

Shumka  Program

Design for Startups



Spring 2024

Simplifying Complex Aviation Operations

Airble × Cailine Keirstead (BDes, 2024)

Airble is a charter aviation marketplace that connects passengers with private and shared flight experiences while supporting operators through a digital scheduling platform. Cailine worked with Airble to integrate Transport Canada's updated crew fatigue management regulations into its platform, designing dashboard experiences that simplified scheduling workflows, improved information architecture, and helped operators manage complex operational requirements with confidence.

Design Activities: User research, information architecture, dashboard design, data visualization, prototyping

Airble Dashboard



Initial Challenge

Airble seeks to streamline integration of new Transport Canada fatigue management rules into their web systems. Their aim is to make their dashboard more intuitive to simplify crew scheduling complexities, ensuring a seamless experience for airlines/operators.

- Include CFM
- Streamline dashboard user flow
- Simplify crew scheduling



[Canada.ca](#) > [Transport Canada](#)

Overview of the new regulations on flight crew management

From: [Transport Canada](#)

Backgrounder

All flight crew experience the detrimental effects of fatigue, whether they are flying short-haul or long-haul. To ensure the safety of passengers and crew, the Government has introduced new regulations that limit the amount of time a crew member can be on the job.

The changes to flight crew fatigue management include two essential elements:

- New prescribed flight and duty limits that are grounded in modern science that a crew member can be on the job (see table below); and
- Fatigue Risk Management Systems that will allow operators the flexibility to manage their unique operations if they can demonstrate that alertness and safety will be maintained.



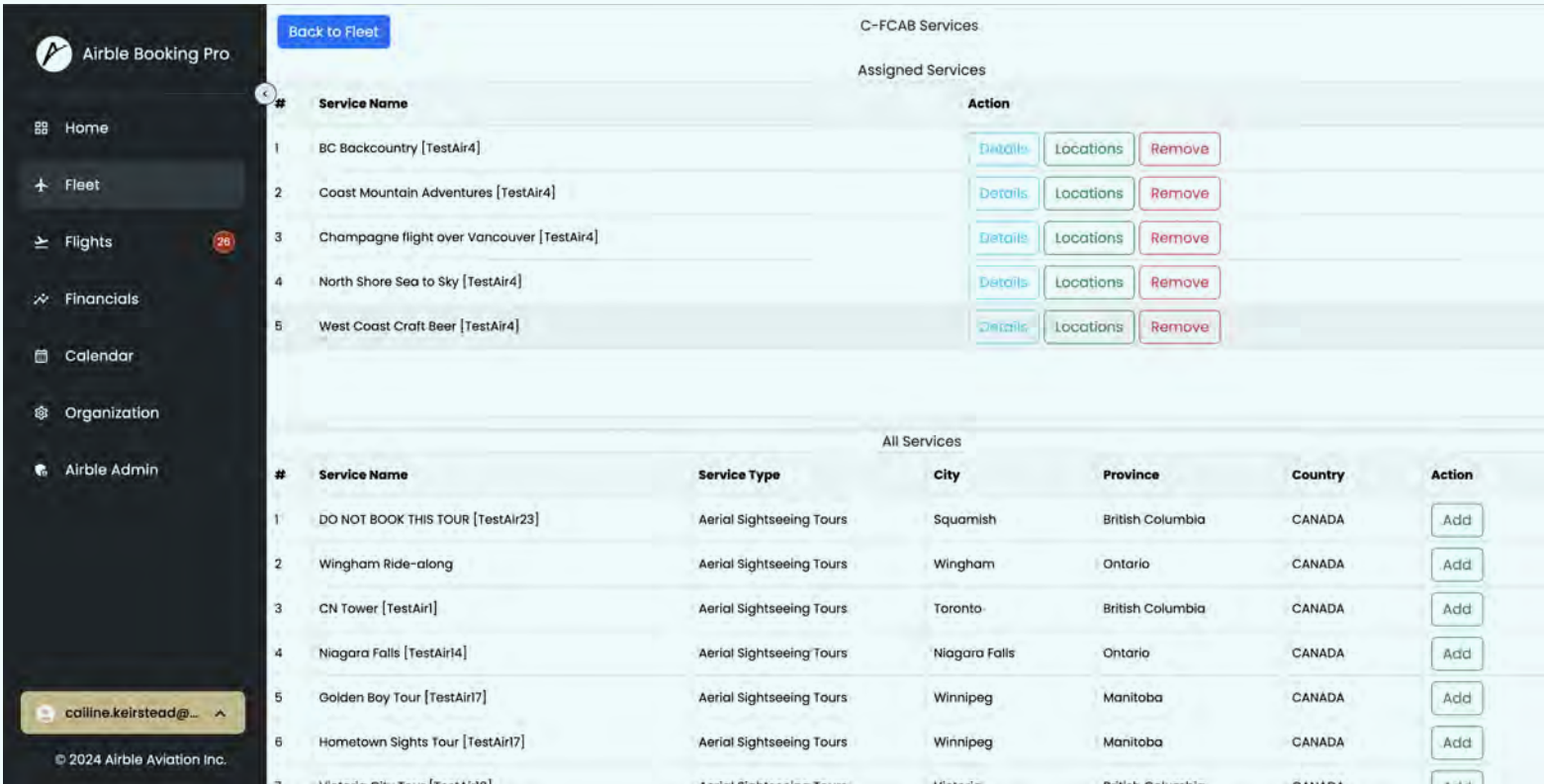
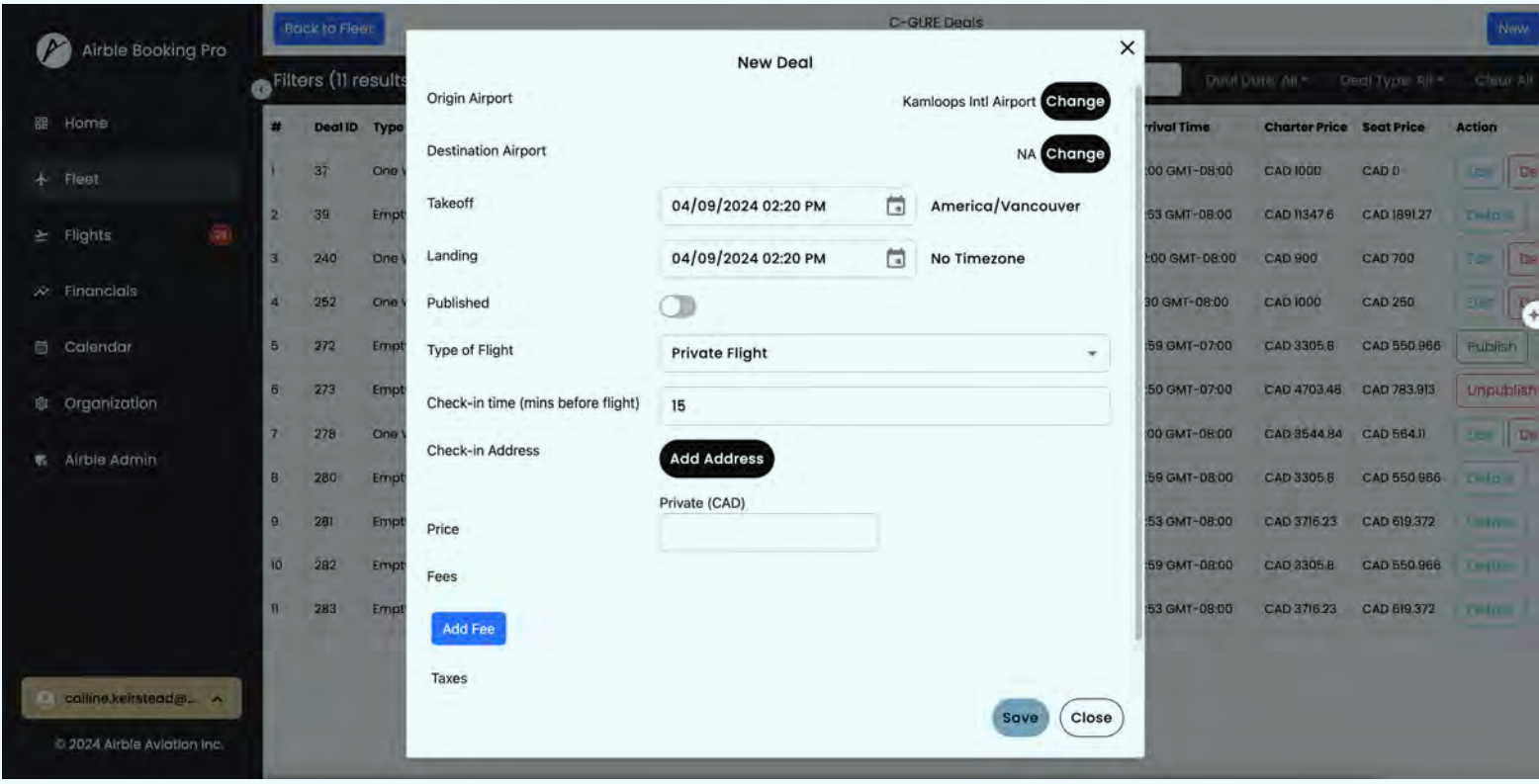
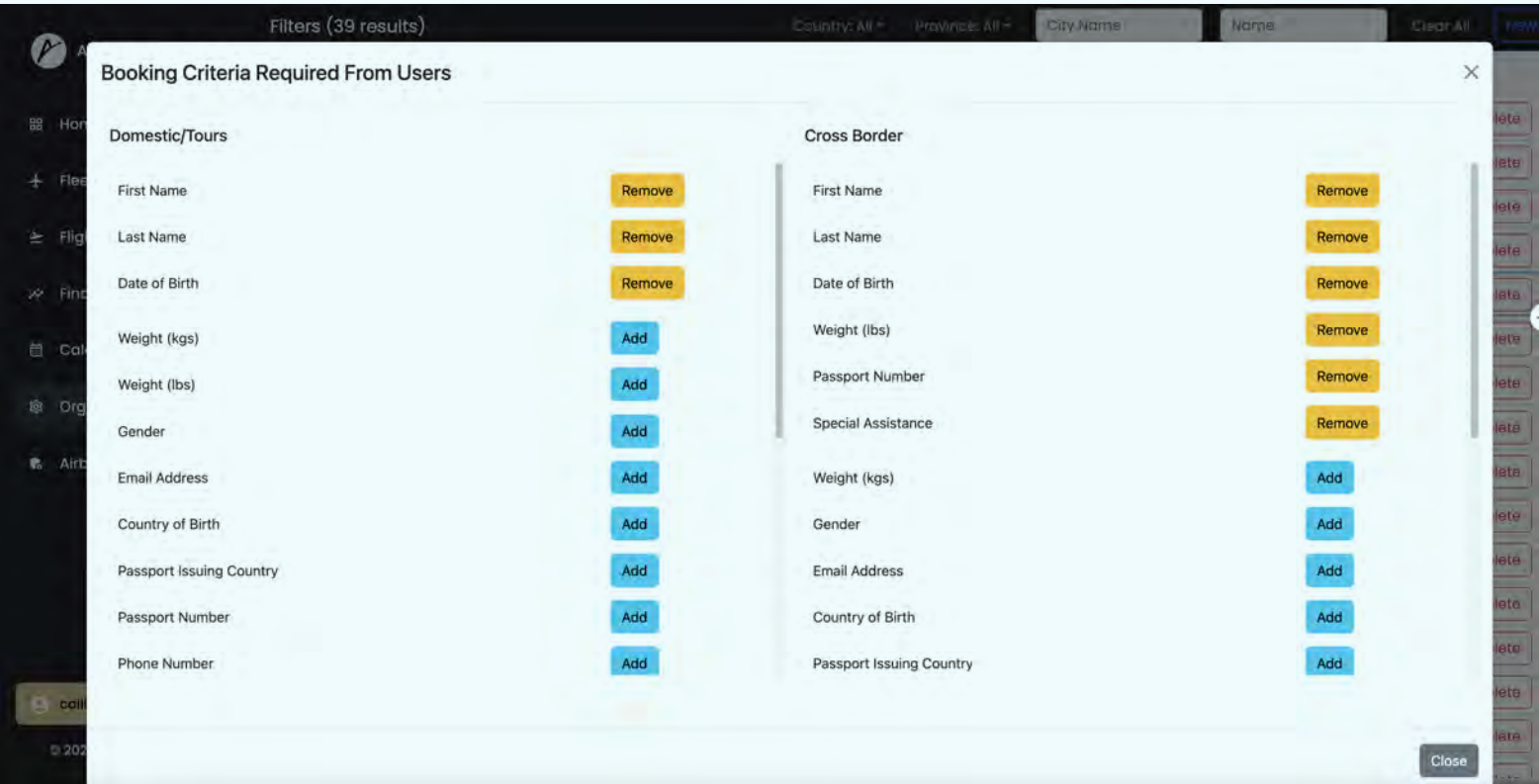
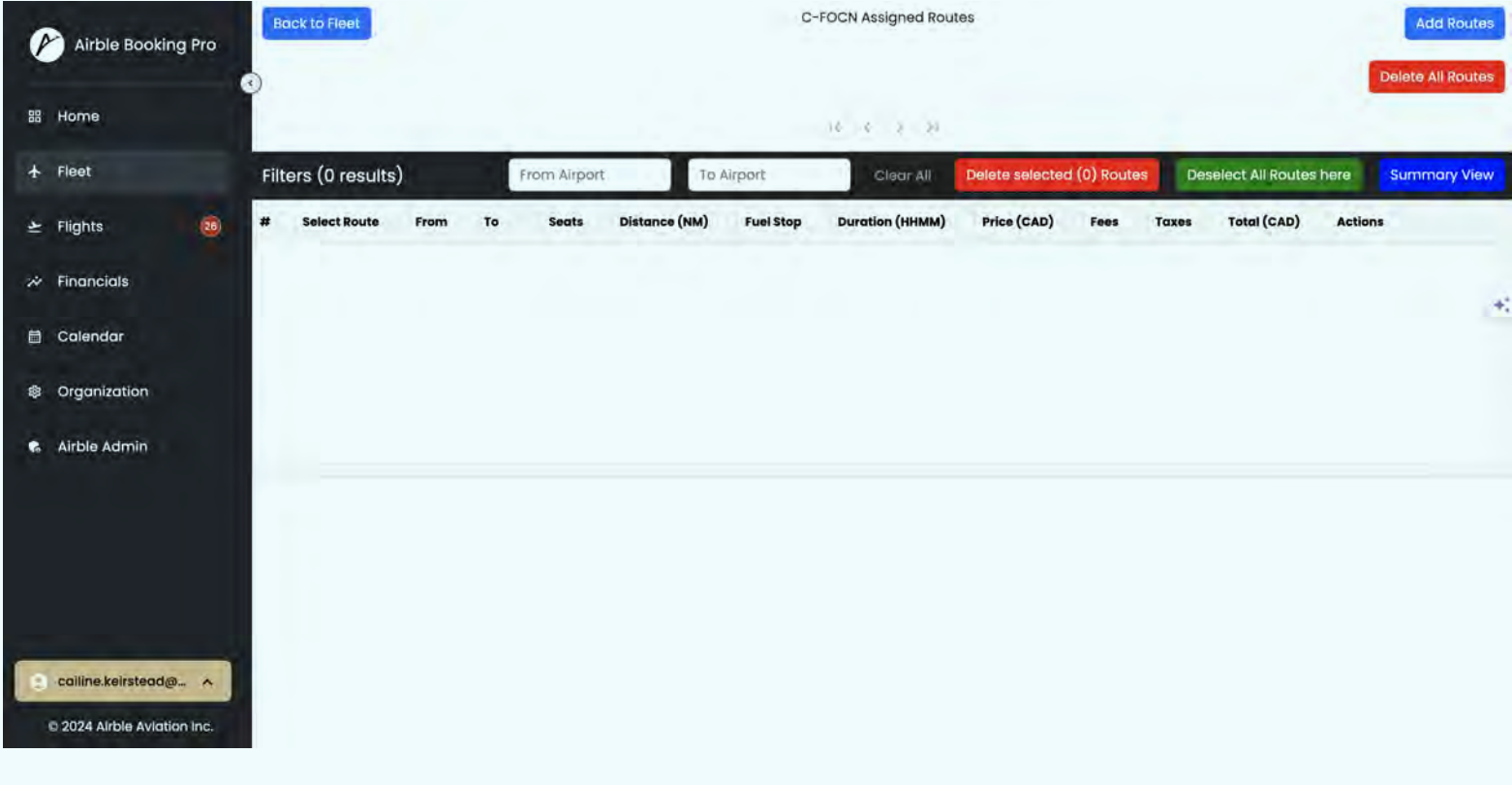
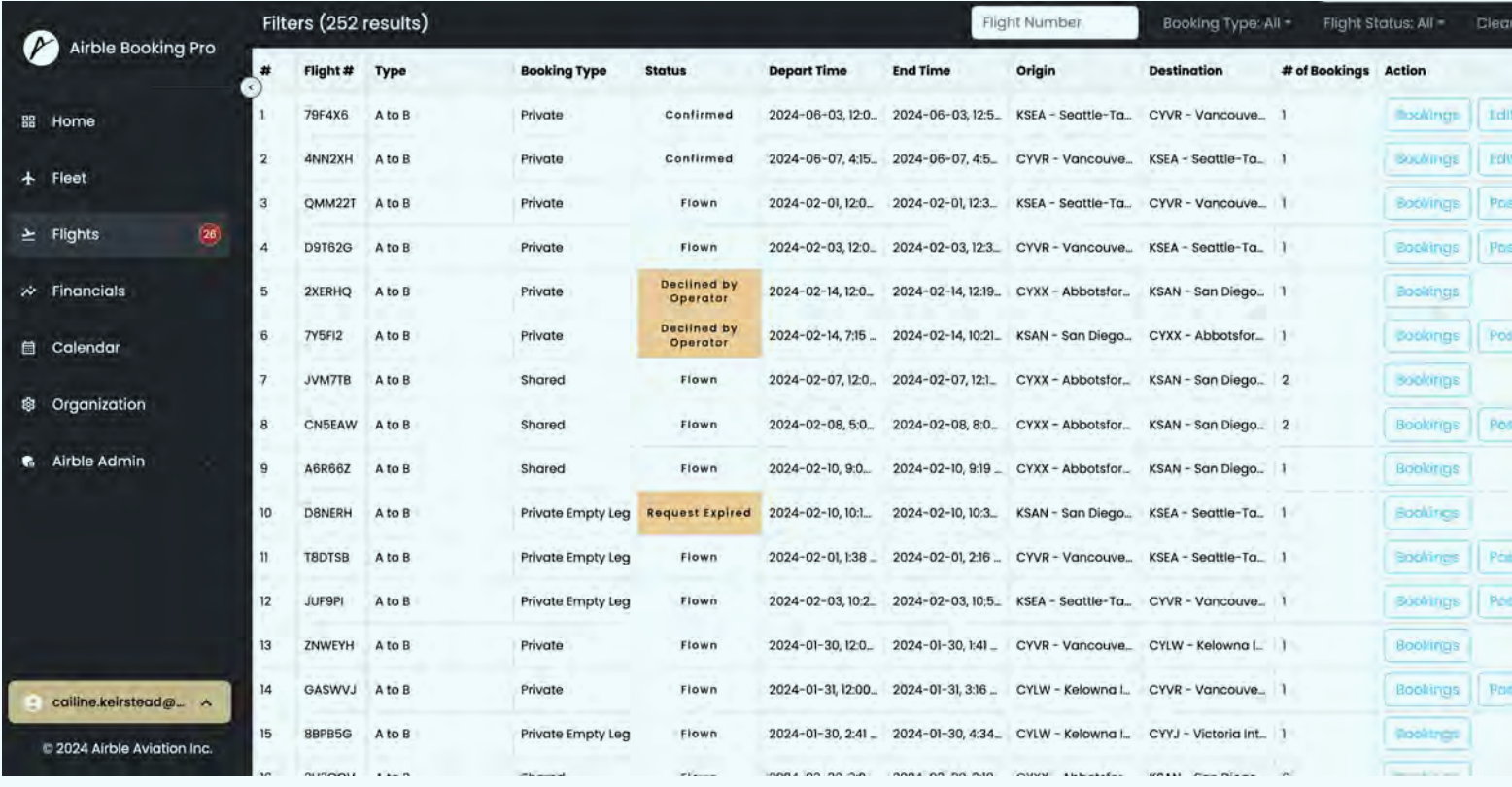
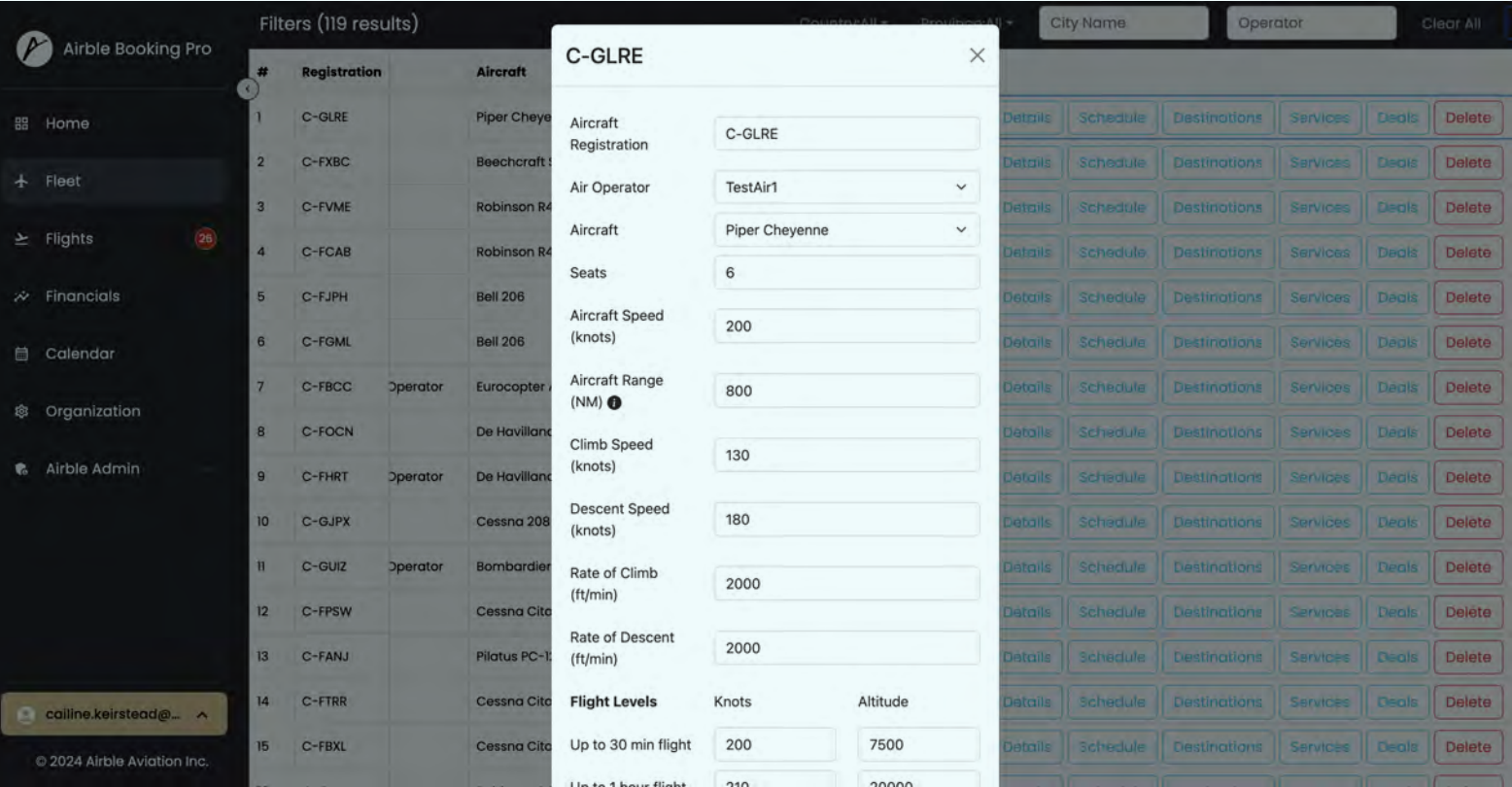
Shift

I was given priorities that differed from solely designing for the regulations.

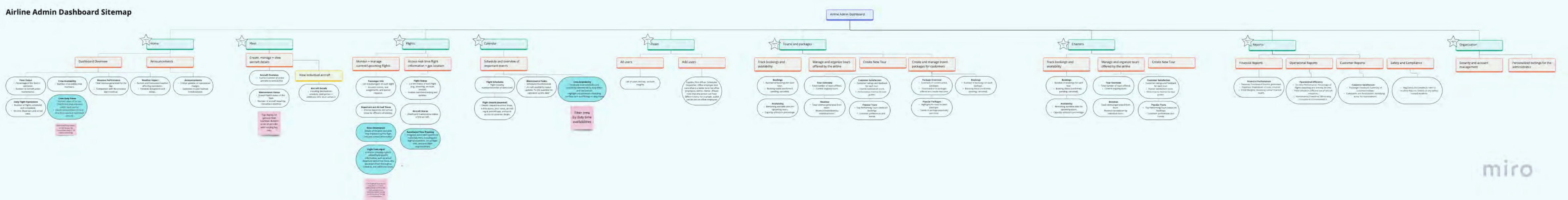
Instead, I began to re-design the most crucial pages/functions and things that haven't been implemented at all yet in the demo dashboard.

Discovery & Exploration

- a) Popups are used for many actions disorienting the user
- b) Key features and pages are missing from clear hierarchy
- c) Information burrying



My insights of the large gaps in information architecture was further supported by a current Airline Admin's sitemap.



Problem Statement

There are large gaps in information architecture as some **hierarchies of information are not accessible** when and where they should be.

The new design increases user-confidence in information management. I focused on two key use cases - operations made by airline administrators and Airble administrators.

To redesign the UX functionality and UI style, I asked internal administrators what touchpoints they interact with most that need urgent designs or re-designs to a top 3:

3. Fleet Management, details, and creation

2. Charter Routes management and creation

3. Team/user management



Fleet

Old

Data access

Filters (119 results)Country:AllProvince:AllCity NameOperatorClear AllNew

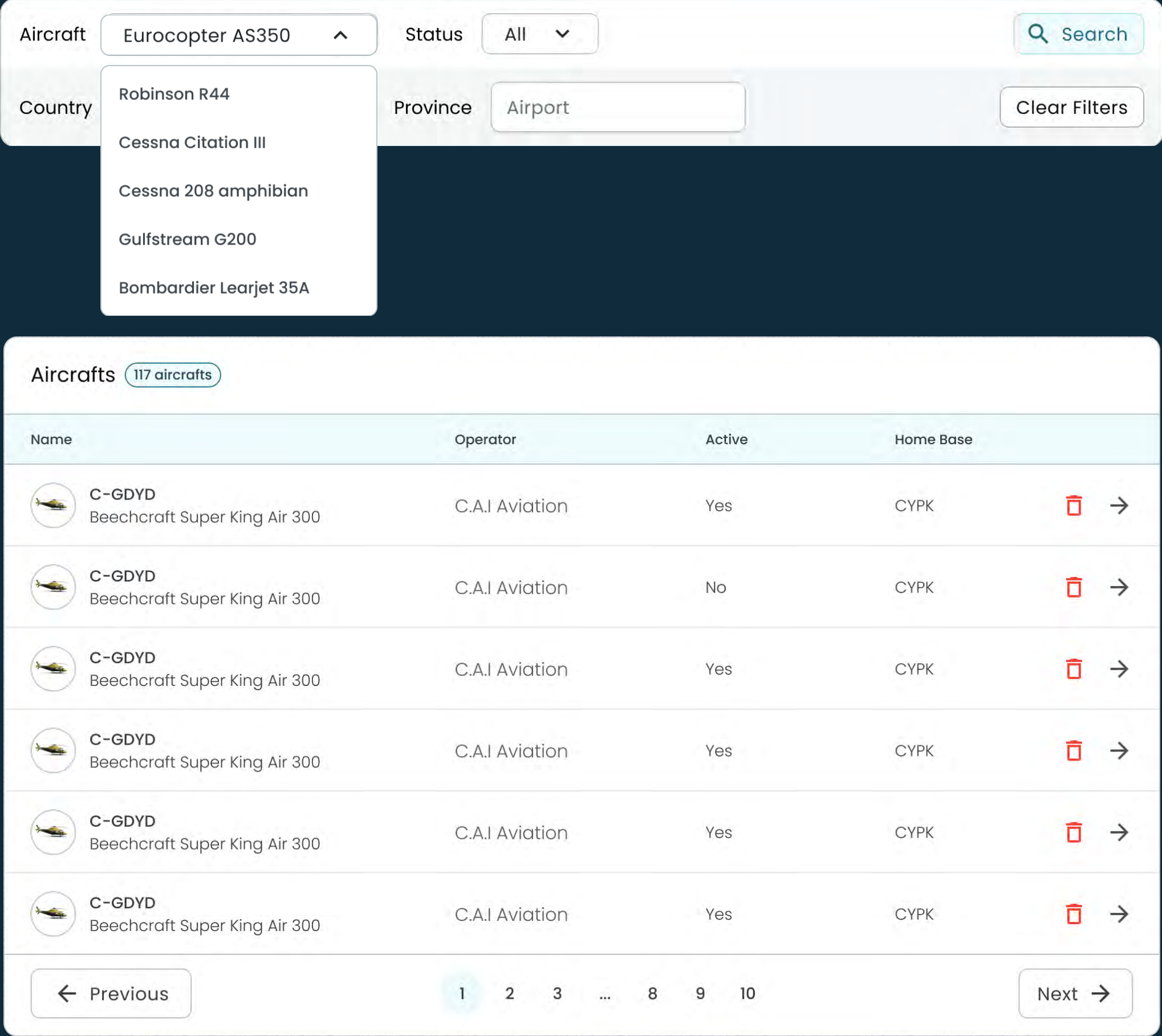
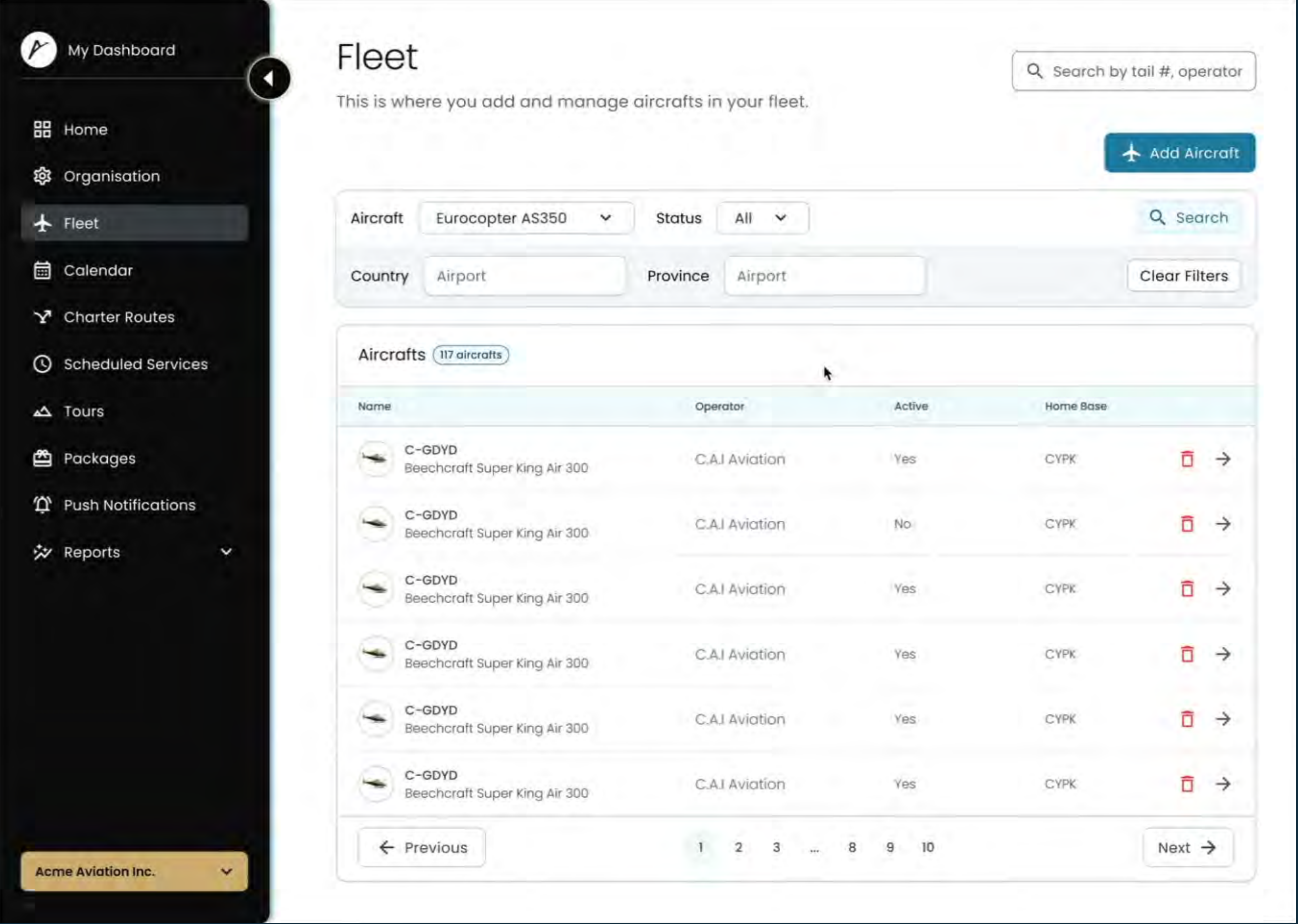
#	Registration	Operator	Aircraft	Type	Home Base	In Service	Action
1	C-GLRE	TestAir1	Piper Cheyenne	Airplane	CYKA	Yes	Aircraft Details Schedule Destinations Services Deals Delete
2	C-FXBC	TestAir2	Beechcraft Super King Air 300	Airplane	CYPK	Yes	Aircraft Details Schedule Destinations Services Deals Delete
3	C-FVME	TestAir4	Robinson R44	Helicopter	CYPK	Yes	Aircraft Details Schedule Destinations Services Deals Delete
4	C-FCAB	TestAir4	Robinson R44	Helicopter	CYPK	Yes	Aircraft Details Schedule Destinations Services Deals Delete
5	C-FJPH	TestAir4	Bell 206	Helicopter	CYPK	Yes	Aircraft Details Schedule Destinations Services Deals Delete
6	C-FGML	TestAir4	Bell 206	Helicopter	CYPK	Yes	Aircraft Details Schedule Destinations Services Deals Delete
7	C-FBCC	Jatin Test Operator	Eurocopter AS350	Helicopter	CBE9	Yes	Aircraft Details Schedule Destinations Services Deals Delete
8	C-FOCN	TestAir3	De Havilland DHC2	Float Plane	CYVR	Yes	Aircraft Details Schedule Destinations Services Deals Delete
9	C-FHRT	Jatin Test Operator	De Havilland DHC2	Float Plane	CYHC	Yes	Aircraft Details Schedule Destinations Services Deals Delete
10	C-GJPX	TestAir3	Cessna 208 amphibian	Float Plane	CAP3	Yes	Aircraft Details Schedule Destinations Services Deals Delete
11	C-GUIZ	Jatin Test Operator	Bombardier Challenger 605	Business Jet	KJFK	Yes	Aircraft Details Schedule Destinations Services Deals Delete
12	C-FPSW	TestAir10	Cessna Citation Sovereign	Business Jet	CYYZ	No	Aircraft Details Schedule Destinations Services Deals Delete
13	C-FANJ	TestAir10	Pilatus PC-12	Airplane	CYYZ	No	Aircraft Details Schedule Destinations Services Deals Delete
14	C-FTRR	TestAir10	Cessna Citation Bravo	Business Jet	CYYZ	No	Aircraft Details Schedule Destinations Services Deals Delete
15	C-FBXL	TestAir10	Cessna Citation XLS/XLS+	Business Jet	CYZD	No	Aircraft Details Schedule Destinations Services Deals Delete
16	C-GIWM	TestAir11	Robinson R44	Helicopter	CYBL	Yes	Aircraft Details Schedule Destinations Services Deals Delete
17	C-GBIC	TestAir11	Bell 206	Helicopter	CYBL	Yes	Aircraft Details Schedule Destinations Services Deals Delete
18	C-BTSK	Luciano Test Operator	Cessna Citation III	Business Jet	CYYV	Yes	Aircraft Details Schedule Destinations Services Deals Delete

#	Registration	Operator	Aircraft	C-GLRE		
1	C-GLRE	TestAir1	Piper Cheyenne	Aircraft Registration	C-GLRE	
2	C-FXBC	TestAir2	Beechcraft Super King Air 300	Air Operator	TestAir1	
3	C-FVME	TestAir4	Robinson R44	Aircraft	Piper Cheyenne	
4	C-FCAB	TestAir4	Robinson R44	Seats	6	
5	C-FJPH	TestAir4	Bell 206	Aircraft Speed (knots)	200	
6	C-FGML	TestAir4	Bell 206	Aircraft Range (NM)	800	
7	C-FBCC	Jatin Test Operator	Eurocopter AS350	Climb Speed (knots)	130	
8	C-FOCN	TestAir3	De Havilland DHC2	Descent Speed (knots)	180	
9	C-FHRT	Jatin Test Operator	De Havilland DHC2	Rate of Climb (ft/min)	2000	
10	C-GJPX	TestAir3	Cessna 208 amphibian	Rate of Descent (ft/min)	2000	
11	C-GUIZ	Jatin Test Operator	Bombardier Challenger 605	Flight Levels	Knots	Altitude
12	C-FPSW	TestAir10	Cessna Citation Sovereign	Up to 30 min flight	200	7500
13	C-FANJ	TestAir10	Pilatus PC-12	Up to 1 hour flight	210	20000
14	C-FTRR	TestAir10	Cessna Citation Bravo	Longer than 1 hour	220	25000
15	C-FBXL	TestAir10	Cessna Citation XLS/XLS+			
16	C-GIWM	TestAir11	Robinson R44			
17	C-GBIC	TestAir11	Bell 206			

Fleet

New Design

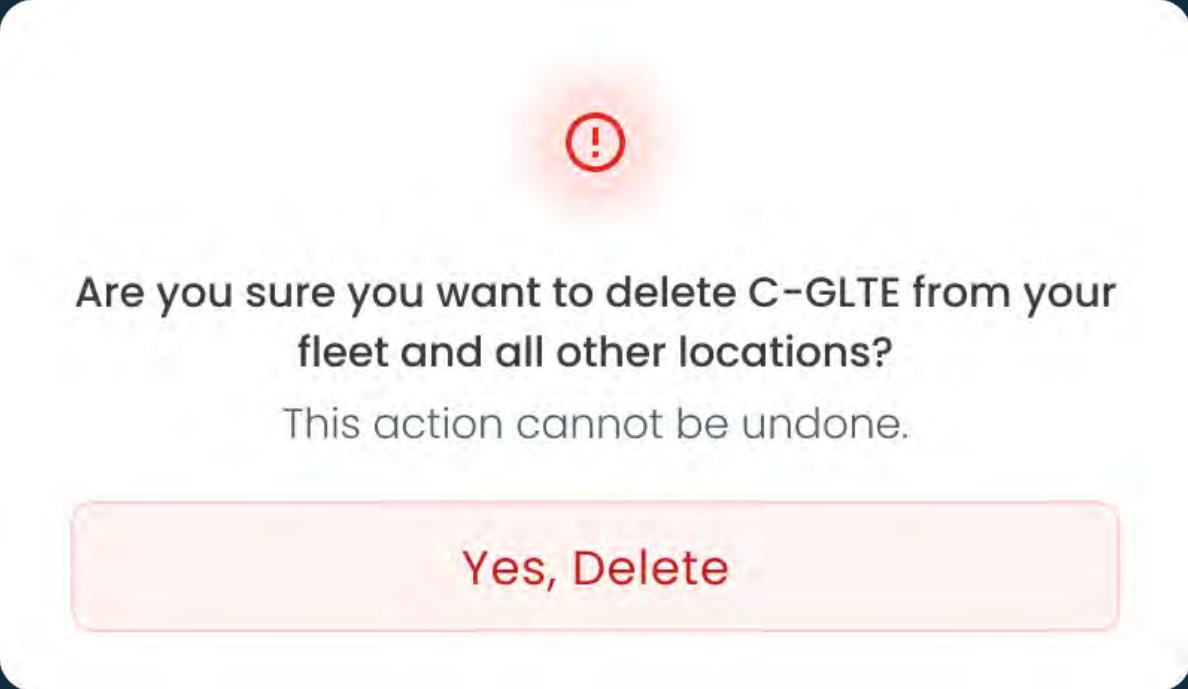
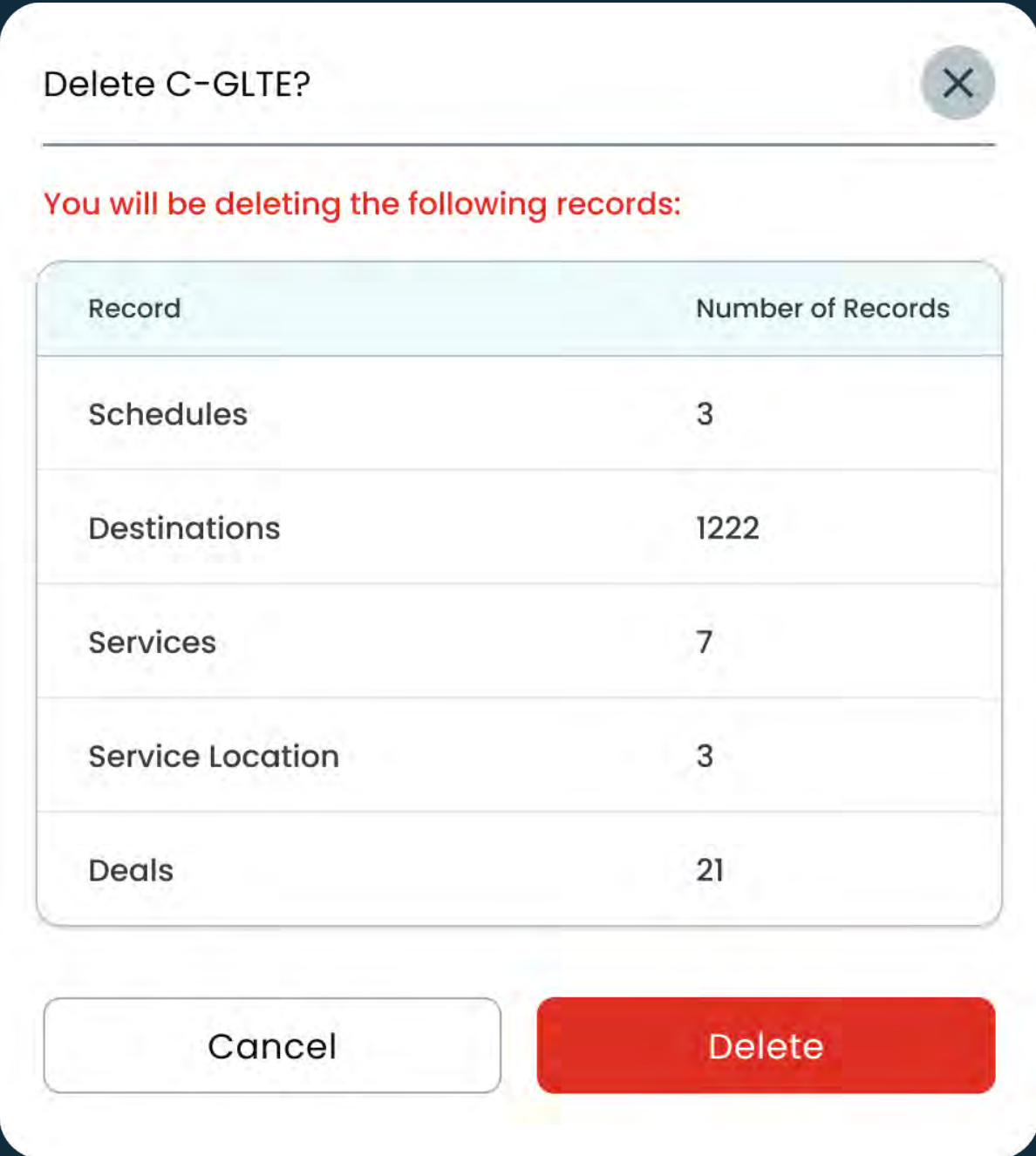
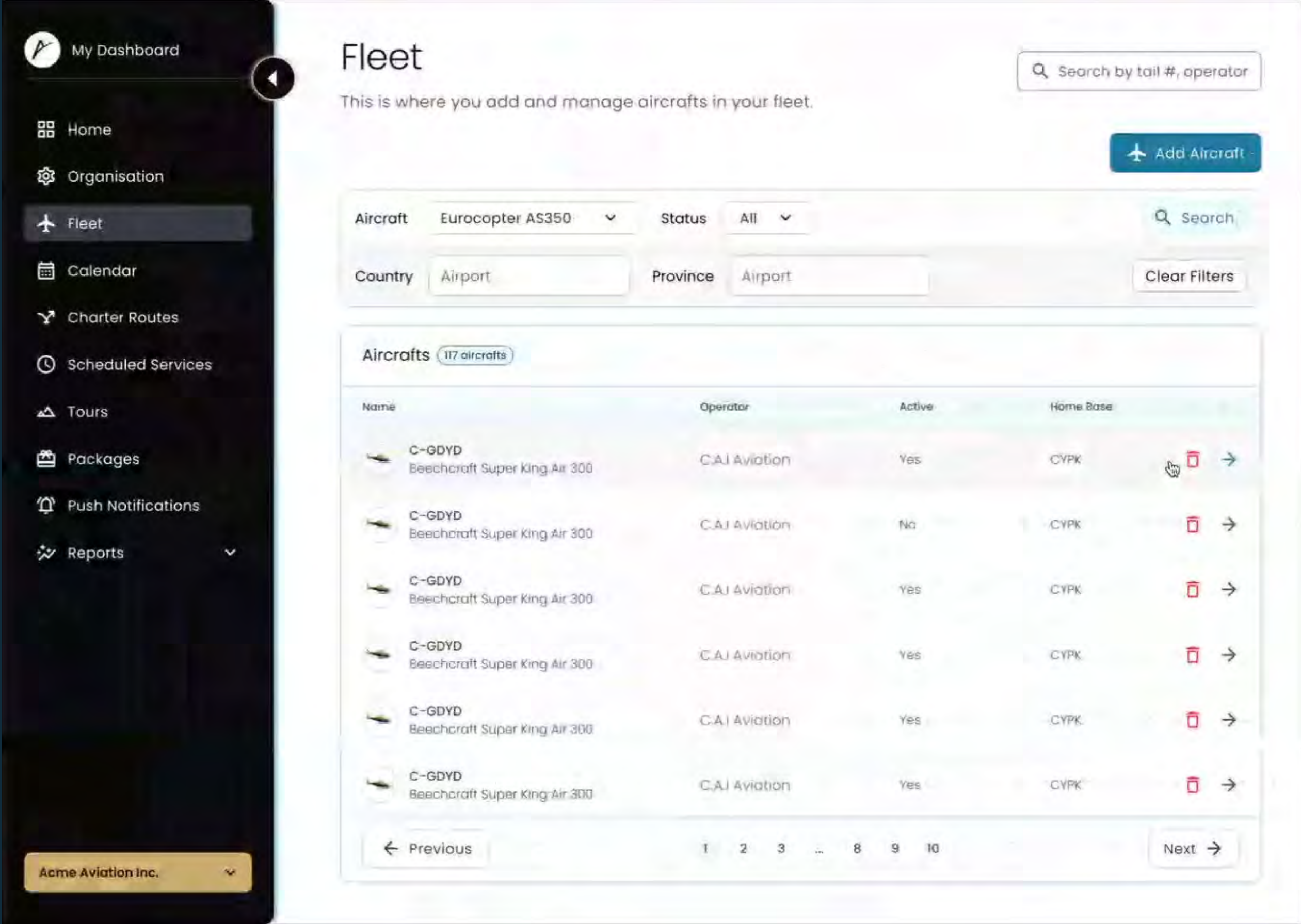
Data access



Fleet

Actions

New Design



Fleet

New Design

Details

My Dashboard

Home

Organisation

Fleet

Calendar

Charter Routes

Scheduled Services

Tours

Packages

Push Notifications

Reports

Acme Aviation Inc.

Fleet

This is where you add and manage aircrafts in your fleet.

Search by tail #, operator

Add Aircraft

AircraftEurocopter AS350StatusAll

CountryAirportProvinceAirport

SearchClear Filters

Aircrafts117 aircrafts

Name	Operator	Active	Home Base	
C-GDYD Beechcraft Super King Air 300	C.AI Aviation	Yes	CYPK	
C-GDYD Beechcraft Super King Air 300	C.AI Aviation	No	CYPK	
C-GDYD Beechcraft Super King Air 300	C.AI Aviation	Yes	CYPK	
C-GDYD Beechcraft Super King Air 300	C.AI Aviation	Yes	CYPK	
C-GDYD Beechcraft Super King Air 300	C.AI Aviation	Yes	CYPK	
C-GDYD Beechcraft Super King Air 300	C.AI Aviation	Yes	CYPK	

Previous

123...8910

Next

C-GLRE

Piper Cheyenne

Testair 1

To be added

Home Airport:

YVR Vancouver Airport

In Service:

Performance & Operations

Images & Amenities

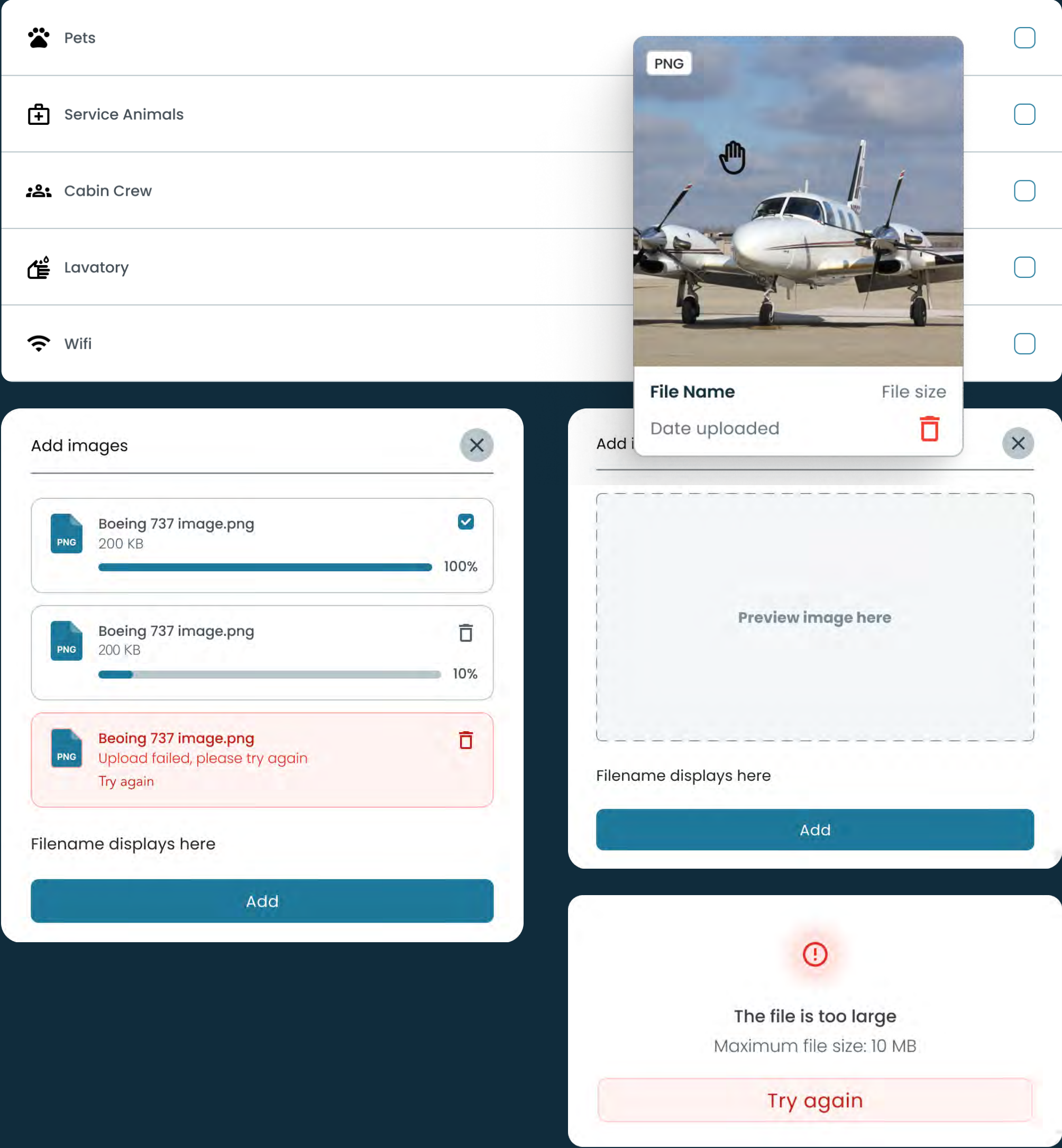
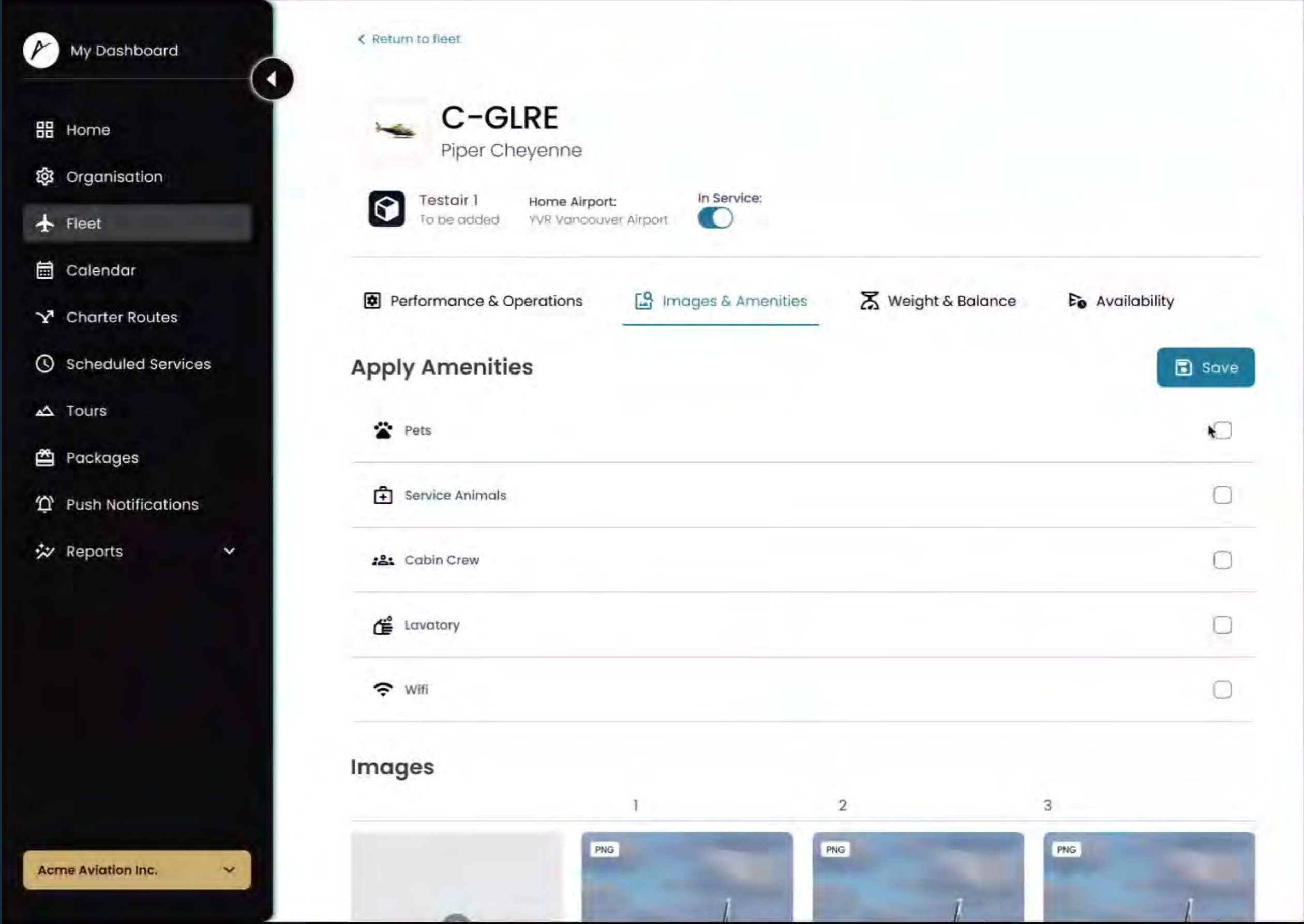
Weight & Balance

Availability

Fleet

Images & Amenities

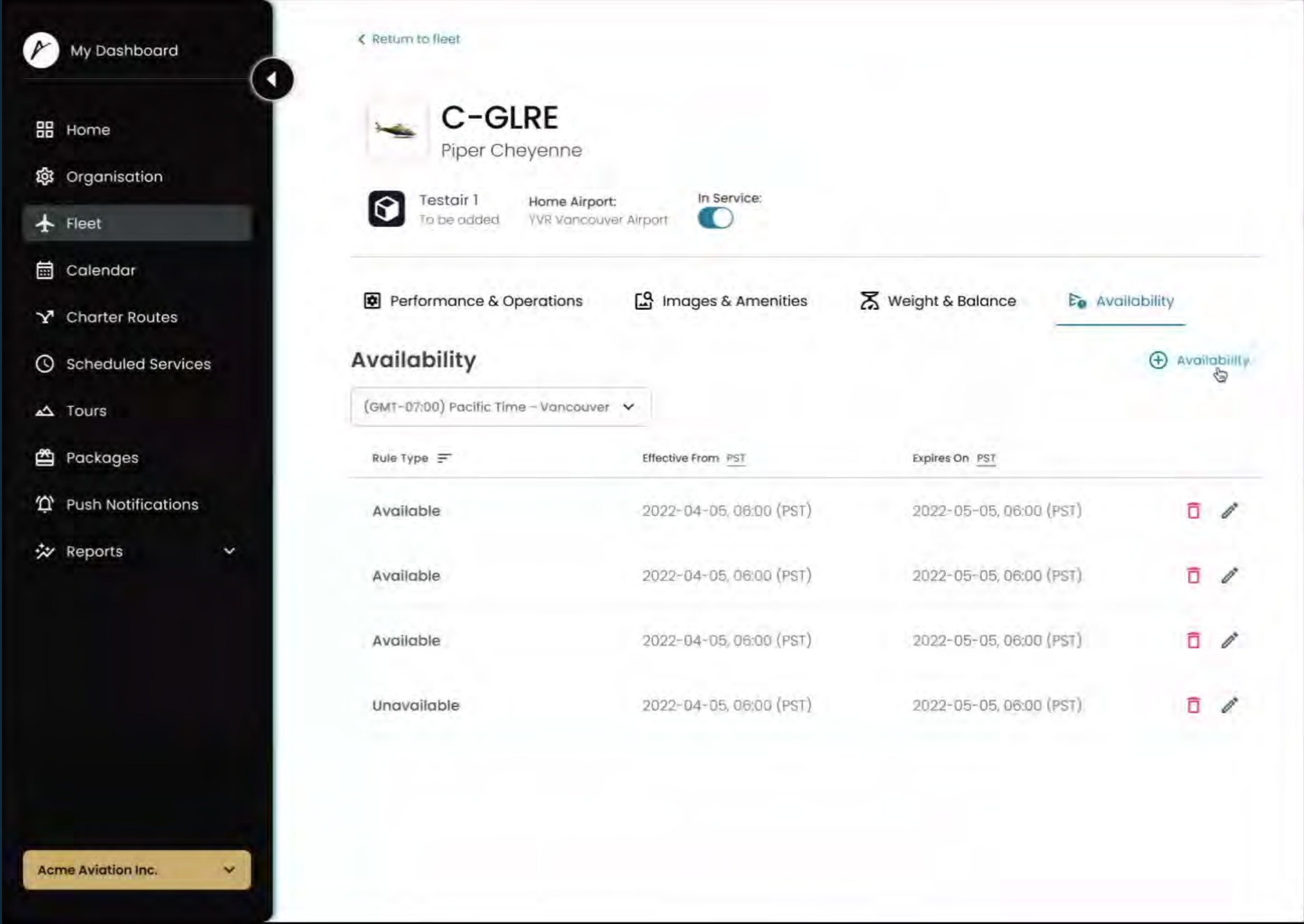
New Design



Fleet

Availability

New Design



Design Work

Create new rule for C-GLRE

Rule Type

Default

Effective Date Type

Date Range

Single Day

Effective From

20 Jan, 2022 - 04 Feb, 2022

Start Time

Select a time

End Time

Select a time

Current time zone (PST)

Does not repeat

☐ All Day (24 hour period)

☐ Sunrise to Sunset

Event time zone

A repeated event has to start and end in the same time zone.

(GMT-07:00) Pacific Time - Vancouver

Use current time zone

Cancel

OK

Cancel

Create

Effective From

20 Jan, 2022 - 04 Feb, 2022

January 2022

S M T W T F S

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

February 2022

S M T W T F S

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Custom recurrence

Repeat every 1 week

Repeat on

S M T W T F S

Ends

☐ Never

☐ On

Jan 11, 2022

☐ After

1 occurrences

Cancel

Done

Charter Routes

New Design

Data access

Filters (119 results)Country:AllProvince:AllCity NameOperatorClear AllNew

#	Registration	Operator	Aircraft	Type	Home Base	In Service	Action
1	C-GLRE	TestAir1	Piper Cheyenne	Airplane	CYKA	Yes	Aircraft Details Schedule Destinations Services Deals Delete
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9	C-FHRT	Jatin Test Operator	De Havilland DHC2	Float Plane	CYHC	Yes	Aircraft Details Schedule Destinations Services Deals Delete
10	C-GJPX	TestAir3	Cessna 208 amphibian	Float Plane	CAP3	Yes	Aircraft Details Schedule Destinations Services Deals Delete
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13	C-FANJ	TestAir10	Pilatus PC-12	Airplane	CYYZ	No	Aircraft Details Schedule Destinations Services Deals Delete
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18	C-BTSK	Juriano Test Operator	Cessna Citation III	Business Jet	CVYY	Yes	Aircraft Details Schedule Destinations Services Deals Delete

Filters (48762 results)From AirportTo AirportClear AllDelete selected (0) RoutesSelect All Routes hereSummary View

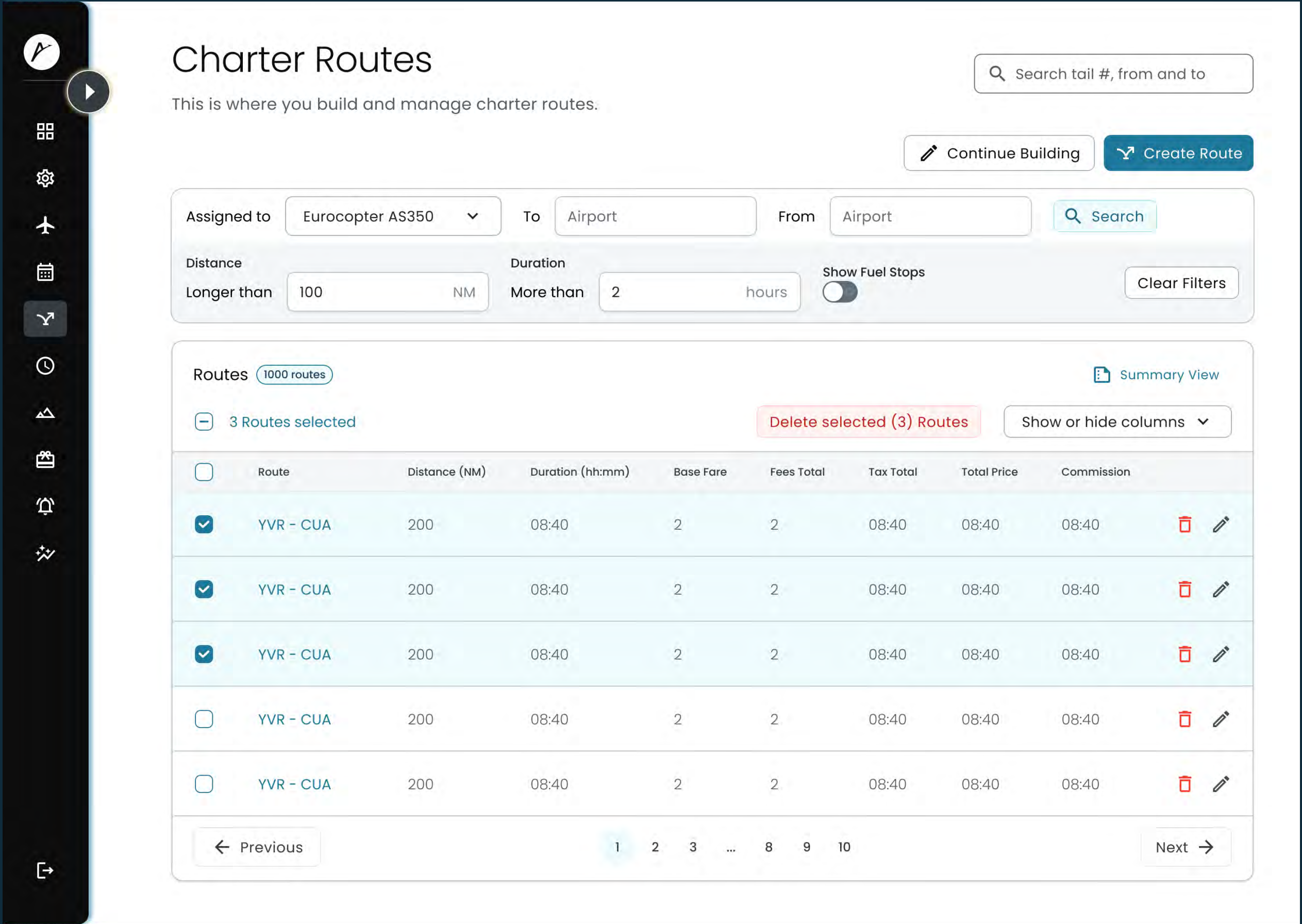
12345...976>>1

#	Select Route	From	To	Seats	Distance (NM)	Fuel Stop	Duration (HHMM)	Price (USD)	Fees	Taxes	Total (USD)	Actions
1	☐	CYXC	KBTM	5	256.41	No	0:57	9455.60	2 fees totalling 1207.50	1 taxes at 5%	11135.88	Edit Delete
2	☐	CYXC	KBOI	5	363.57	No	1:10	11735.57	2 fees totalling 1207.50	1 taxes at 5%	13529.85	Edit Delete
3	☐	CYXC	KBZN	5	296.62	No	1:02	10311.00	2 fees totalling 1207.50	1 taxes at 5%	12034.05	Edit Delete
4	☐	CYXC	KGTF	5	216.97	No	0:52	8616.30	2 fees totalling 1207.50	1 taxes at 5%	10254.61	Edit Delete
5	☐	CYXC	KHLN	5	236.06	No	0:54	9022.56	2 fees totalling 1207.50	1 taxes at 5%	10681.19	Edit Delete
6	☐	CYXC	KGPI	5	98.62	No	0:37	6098.30	2 fees totalling 1207.50	1 taxes at 5%	7610.71	Edit Delete
7	☐	CYXC	KCPR	5	557.54	No	1:35	15862.62	2 fees totalling 1207.50	1 taxes at 5%	17863.25	Edit Delete
8	☐	CYXC	KDUG	5	1124.24	No	2:48	27920.09	2 fees totalling 1207.50	1 taxes at 5%	30523.59	Edit Delete
9	☐	CYXC	KOLS	5	1114.76	No	2:46	27718.35	2 fees totalling 1207.50	1 taxes at 5%	30311.77	Edit Delete
10	☐	CYXC	KPHX	5	985.68	No	2:30	24971.81	2 fees totalling 1207.50	1 taxes at 5%	27427.90	Edit Delete
11	☐	CYXC	KTUS	5	1072.66	No	2:41	26822.48	2 fees totalling 1207.50	1 taxes at 5%	29371.10	Edit Delete
12	☐	CYXC	KCOS	5	803.41	No	2:07	21093.77	2 fees totalling 1207.50	1 taxes at 5%	23355.96	Edit Delete
13	☐	CYXC	KABQ	5	963.39	No	2:27	24497.68	2 fees totalling 1207.50	1 taxes at 5%	26930.06	Edit Delete

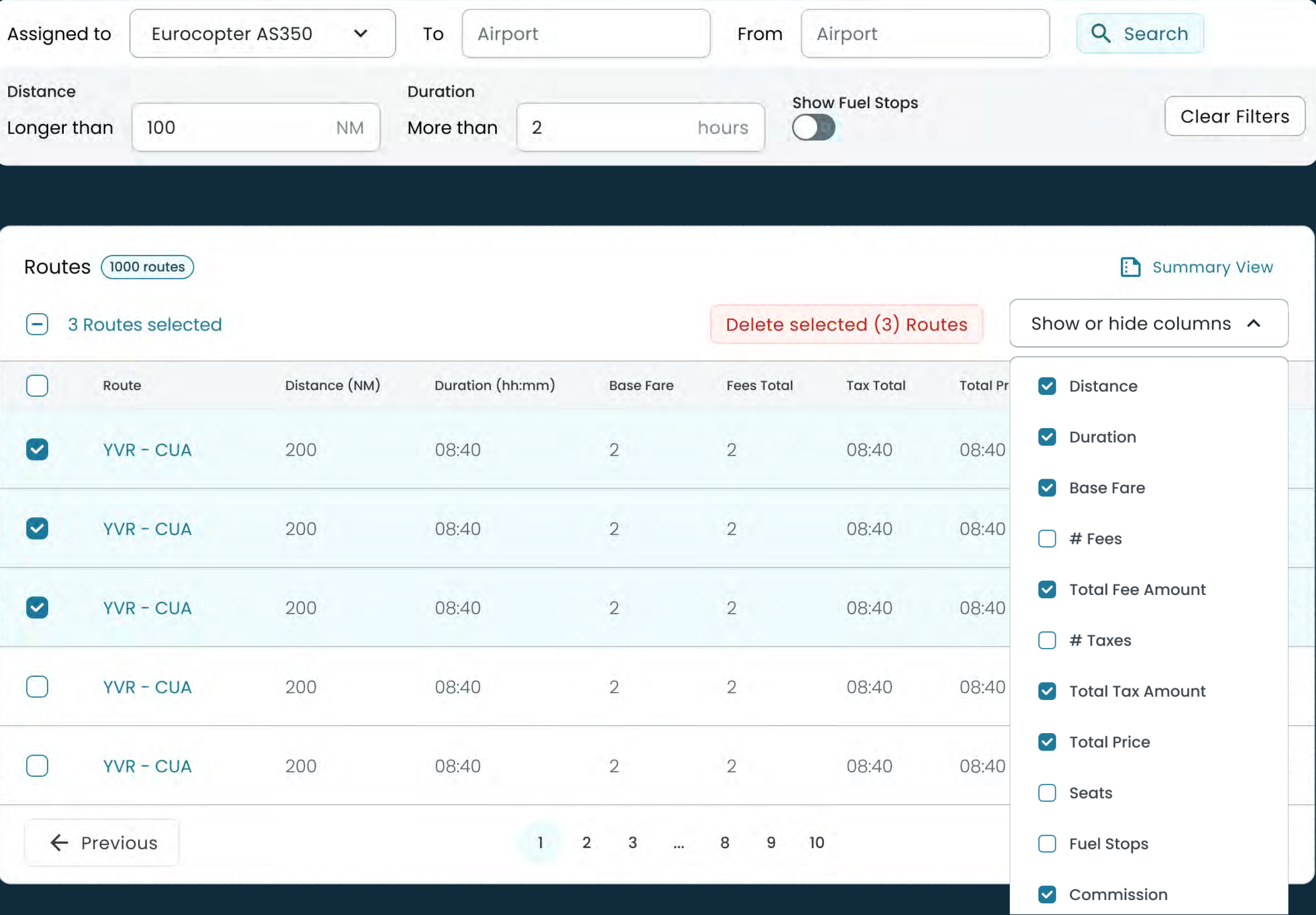
Charter Routes

New Design

Extensive Table Display



Continue Building



Charter Routes

New Design

Create Route

< Return

Create Charter Route

Set Route Type

Choose to create a single route or multiple routes.

Conditions

Filter possible destinations.

Route & Operational Settings

Configure Operational settings.

Price Settings

Set charter price, fees, and taxes.

Origin

Home Airport: Kamloops Intl Airport (CYKA)

Multiple Routes

Selected

Single Route

Select

Cancel

Save & Next

Design Work

Set Route Type

Choose to create a single route or multiple routes.

Conditions

Filter possible destinations.

Route & Operational Settings

Configure Operational settings.

Price Settings

Set charter price, fees, and taxes.

Multiple Routes

Selected

Single Route

Select

CAILINE KEIRSTEAD
4th year IxD - Spring 2024

Charter Routes

New Design

Create Route

< Return

Create Charter Route

✓

Route Type

Choose to create a single route or multiple routes.

Conditions

Filter possible destinations.

Route & Operational Settings

Configure Operational settings.

Price Settings

Set charter price, fees, and taxes.

Set Conditions

Origin

Home Airport: Kamloops Intl Airport (CYKA)

Airport Types

Water Aerodrome, Medical Heliport

Select airport type...

☐ Heliport

☒ Water Aerodrome

☒ Medical Heliport

☐ Land Aerodrome

☐ Custom Heliport

☐ Custom Water Aerodrome

Minimum Runway Length

0ft

Paved

No preference

AllPaved

This range has already accounted for 30 minutes of fuel reserve.

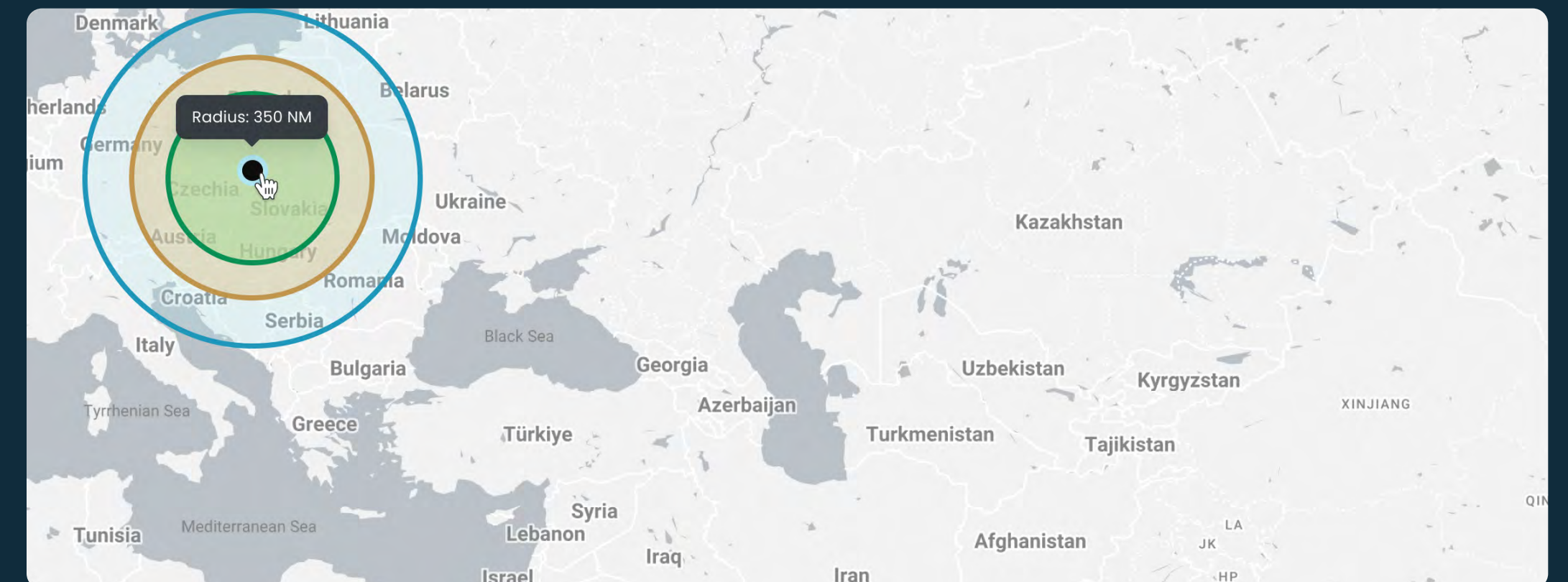
Radius End
Same Day Return within Fuel Range (350NM) ⓘ

Select radius range... ^

Same Day Return within Fuel Range (350NM)

Same Day Return within Duty Time (800NM)

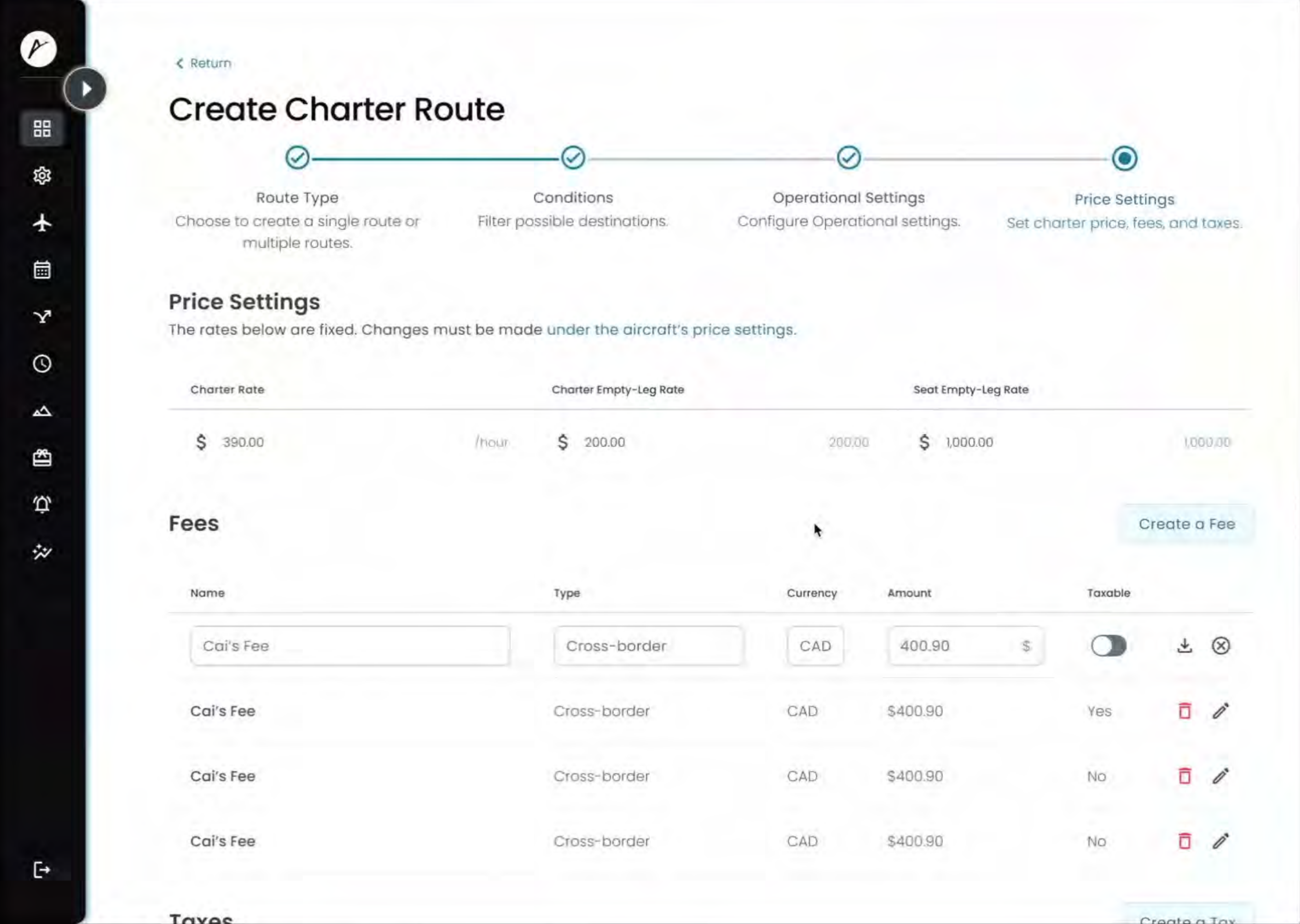
Custom Distance



Charter Routes

New Design

Create Route



Charter Rate

Charter Empty-Leg Rate

Seat Empty-Leg Rate

\$ 390.00

/hour

\$ 200.00

/hour

\$ 1,000.00

/hour

Fees

Create ✓

Fee Name

Type

Enter Fee Name

Select fee type...

Amount

Currency

\$ 0.00

CAD

Select currency...

Taxable

Name

Type

Currency

Amount

Taxable

Cai's Fee

Cross-border

CAD

400.90

\$

Cai's Fee

Cross-border

CAD

\$400.90

Yes

Cai's Fee

Cross-border

CAD

\$400.90

No

Cai's Fee

Cross-border

CAD

\$400.90

No

Team

New Design

Add new user

Team

This is where you add and manage your team.

Sort: Oldest

Show Roles

+ Add User

Team members

100 users

Name	Role	Compliant	Phone Number	
John Doe johndoe@gmail.com	Captain	Yes	+1 (555) 000-0000	→
John Doe johndoe@gmail.com	Scheduler	Yes	+1 (555) 000-0000	→
John Doe johndoe@gmail.com	Secretary	Yes	+1 (555) 000-0000	→
John Doe johndoe@gmail.com	Cabin Crew	Yes	+1 (555) 000-0000	→
John Doe johndoe@gmail.com	First Officer	Yes	+1 (555) 000-0000	→
John Doe johndoe@gmail.com	First Officer	Yes	+1 (555) 000-0000	→
John Doe johndoe@gmail.com	Captain	Yes	+1 (555) 000-0000	Activate
John Doe johndoe@gmail.com	Captain	Yes	+1 (555) 000-0000	Activate

← Previous

123...8910

Next →

Design Work

Add a user

Full Name

John Doe

Role

Cabin Crew

Email

johndoe@gmail.com

This will be used as your username.

Profile Photo

Upload or drag and drop
in JPEG, PNG or PDF.

Phone

+1 (555) 000-0000

Weight (lbs)

200

Date of birth

01/12/2003

Address

751 Howard Street
North Vancouver, V2E 2O9
Vancouver

Emergency Contact

Johnny Smith

Emergency Contact Phone

(250) 999-0090

Cancel

Confirm

Team

New Design

Add new user

My Dashboard

Home

Organisation

Team

All Users

Fleet

Calendar

Charter Routes

Scheduled Services

Tours

Packages

Push Notifications

Reports

Acme Aviation Inc.

Return

John Doe

Captain

General Info

Log Book

User Settings

Documents

Max FT Tomorrow

Based on 78 hrs – 30 Day Limit.

Earliest FDP Start time Today at 20:45

Next Available Work day

Based on most recent logged flight.

Oct 30, 2024 @ 20:45

Flight Times

Accumulated flight time (hrs) over the following time periods.

24 hours

7 days

28 days

30 days

90 days

365 days

8.4

22

30

32

40

300

Rest Times

Rest days over the following time periods and required next rest period.

30 days

90 days

Next Rest

Next Rest Limit

26

66

Oct 30, 2024 @00:00

361 single day free in 168 hrs and 4 single days free in 672 hrs

Hours Worked

Accumulated work time (hrs) over the following time periods.

1 day

7 days

28 days

365 days

8.4

22

30

300

Recent Flights

10 flights

Name

Flight Status

Flight ID

Flight Route

John Doe

Active

DOKBJN

CYVR

✈

CYYC

→

John Doe

Active

DOKBJN

CYVR

✈

CYYC

→

At a glance

Quick reference of the pilot's days worked, rest days, and duty time.

Max FT Tomorrow

Based on 78 hrs – 30 Day Limit.

Earliest FDP Start time Today at 20:45

Next Available Work day

Based on most recent logged flight.

Oct 30, 2024 @ 20:45

Flight Times

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7 days

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30 days

90 days

365 days

8.4

22

30

32

40

300

Rest Times

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30 days

90 days

Next Rest

Next Rest Limit

26

66

Oct 30, 2024 @00:00

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1 day

7 days

28 days

365 days

8.4

22

30

300

Recent Flights

10 flights

Name

Flight Status

Flight ID

Flight Route

John Doe

Active

DOKBJN

CYVR

✈

CYYC

→

John Doe

Active

DOKBJN

CYVR

✈

CYYC

→

John Doe

Active

DOKBJN

CYVR

✈

CYYC

→

John Doe

Active

DOKBJN

CYVR

✈

CYYC

→

← Previous

1

2

3

...

8

9

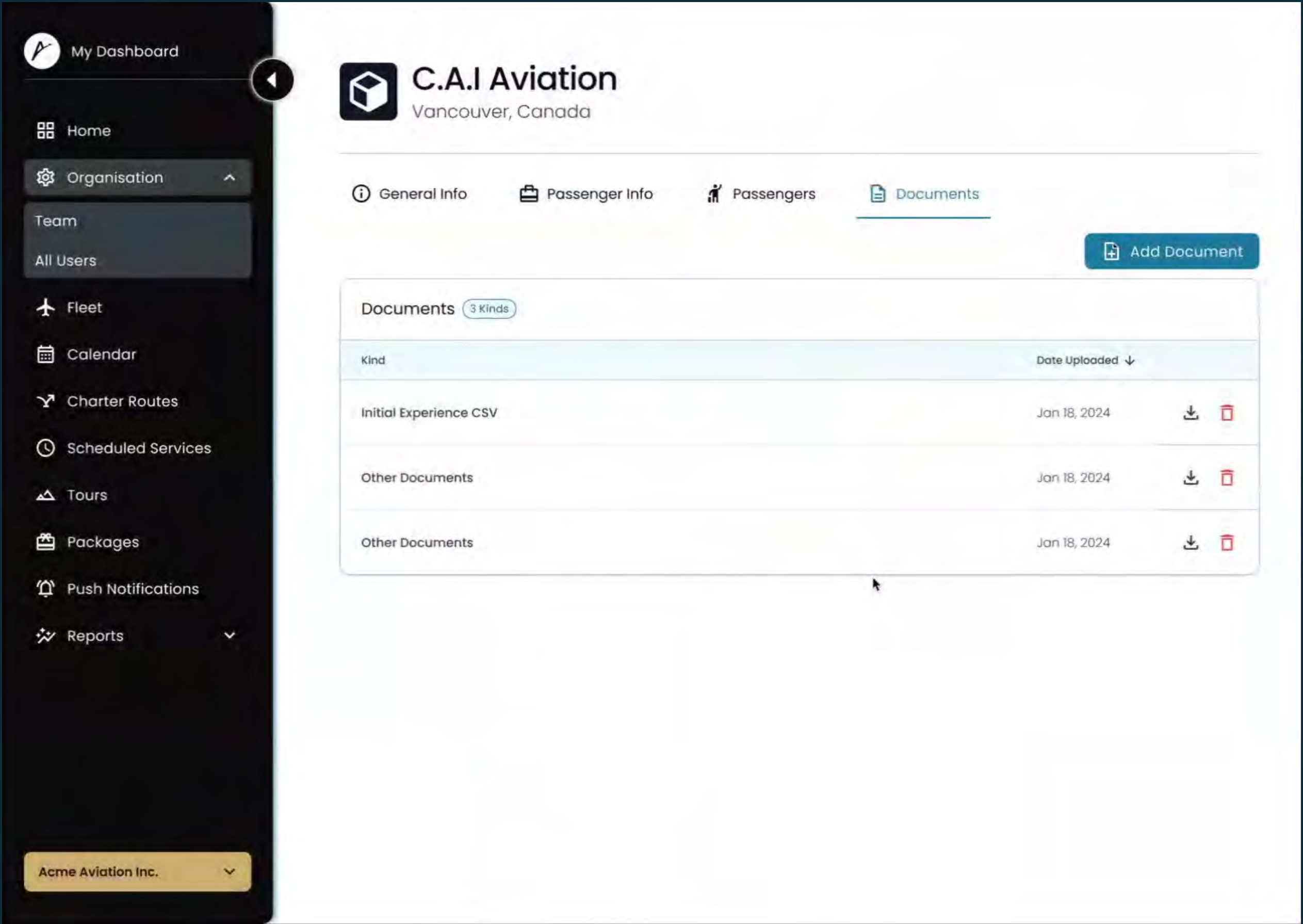
10

Next →

Team

New Design

Add new user



Add Document

Document Name

Type here...

Description

Type here...

Profile Photo

Upload or drag and drop
in JPEG, PNG or PDF.

Document Notes

Leave a note about this document...

Created by: John Doe

Cancel

Confirm

01

CLIENT COMMUNICATION

02

ITERATIVE DESIGNING

03

RAPID FEEDBACK

04

PITCHING DESIGNS

05

DEVELOPPER HANDOFF

06

INFORMATIVE EXPERTISE

07

TEAMWORK

