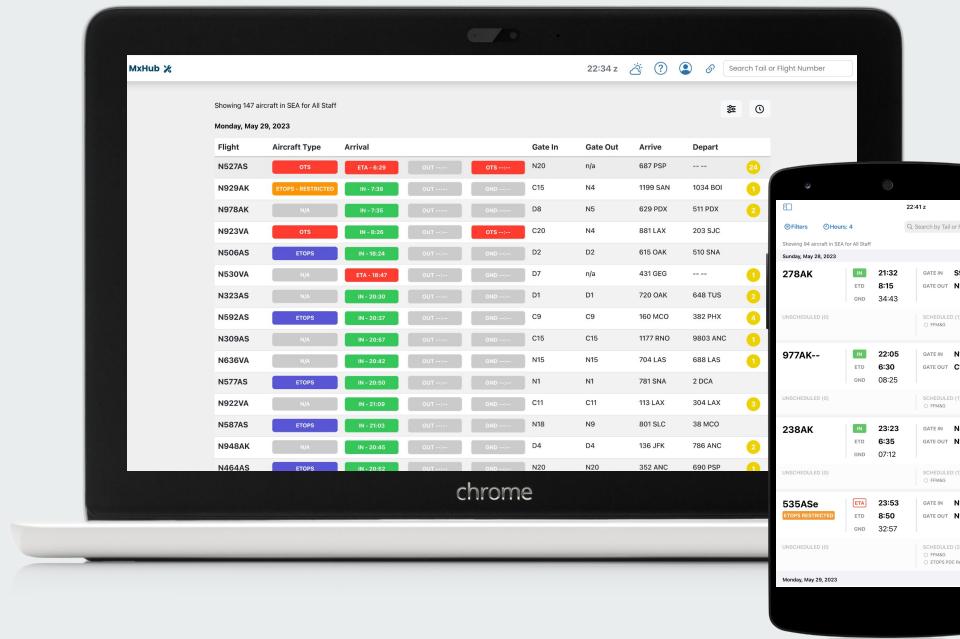


MxHub Web

Quinton Price



Overview

The background image shows the tail of an Alaska Airlines aircraft. The tail features a large, stylized portrait of a man with a beard and mustache, likely a pilot or a significant figure in the airline's history. The aircraft is white with blue and yellow accents. The registration number N558AS is visible on the fuselage. The scene is set at an airport tarmac with various ground service equipment and buildings in the background.

MxHub Web is a React implementation of MxHub, an iOS maintenance app developed by Alaska Airlines.

Using MxHub Web, aircraft technicians can view a multitude of information about incoming aircraft and their required maintenance.



Customer Information



Alaska Airlines

ITS MX/ME Department

Mentor: Chris Barber

Tools Used

- React.js
- JavaScript
- Postman
- VS Code
- Swagger UI
- GitHub
- Alaska Airlines SSO
- React-Icons
- React-Bootstrap
- React Router
- XCode
- Dependabot
- SonarQube



Use Cases / User Stories

- “As a line maintenance supervisor, I would like to see incoming and departing aircraft so that I can be adequately prepared for maintenance requirements”
- “As an aircraft line mechanic, I would like to view maintenance items so that I can diagnose issues and work on them to ensure aircraft safety”
- “As an MxHub user, I would like to be able to log in with my company account so that I can save preferences and view the proper information”
- “As an aircraft mechanic, I would like to view weather information so that I can conduct proper safety inspections”

REQUIREMENT GOALS



Weather Info

Receive third-party weather information and alert technicians accordingly



Search

Technicians must be able to search for specific aircraft using parameters like tail number, flight time, etc.



Dashboard

Must show list of aircraft with critical info (ETA/D, maint. issues, flight num., etc.)



Maintenance Modal

Displays critical maintenance/oil information when clicking on flight



AS/QX Support

Both Alaska and Horizon Airlines flights must be supported



Filters

Technicians must be able to filter aircraft by location, time, airline, etc.



Showing 147 aircraft in SEA for All Staff



Monday, May 29, 2023

Flight	Aircraft Type	Arrival			Gate In	Gate Out	Arrive	Depart	
N527AS	OTS	ETA - 6:29	OUT ----	OTS ----	N20	n/a	687 PSP	---	24
N929AK	ETOPS - RESTRICTED	IN - 7:39	OUT ----	GND ----	C15	N4	1199 SAN	1034 BOI	1
N978AK	N/A	IN - 7:35	OUT ----	GND ----	D8	N5	629 PDX	511 PDX	2
N923VA	OTS	IN - 8:26	OUT ----	OTS ----	C20	N4	881 LAX	203 SJC	
N506AS	ETOPS	IN - 18:24	OUT ----	GND ----	D2	D2	615 OAK	510 SNA	
N530VA	N/A	ETA - 18:47	OUT ----	GND ----	D7	n/a	431 GEG	-- --	1
N323AS	N/A	IN - 20:30	OUT ----	GND ----	D1	D1	720 OAK	648 TUS	2
N592AS	ETOPS	IN - 20:37	OUT ----	GND ----	C9	C9	160 MCO	382 PHX	4
N309AS	N/A	IN - 20:57	OUT ----	GND ----	C15	C15	1177 RNO	9803 ANC	1
N636VA	N/A	IN - 20:42	OUT ----	GND ----	N15	N15	704 LAS	688 LAS	1
N577AS	ETOPS	IN - 20:50	OUT ----	GND ----	N1	N1	781 SNA	2 DCA	
N922VA	N/A	IN - 21:09	OUT ----	GND ----	C11	C11	113 LAX	304 LAX	3
N587AS	ETOPS	IN - 21:03	OUT ----	GND ----	N18	N9	801 SLC	38 MCO	
N948AK	N/A	IN - 20:45	OUT ----	GND ----	D4	D4	136 JFK	786 ANC	2
N464AS	ETOPS	IN - 20:45	OUT ----	GND ----	N20	N20	252 ANC	600 PSP	1



SEA **Weather** Jan. 1, 2021

Temperature	4.4°C (40°)
Dewpoint	1.7°C (35°F) [RH = 83%]
Pressure (altimeter)	29.98 inches Hg (1015.3 mb)
Winds	From the SSE (150 degrees) at 7 MPH (6 knots; 3.1 m/s)
Visibility	10 or more miles (16+ km)
Ceiling	3100 feet AGL
Clouds	Few clouds at 2200 feet AGL. Overcast cloud deck at 3100 feet AGL
Weather	No significant weather observed at this time

METAR - RAW
KSEA 042230Z 15006KT 10SM FEW022 OVC031 04/02 A2998 RMK AO2 RAE26 P0000 T00440017

Close

John Deer
john.deer@alaskaair.com

Employer	Alaska Airlines
Job Title	Maintenance Technician
Home Station	SEA
Department	M&E Tech
Dept ID #	987654321
PS #	123456789
App Version	1234567
Dark Mode	<input type="checkbox"/>

Log Out Close



Showing 147 aircraft in SEA for All Staff

Monday, May 29, 2023



Flight	Aircraft Type	Arrival			Gate In	Gate Out	Arrive	Depart	
N929AK	ETOPS - RESTRICTED	IN - 7:39	OUT ----	GND ----	C15	N4	1199 SAN	1034 BOI	1
N923VA	OTS	IN - 8:26	OUT ----	OTS ----	C20	N4	881 LAX	203 SJC	
N922VA	N/A	IN - 21:09	OUT ----	GND ----	C11	C11	113 LAX	304 LAX	3
N928AK	N/A	ETA - 23:43	OUT ----	GND ----	N4	N4	753 FAT	1426 LAS	
N924VA	N/A	ETA - 1:08	OUT ----	GND ----	D5	D5	585 LAX	398 LAX	
N929AK	ETOPS - RESTRICTED	ETA - 2:50	OUT ----	GND ----	N2	N2	1033 BOI	718 ORD	1
N920AK	ETOPS - RESTRICTED	ETA - 4:04	OUT ----	GND ----	D7	C11	1304 SFO	558 SAN	1
N921AK	ETOPS - RESTRICTED	ETA - 6:03	OUT ----	GND ----	N1	N1	1468 ORD	784 KOA	
N928AK	N/A	ETA - 7:23	OUT ----	GND ----	CG54	CG54	955 LAS	412 PIT	

Flight	Aircraft Type	Arrival			Gate In	Gate Out	Arrive	Depart	
N527AS	OTS	ETA - 6:29	OUT ---	OTS ---	N20	n/a	687 PSP	---	24
N929AK	ETOPS - RESTRICTED	IN - 7:39	OUT ---	GND ---	C15	N4	1199 SAN	1034 BOI	1
N978AK	N/A	IN - 7:35	OUT ---	GND ---	D8	N5	629 PDX	511 PDX	2
N923VA	OTS	IN - 8:26	OUT ---	OTS ---	C20	N4	881 LAX	203 SJC	
N506AS	ETOPS	IN - 18:24	OUT ---	GND ---	D2	D2	615 OAK	510 SNA	
N530VA	N/A	ETA - 18:47	OUT ---	GND ---	D7	n/a	431 GEG	---	1

Maintenance for N323AS ×

<p>Unscheduled Maintenance (0)</p> <p><i>No unscheduled maintenance found for this aircraft.</i></p>	<p>Scheduled Maintenance (0)</p> <p><i>No scheduled maintenance found for this aircraft.</i></p>	<p>Deferred Maintenance (2)</p> <ul style="list-style-type: none"> <input type="checkbox"/> CAT III AUTOLAND NOT AUTHORIZED <input type="checkbox"/> CAT III HGS OPERATIONS NOT AUTHORIZED
---	---	---

Showing 147 aircraft in SEA for All Staff



Monday, May 29, 2023

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N527AS	OTS	ETA - 6:29	OUT ---	OTS ---	N20	n/a	687 PSP	---	24
N929AK	ETOPS - RESTRICTED	IN - 7:39	OUT ---	GND ---	C15	N4	1199 SAN	1034 BOI	1
N978AK	N/A	IN - 7:35	OUT ---	GND ---	D8	N5	629 PDX	511 PDX	2
N923VA	OTS	IN - 8:26	OUT ---	OTS ---	C20	N4	881 LAX	203 SJC	

Filter

Hours

Airline

Alaska (AS)
 Horizon (QX)

Station

Done

CHALLENGES



SSO

Must be able to fully integrate into Alaska Airlines' internal network



PingID Auth

Application must support authentication through verification vendor PingID



Connect to API

App must receive data from MxHub API and a third party push notification service, *Airship*



Schedule

Fall/Winter 2023

- Data mapper functions (~60% of work)
- Meet with design team
- UI design
- Dashboard widget
- Navbar widget
- Search bar widget
- Mock data
- User profile widget

Spring 2023

- Full SSO integration
- Full API integration
- Weather/filter widgets
- State management
- Maintenance counter widget
- Maintenance details page
- Search/sorting function
- AS/QX data filtering



Schedule

Spring 2023

- Aircraft indicator widgets
- ETD/GND/OTS widgets
- OTS event handling
- GND event handling



What's next?

- Full deployment to software delivery platform
- API & SSO integration
- Maintenance chat feature
- More advanced sorting & filtering

... and more!