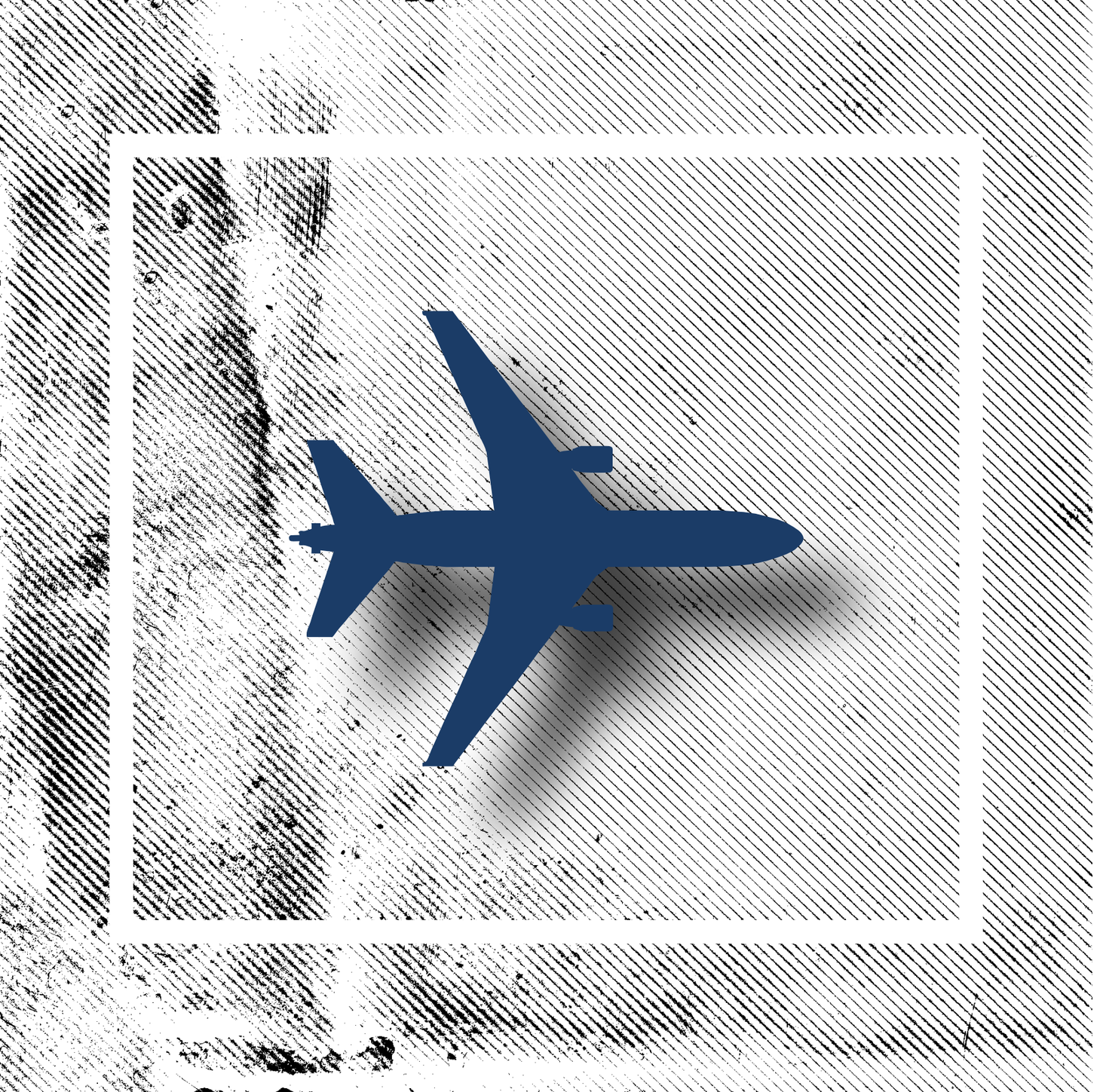
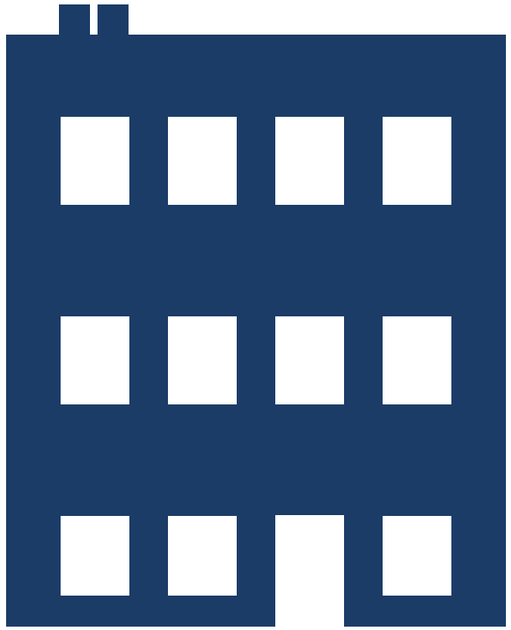
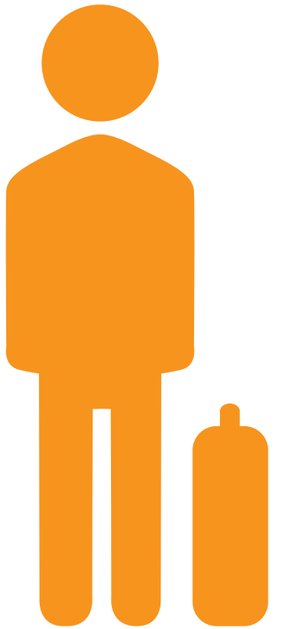
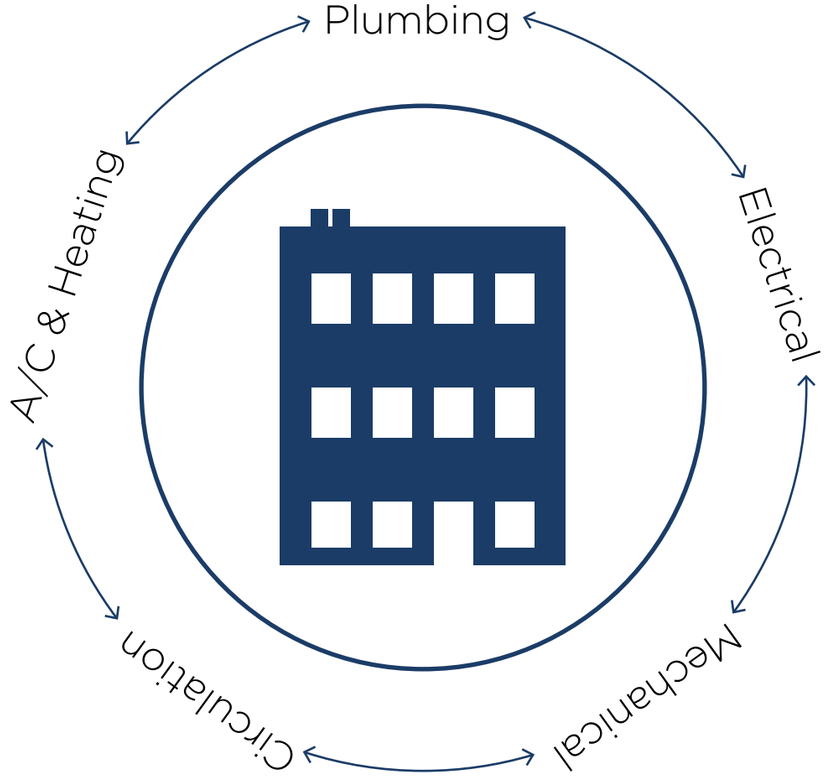


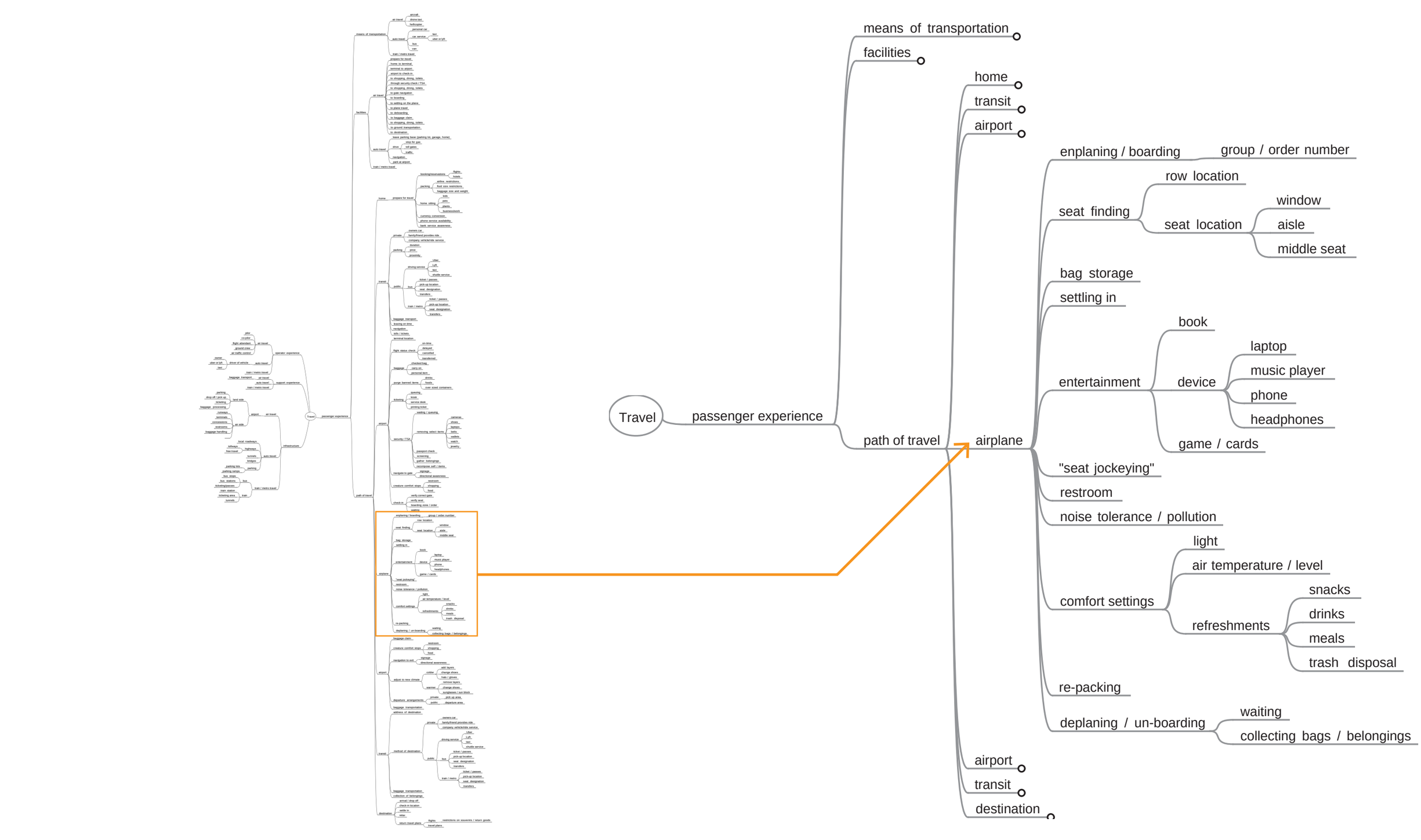
Redesigning the Airline Passenger Experience





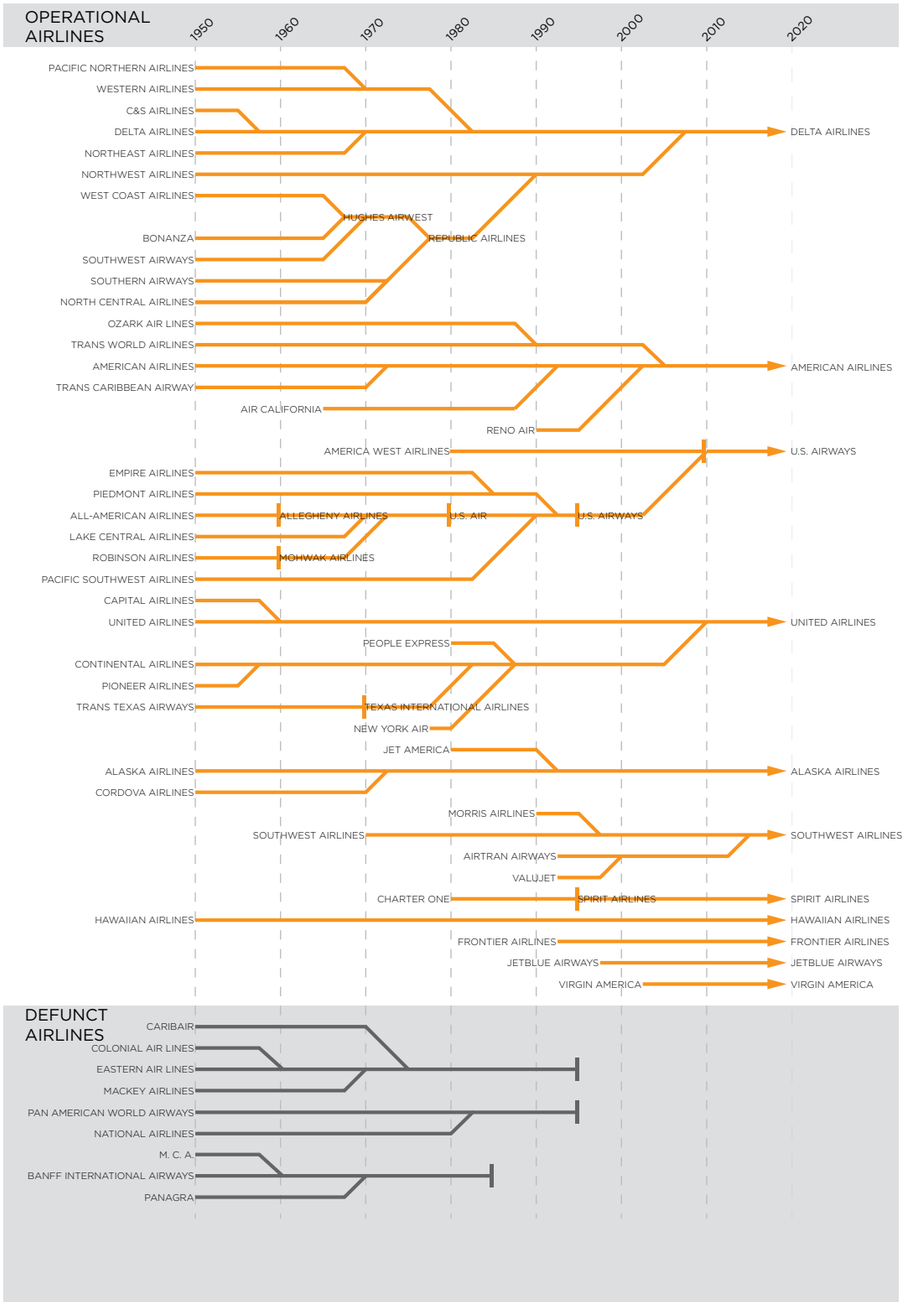

Plumbing
Electrical
Mechanical
Circulation
A/C & Heating

Packing
Navigation &
Wayfinding
Scheduling
Reservations
Transportation


Travel
passenger experience
means of transportation
facilities
path of travel
airplane
airport
transit
destination
enplaning / boarding
group / order number
seat finding
row location
seat location
window
aisle
middle seat
bag storage
settling in
entertainment
book
device
laptop
music player
phone
headphones
game / cards
"seat jockeying"
restroom
noise tolerance / pollution
comfort settings
light
air temperature / level
refreshments
snacks
drinks
meals
trash disposal
re-packing
deplaning / un-boarding
waiting
collecting bags / belongings

US MAJOR AIRLINE MERGER LINEAGE

1950 - 2019



User Profile Radar Chart

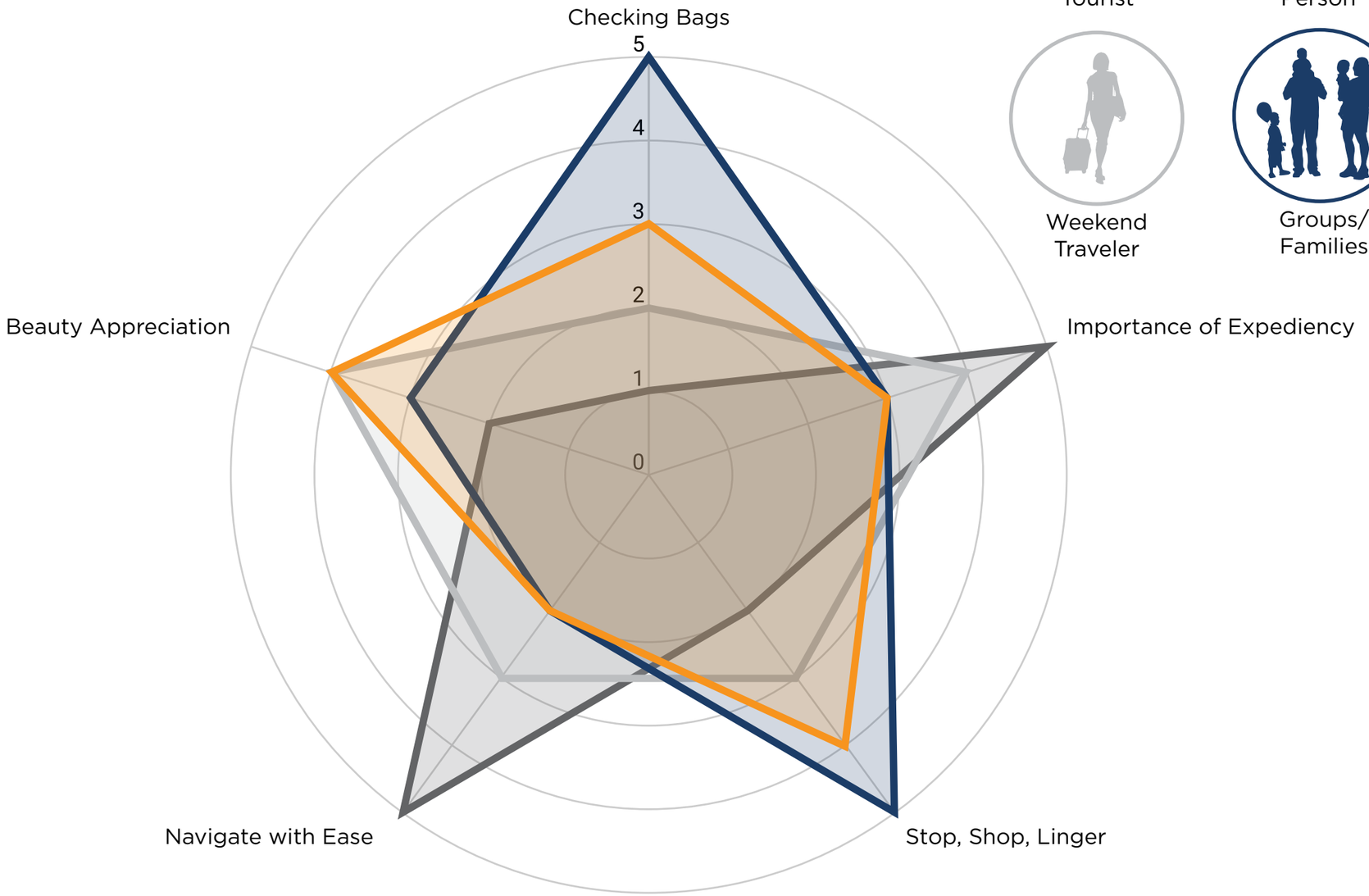
This graphic shows the anticipated needs of the variuos types of travelers. This information would later help inform decisions about spatial arrangements, expected desirable amenities, and more.

Vacationer/
Tourist

Business
Person

Weekend
Traveler

Groups/
Families



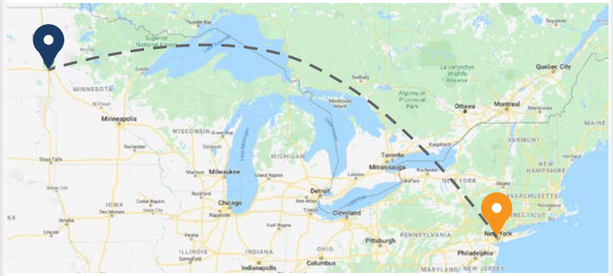
Top 5 Trending Passenger Requests

Info taken from IATA Global Passenger Survey 2019

1. The automation of a growing number of airport processes
2. A single identity token for all travel processes, using biometric identification
3. Real-time flightinformation sent directly to their personal devices
4. Increasingly efficient airport security that does not require having to remove or unpack personal items
5. Seamless border control

JUMP
Let's get you in the air
Make plans
My plans
Explore
Help me find...

JUMP



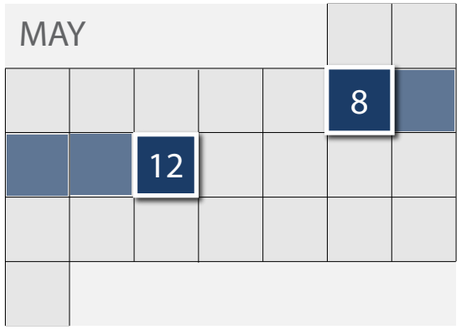
WHERE

FROM | TO

⊕ Add Additional Stop

WHEN

__ __ / __ __ / __ __ | __ __ / __ __ / __ __



JUMP

HOW MANY

ADULTS	⊖	1 ⊕
CHILDREN (2-12)	⊖	0 ⊕
INFANTS	⊖	0 ⊕

WHO

ADULTS

FIRST NAME | LAST NAME

DATE OF BIRTH | GENDER

__ __ / __ __ / __ __ | SELECT GENDER

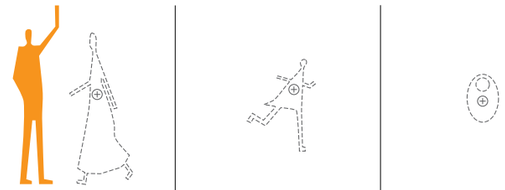
PHONE NUMBER | EMAIL ADDRESS

___ - ___ - _____ | EMAIL

⊕ Adtl. Services & Special Requests

YOUR PARTY

MITCH



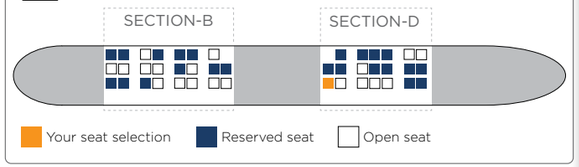
JUMP

FILTER RESULTS | SORT BY:

Airline Alpha $$

HH:MM Flight Time | Depart HH:MM, Arrive HH:MM

21 AVAILABLE SEATS



Airline Beta $$$

HH:MM Depart HH:MM, Arrive HH:MM | 30 Available Seats

Airline Charlie $$$

HH:MM Depart HH:MM, Arrive HH:MM | 5 Available Seats

⊕ LOAD MORE

JUMP

FILTER RESULTS SORT BY:

Hostel $$

14 Hostels within 10 miles of destination 3.6 Average Guest Rating

Airbnb $$

98 Airbnbs within 10 miles of destination 4.1 Average Guest Rating

Hotel $$$

8 Hotels within 10 miles of destination 3.5 Average Guest Rating

Resort $$$

5 Resorts within 10 miles of destination 4.9 Average Guest Rating

LOAD MORE

JUMP

NAME OF ITEM

ADD PHOTO

TRANSPORT OPTIONS

Carry on

ADD ANOTHER ITEM

ADD CARRY ON

ADD CHECKED BAG

JUMP

PERSONAL ITEM 1

Carry on

NAME OF ITEM

ADD PHOTO

TRANSPORT OPTIONS

Carry on Drop off Request pick-up

WHERE

FROM TO

__ __ / __ __ / __ __ __ __ / __ __ / __ __

STATUS

LOCATION

TRACKING NUMBER

-

ADD ANOTHER ITEM

ADD CHECKED BAG

JUMP

YOUR THINGS

My Backpack

PERSONAL ITEM

Transport Method: CARRY ON

My Dufflebag

CARRY ON

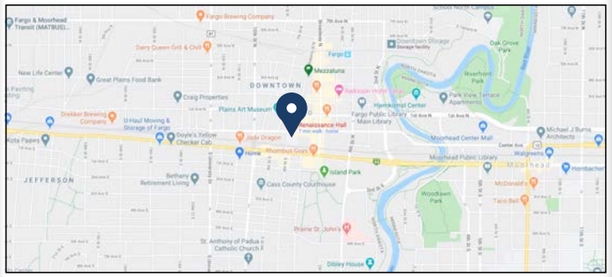
Transport Method: CARRY ON

EVERYTHING LOOKS RIGHT

JUMP

TRANSIT PLANS

PERSONAL VEHICLE	DRIVING SERVICE	PUBLIC TRANSIT
Bag Drop Location	Bag Drop Location	Bag Drop Location
My Gate	Local Taxi	Choose Route
Parking Lots Avail.	Uber	Nearby Stops
Parking Rates	Lyft	My Gate
	More Driving Serv.	
	My Gate	



JUMP

HERE WE GO!

My Plan | TRANSIT | Airport | Airplane | Destination

1 234567 890128 >

Your Transit Pass

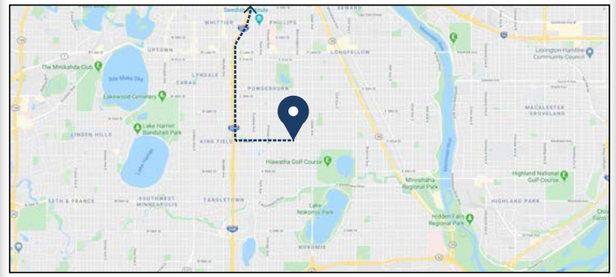
ONBOARD: BUS #483

HEADED FOR: Seattle-Tacoma Intl. Airport

17801 International Blvd, Seattle, WA 98158

Estimated Time of Arrival: 12:34 PM (PST)

Your Current Location & Route:



JUMP

Let's get you in the air

Make plans

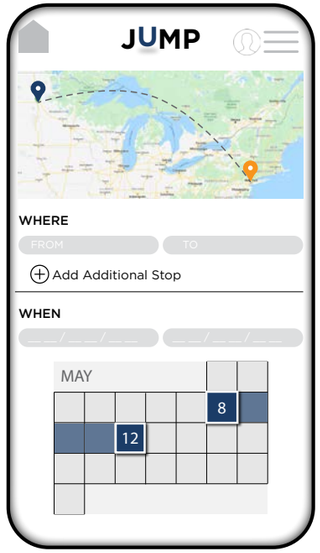
My plans

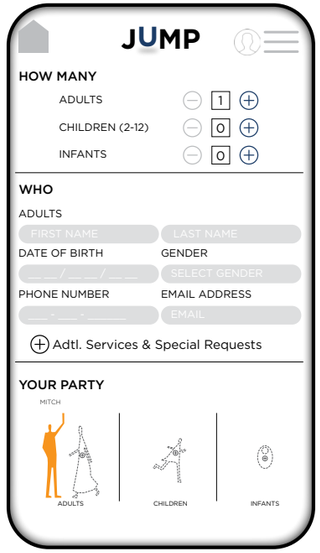
Explore

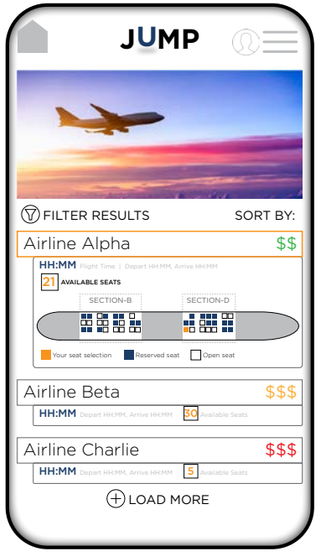
Help me find...

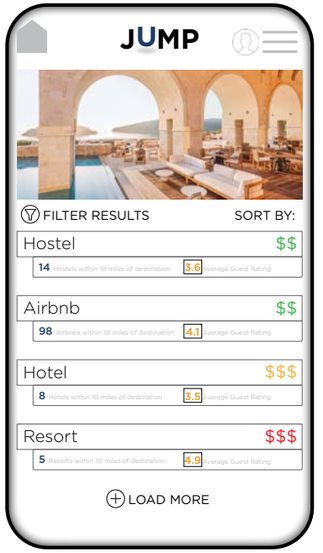
Home screen

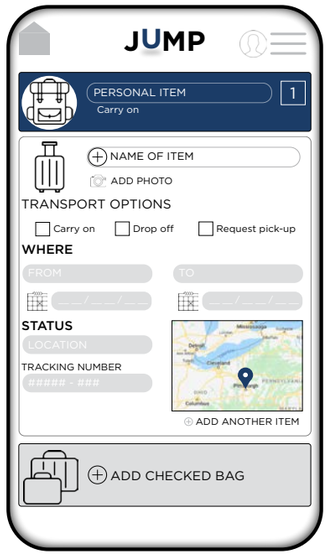
This app would seek to combine a series of digital tools in a way that makes the user be able to follow their path of travel from start to finish, or in this case, door to door. Shown here are some sample screenshots of how I picture the UI of the app to appear. Designed to take all the jargon, hidden fees and unexpected detours out of air travel, JUMP would deconstruct the journey into bite-size pieces that even the most inexperienced passenger would understand and enjoy.

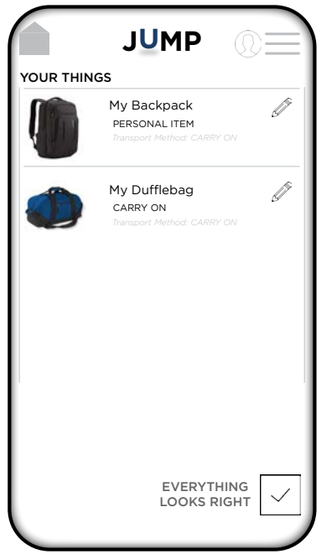


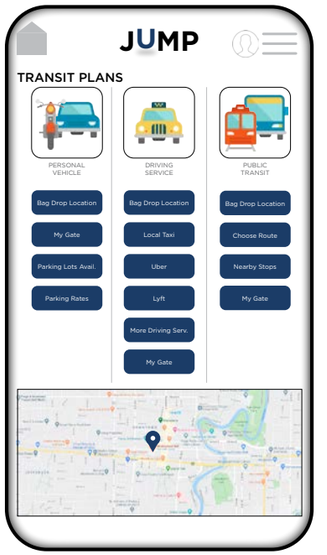


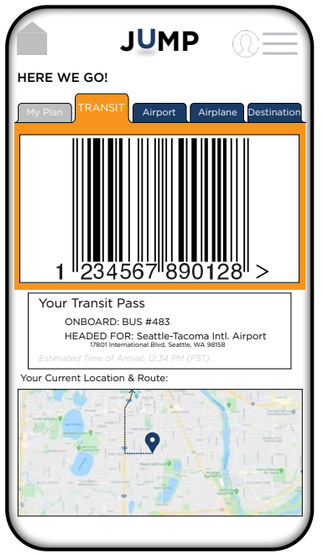


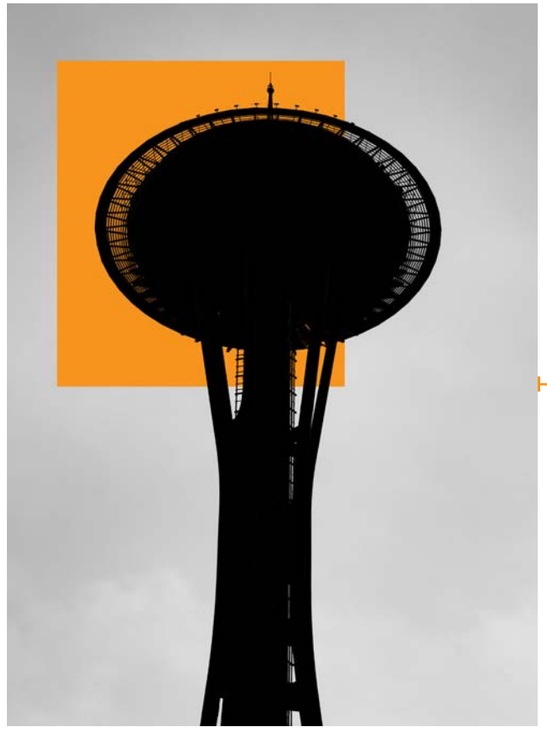


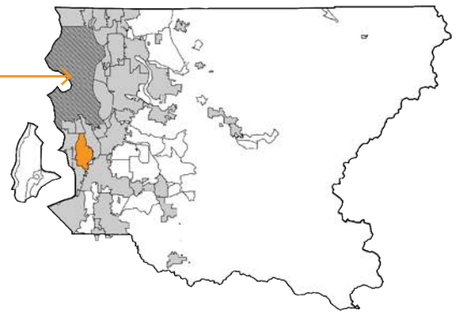






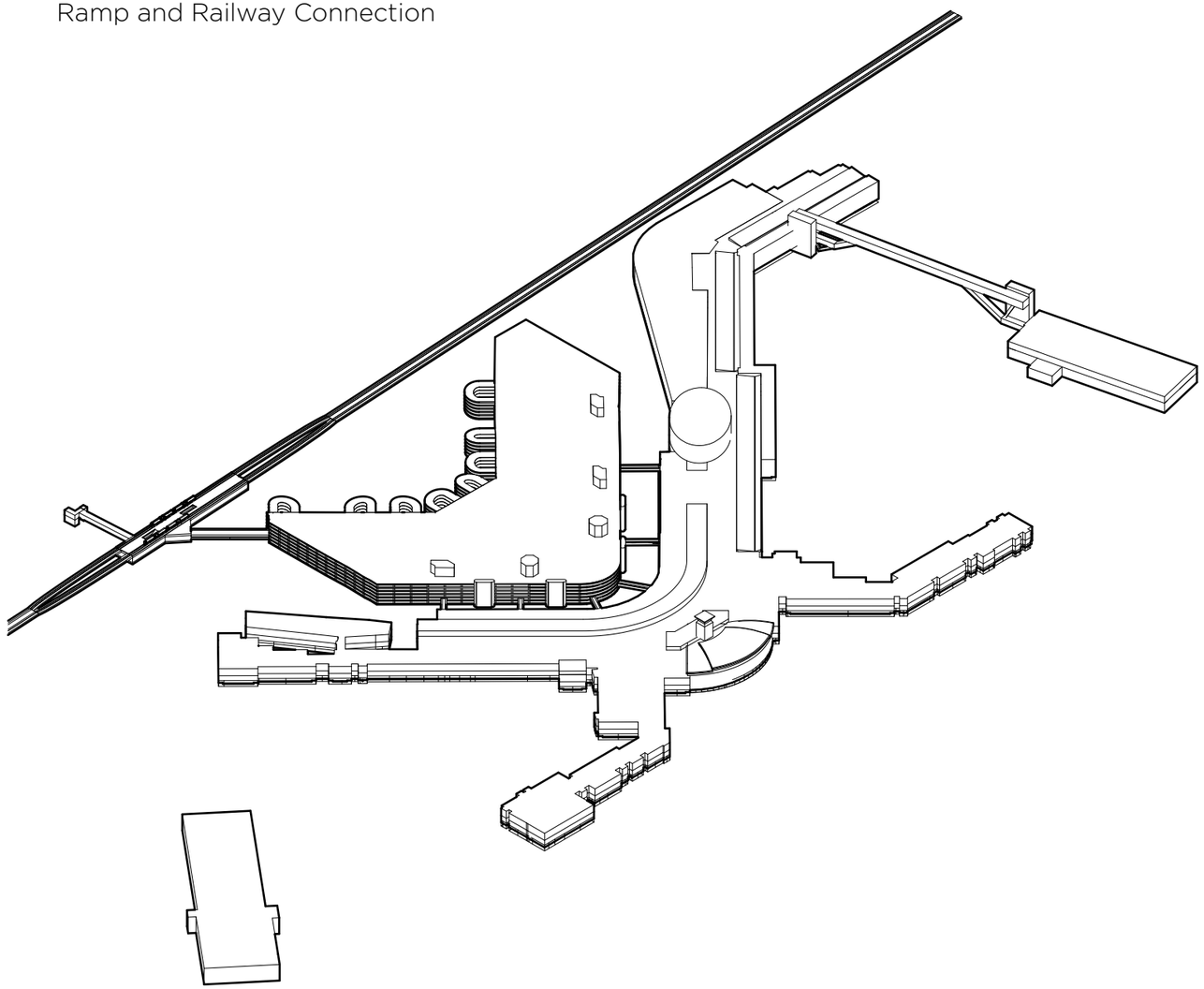






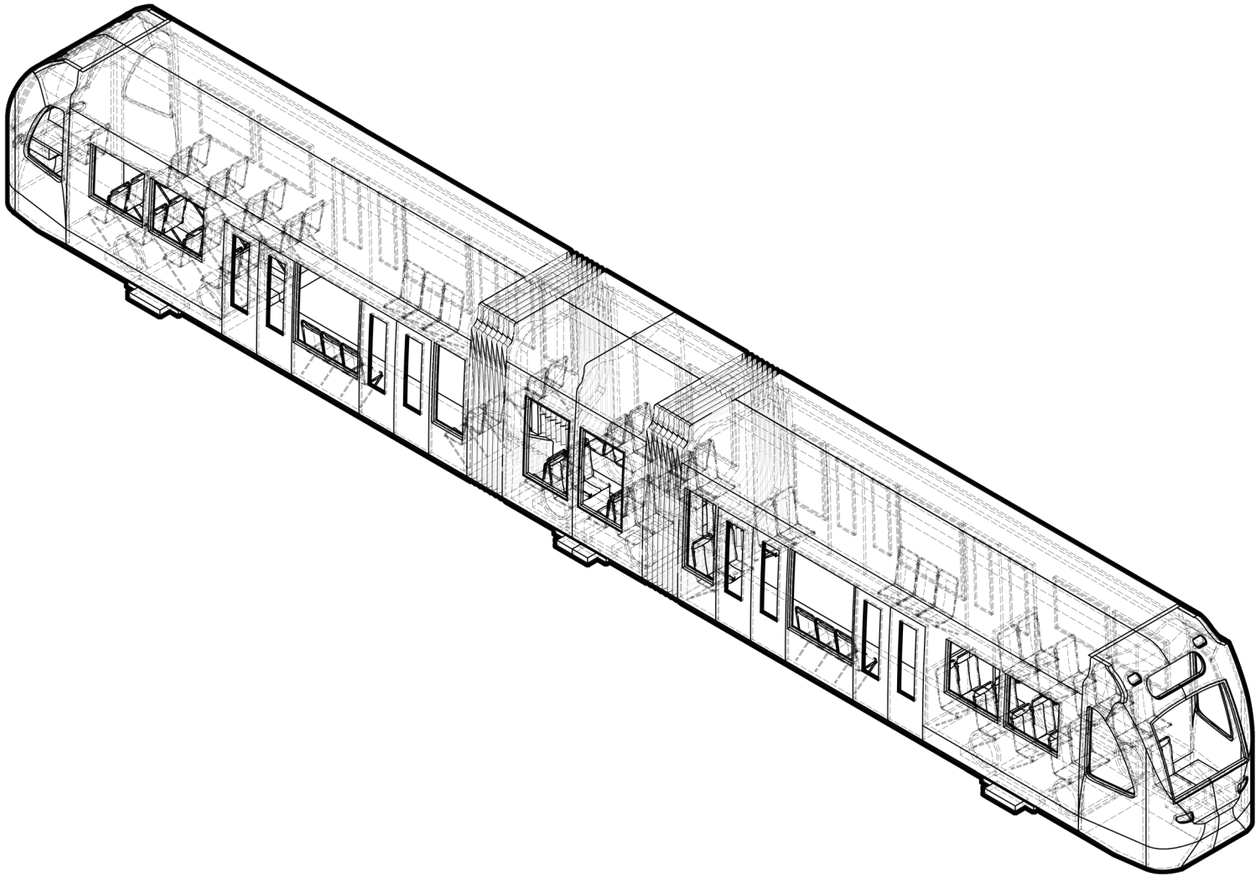
Seattle Tacoma Intl. Airport

Shown w/ Projected Additions, Parking Ramp and Railway Connection



Sea-Tac Metro Light Rail

Sound Transit | Siemens S70



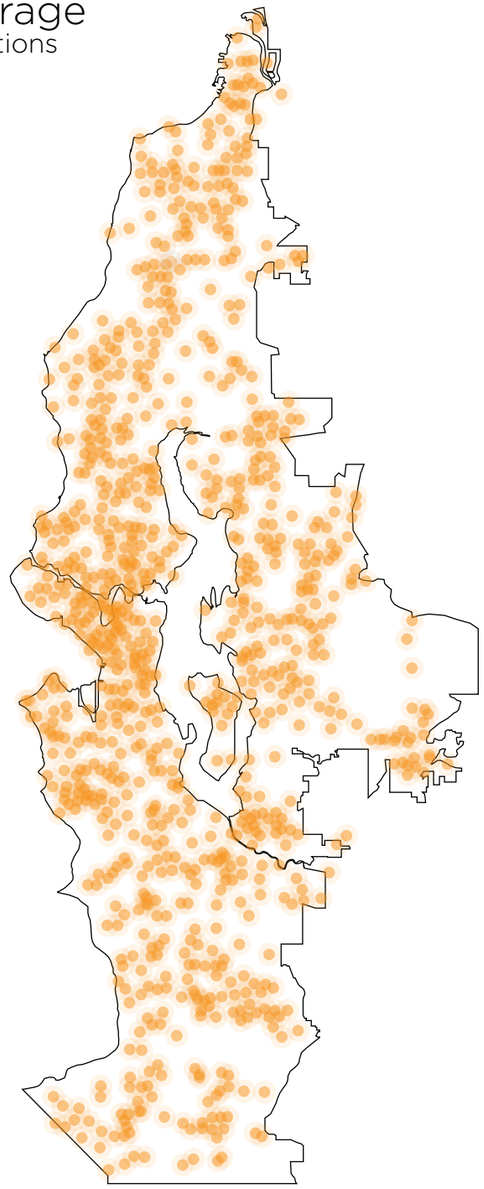
Seattle Metro Coverage

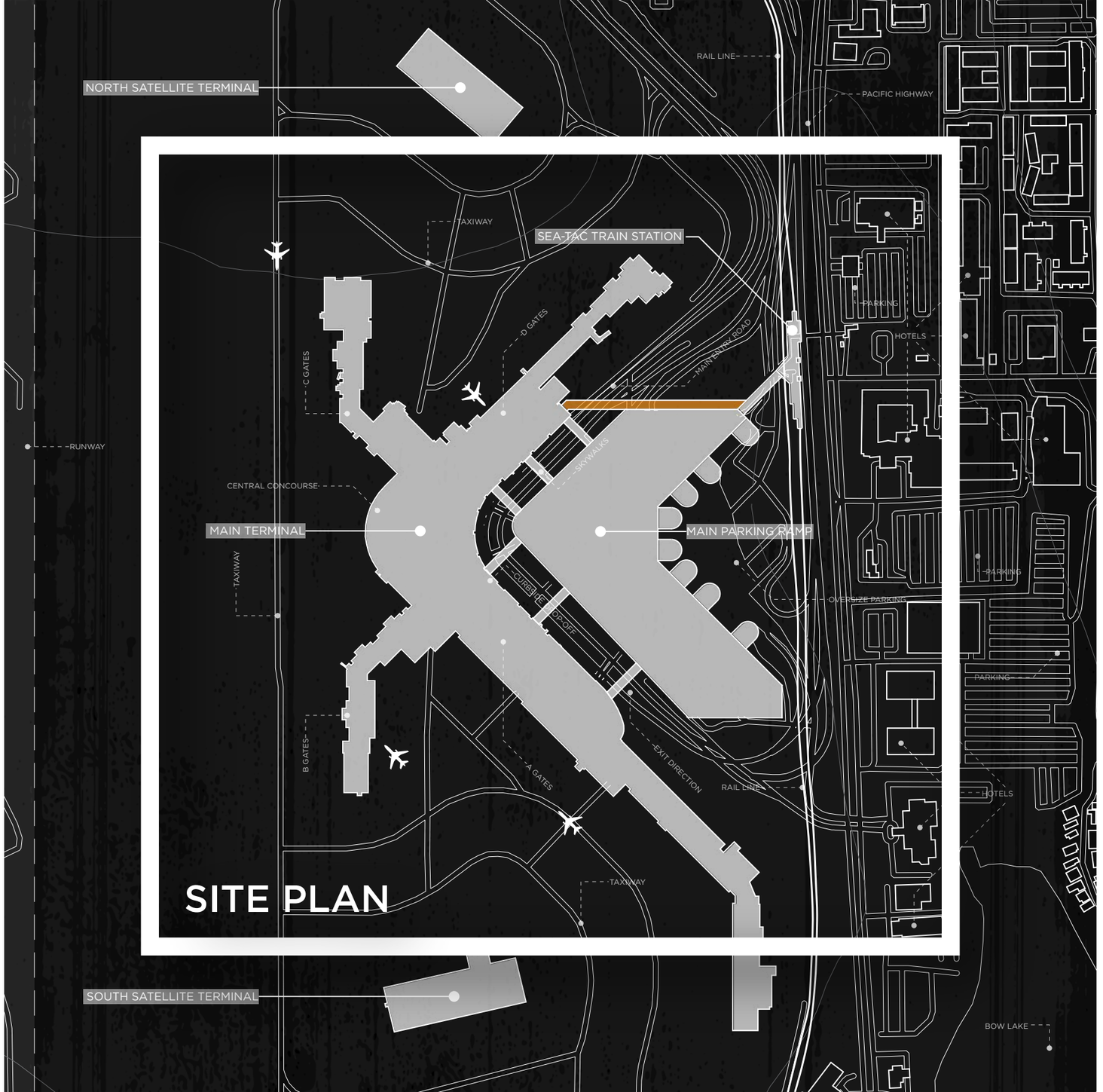
Public Transportation Stations

Scale in miles 0 1 2 5

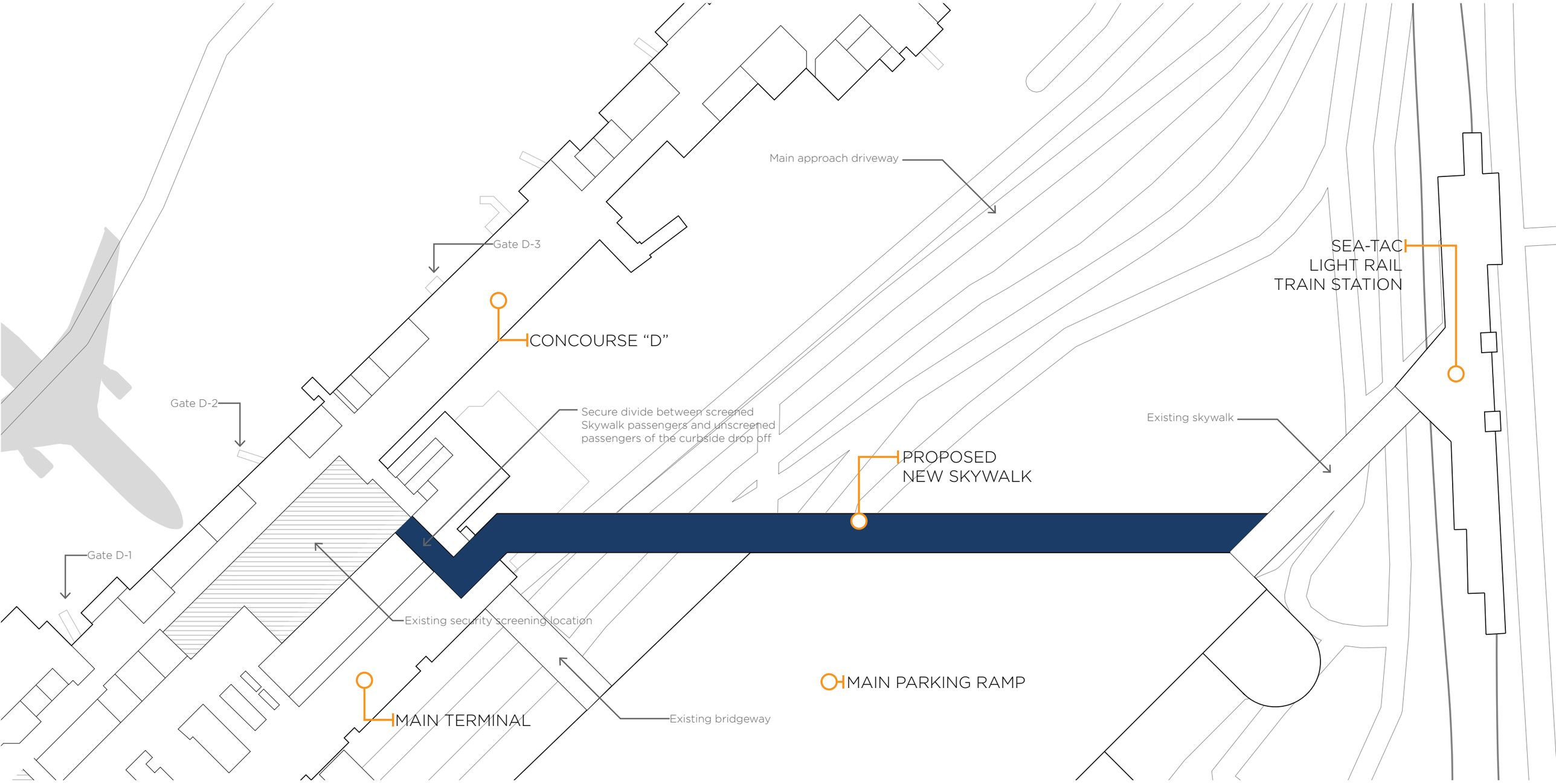
Qaurter mile radius

Half mile radius



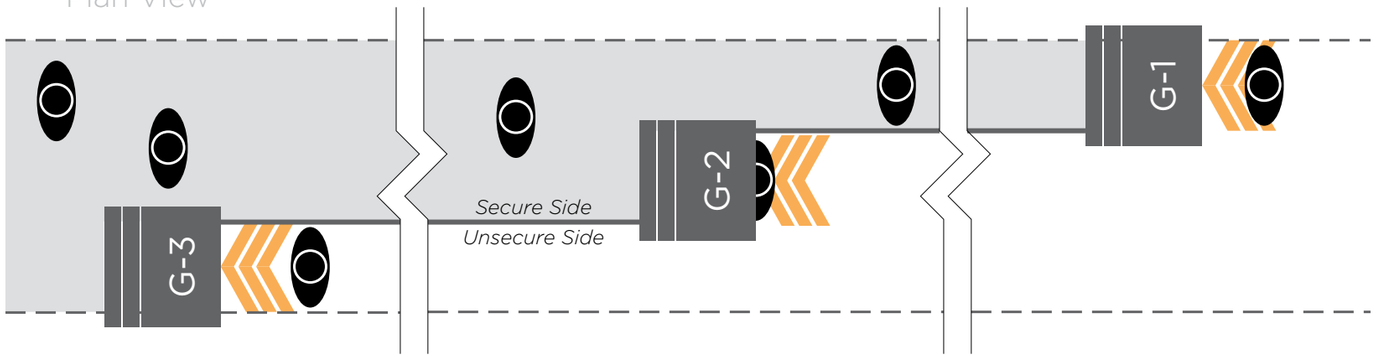

NORTH SATELLITE TERMINAL
RAIL LINE
PACIFIC HIGHWAY
TAXIWAY
SEA-TAC TRAIN STATION
PARKING
HOTELS
C GATES
D GATES
MAIN ENTRY ROAD
RUNWAY
SKYWALKS
CENTRAL CONCOURSE
MAIN TERMINAL
MAIN PARKING RAMP
TAXIWAY
CURBSIDE
DROP-OFF
PARKING
OVERSIZE PARKING
PARKING
B GATES
A GATES
EXIT DIRECTION
RAIL LINE
HOTELS
TAXIWAY
SOUTH SATELLITE TERMINAL
BOW LAKE
SITE PLAN

SEA-TAC SKYWALK

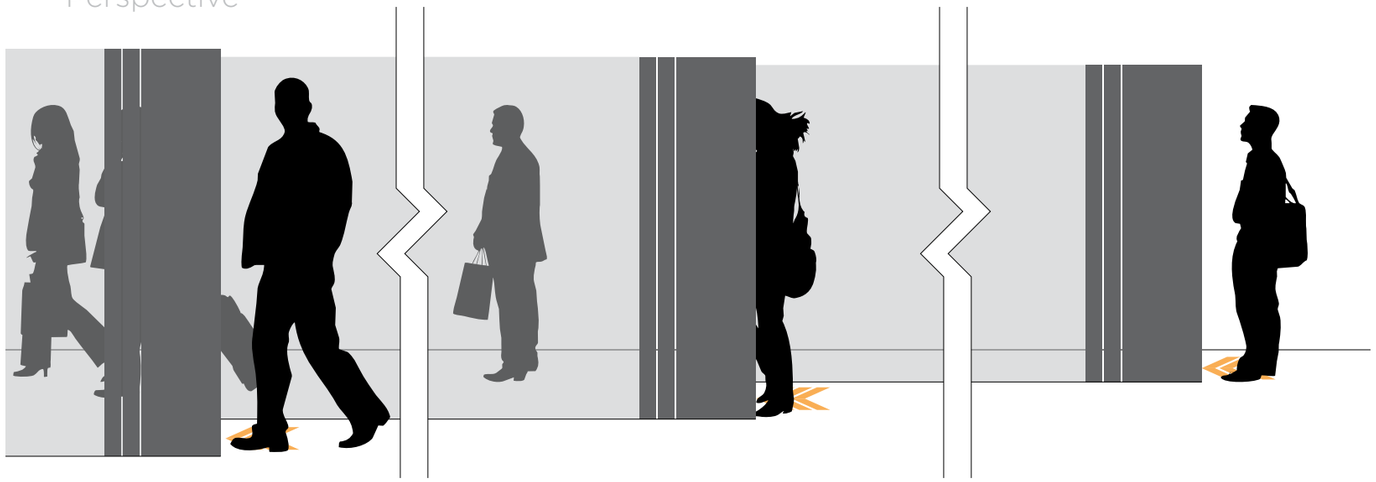


Skywalk Screening Gates Concept

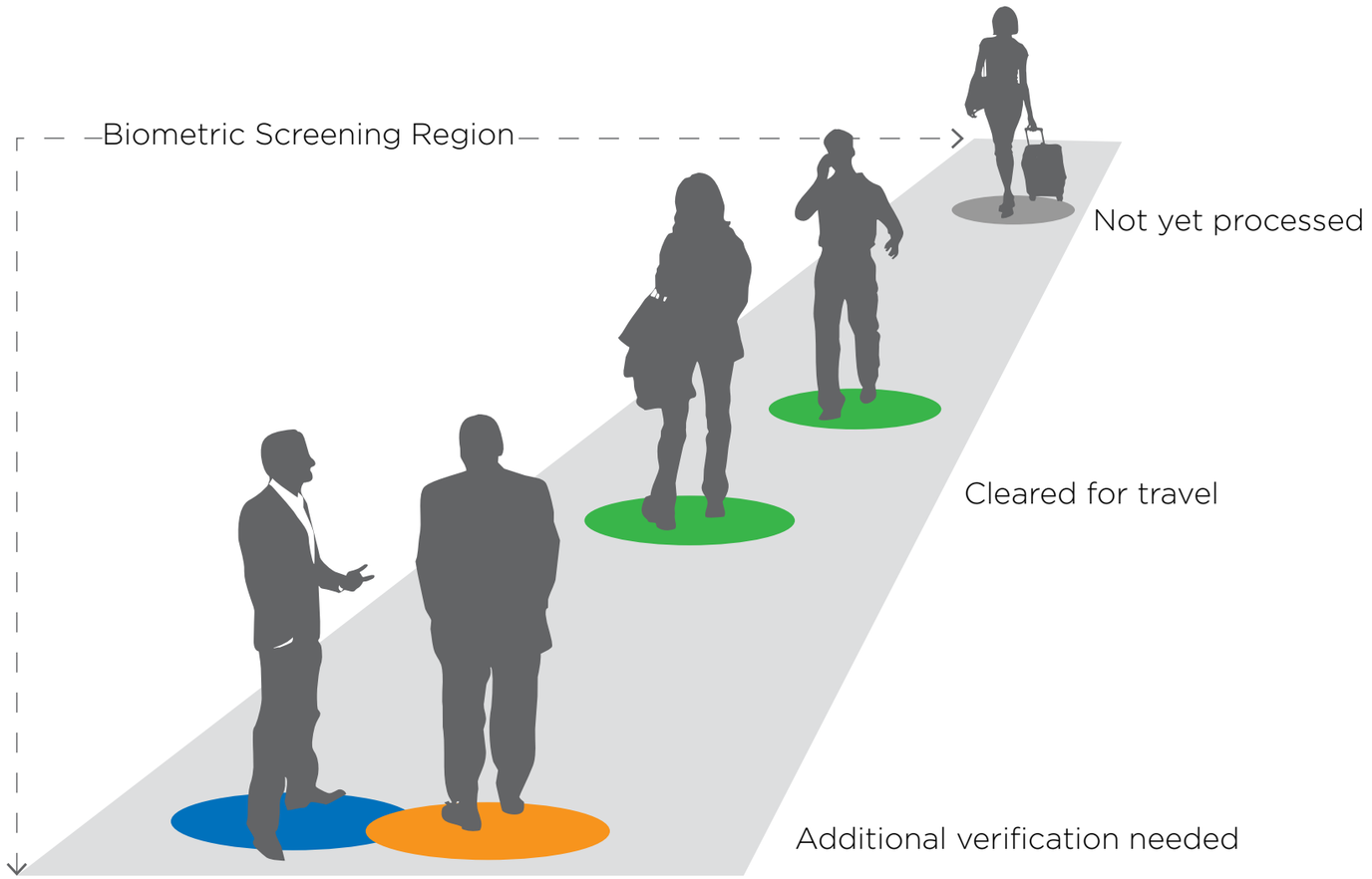
Plan View



Perspective

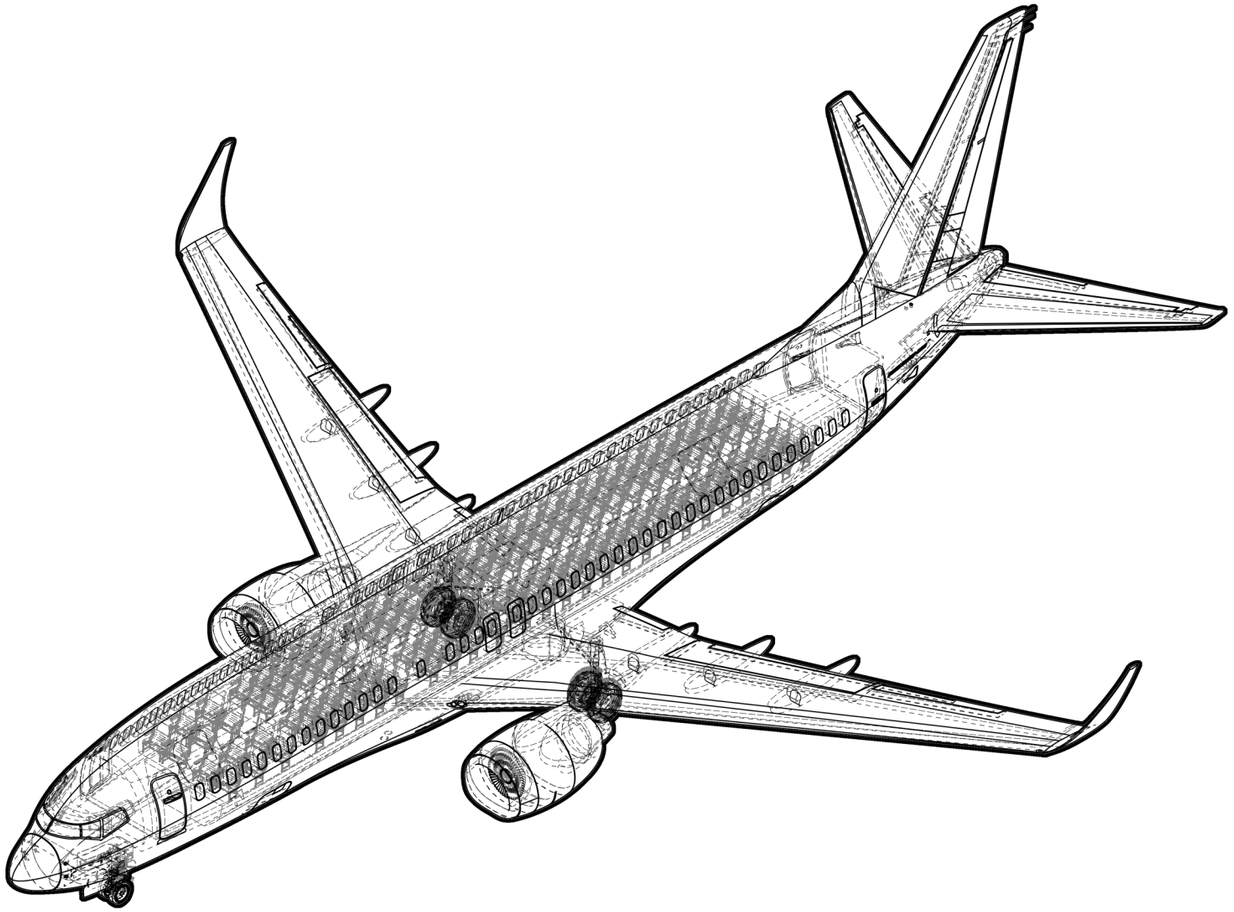


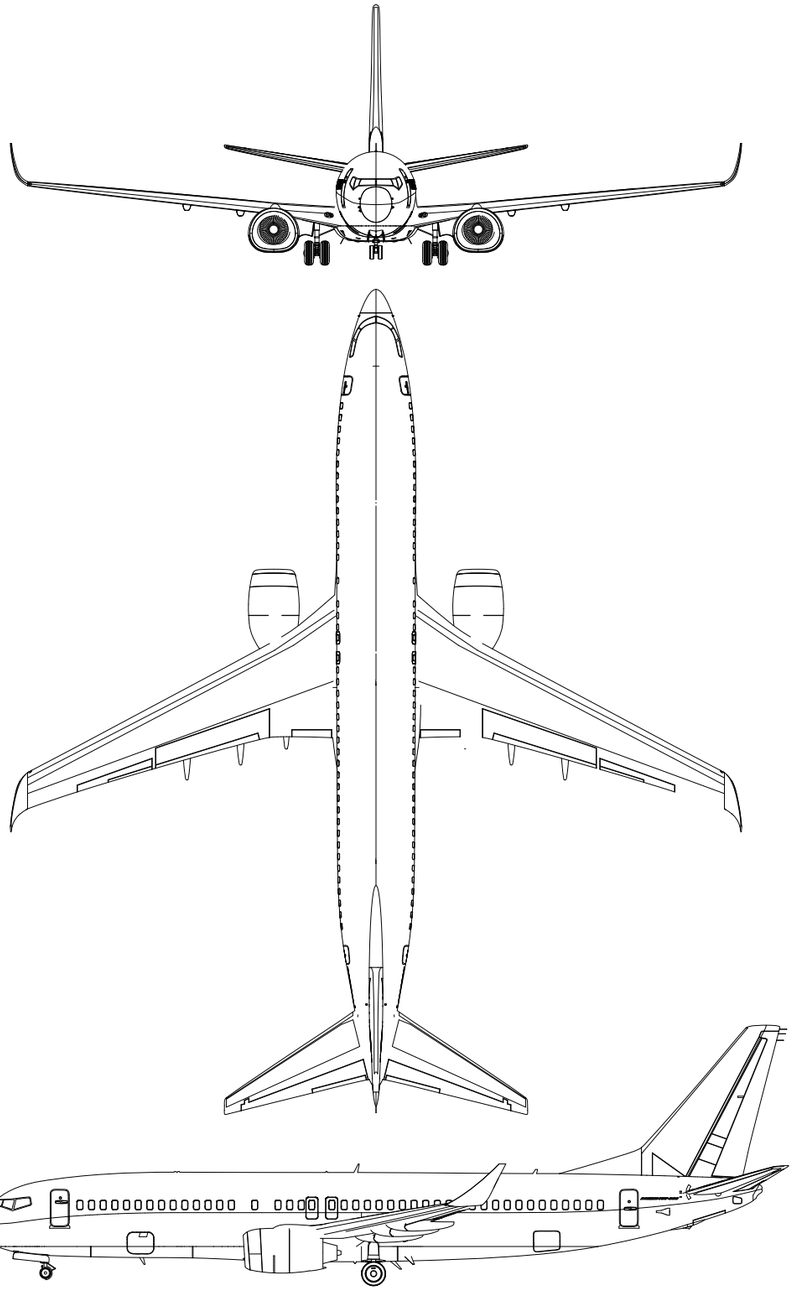
Passenger Halo Security Indicator



Boeing 737-800 Series

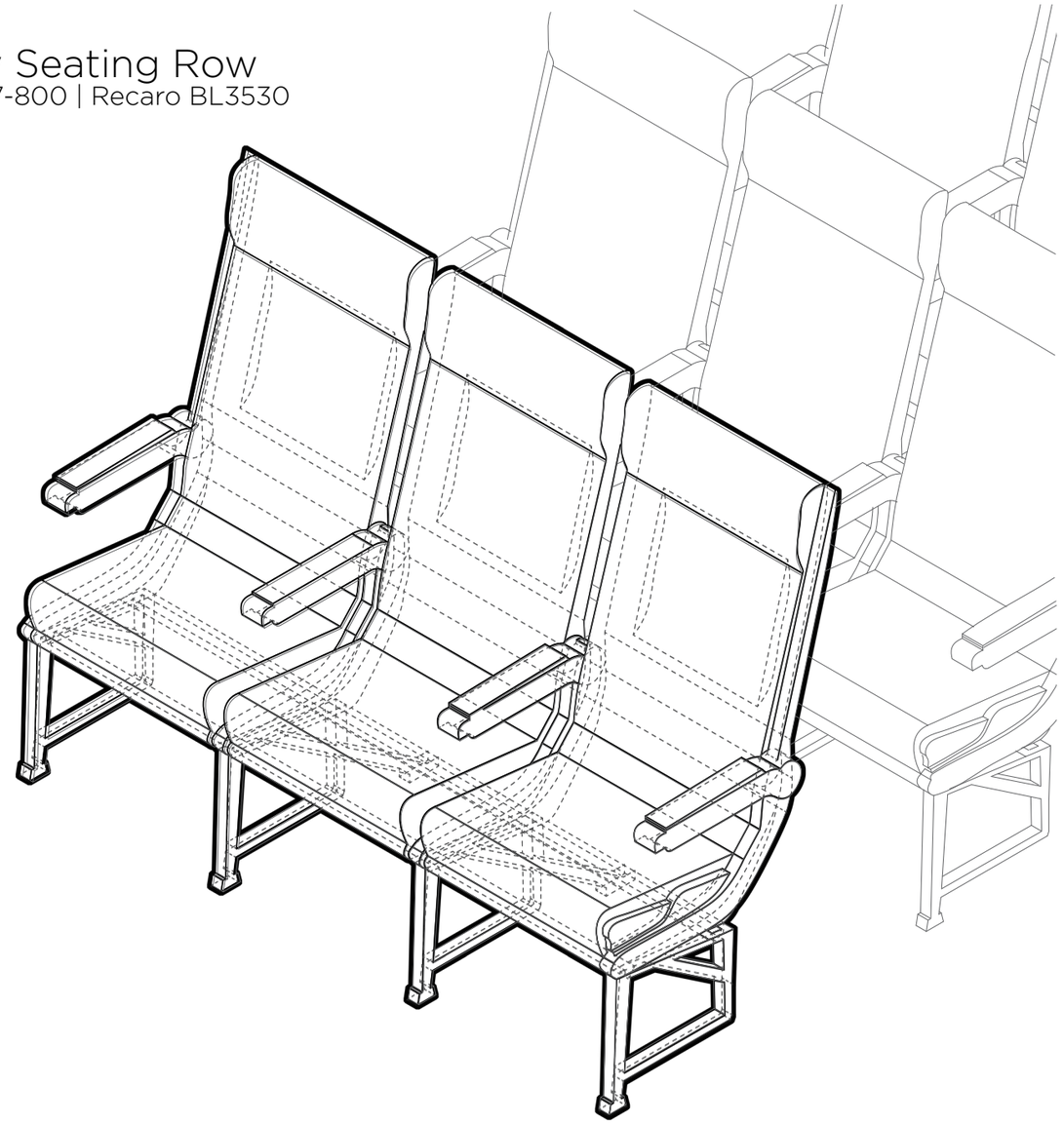
Alaska Airlines | Passenger Aircraft

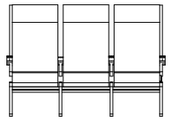


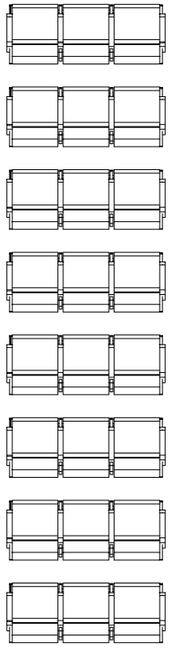


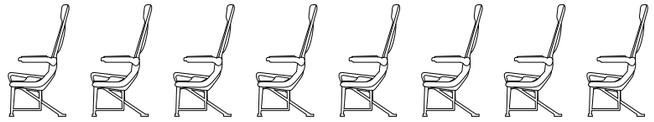
Economy Seating Row

Boeing 737-800 | Recaro BL3530

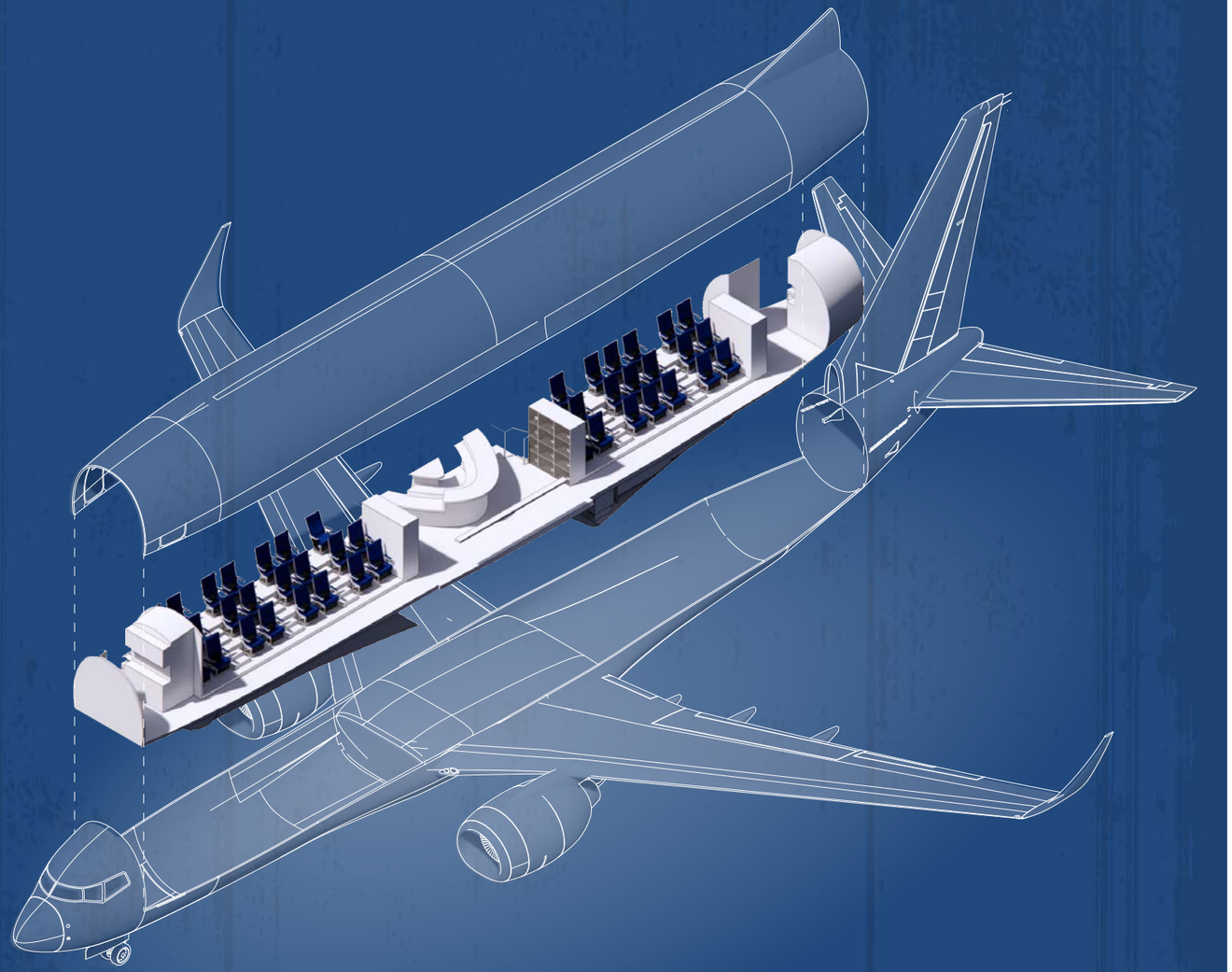




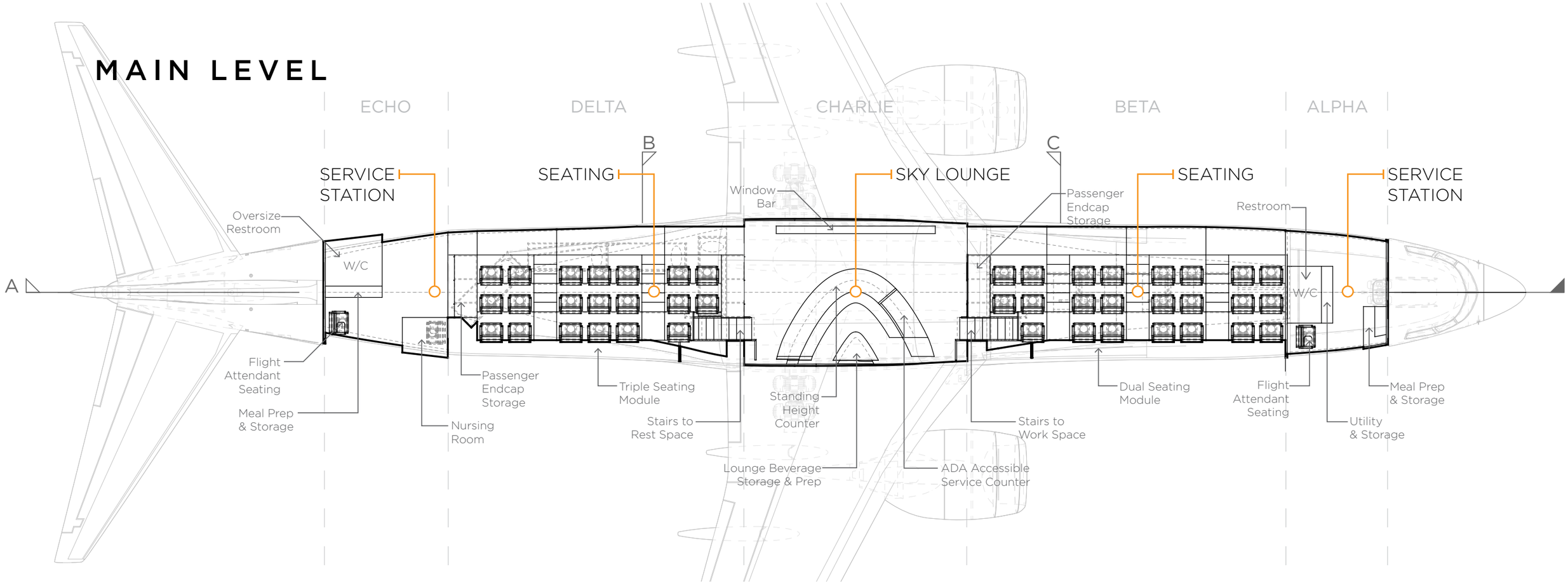




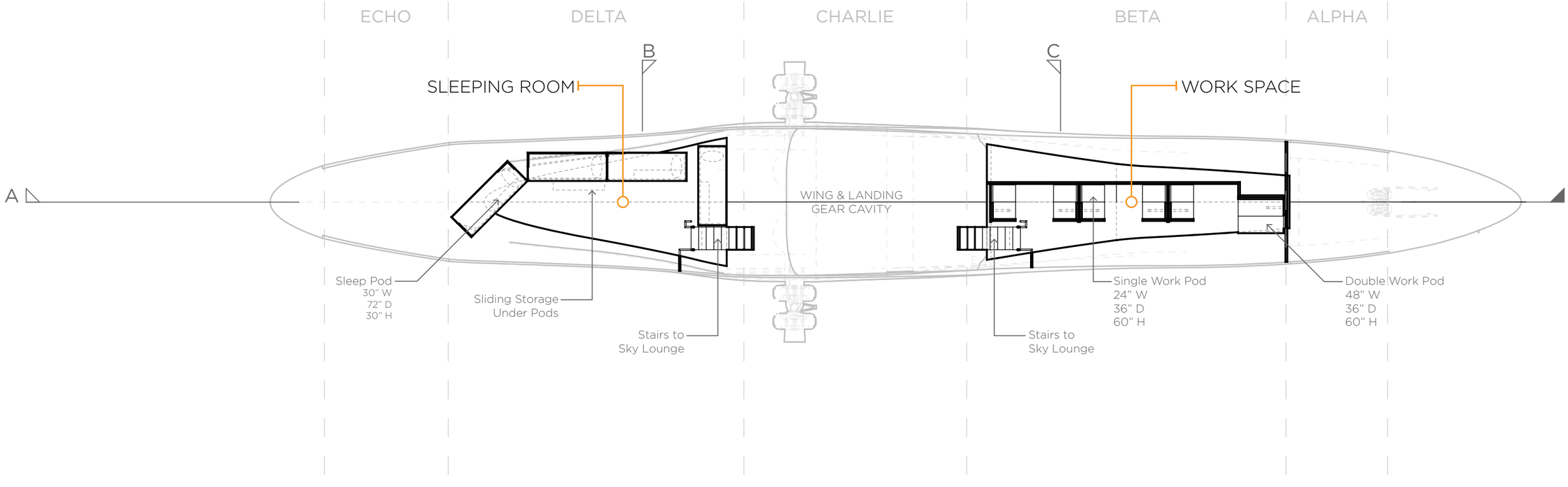
THE NEWLY REDESIGNED BOEING 737-800



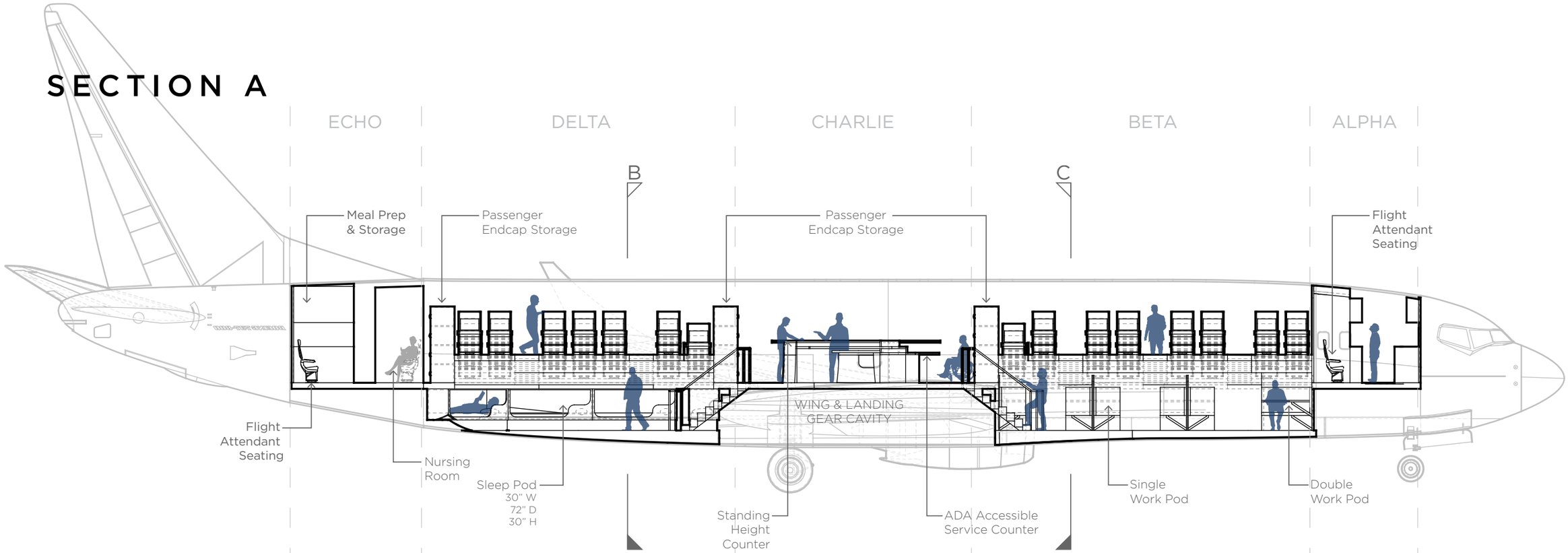
MAIN LEVEL


ECHO
DELTA
CHARLIE
BETA
ALPHA
A
B
C
SERVICE STATION
SEATING
SKY LOUNGE
SEATING
SERVICE STATION
Oversize Restroom
W/C
Flight Attendant Seating
Meal Prep & Storage
Nursing Room
Passenger Endcap Storage
Triple Seating Module
Stairs to Rest Space
Window Bar
Standing Height Counter
Lounge Beverage Storage & Prep
ADA Accessible Service Counter
Passenger Endcap Storage
Stairs to Work Space
Dual Seating Module
Restroom
W/C
Flight Attendant Seating
Utility & Storage
Meal Prep & Storage

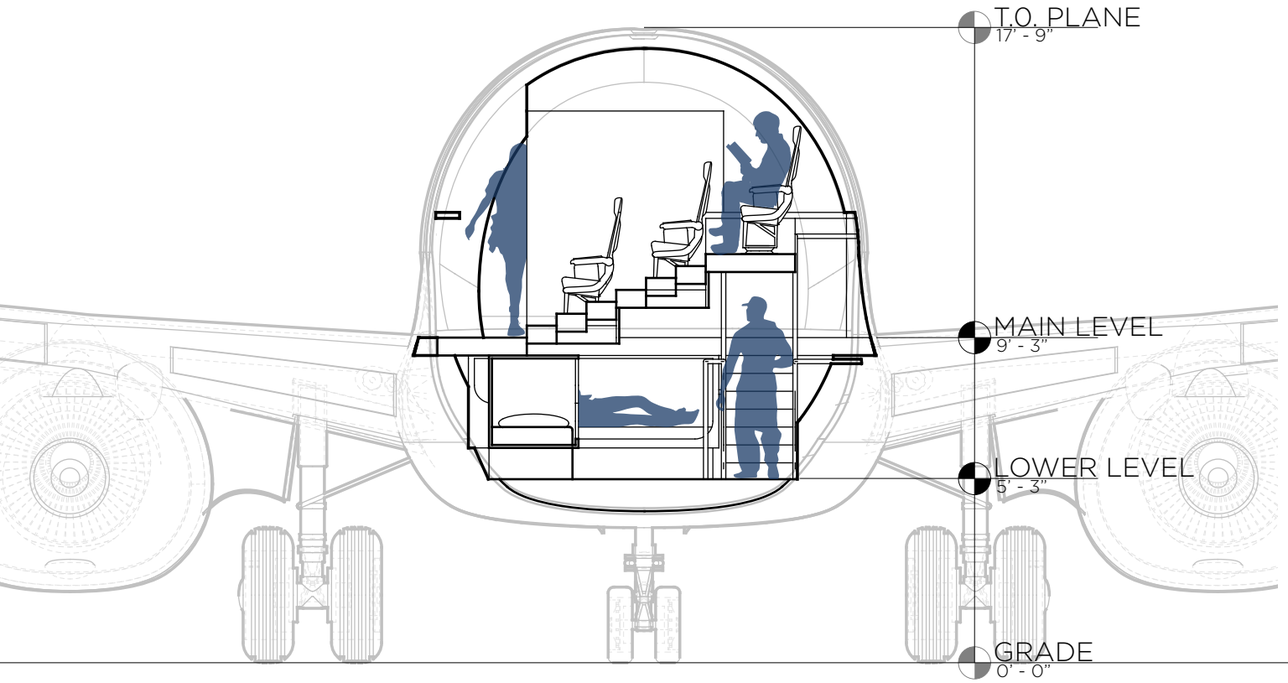
LOWER LEVEL


ECHO
DELTA
CHARLIE
BETA
ALPHA
A
B
C
SLEEPING ROOM
WORK SPACE
WING & LANDING
GEAR CAVITY
Sleep Pod
30" W
72" D
30" H
Sliding Storage
Under Pods
Stairs to
Sky Lounge
Stairs to
Sky Lounge
Single Work Pod
24" W
36" D
60" H
Double Work Pod
48" W
36" D
60" H

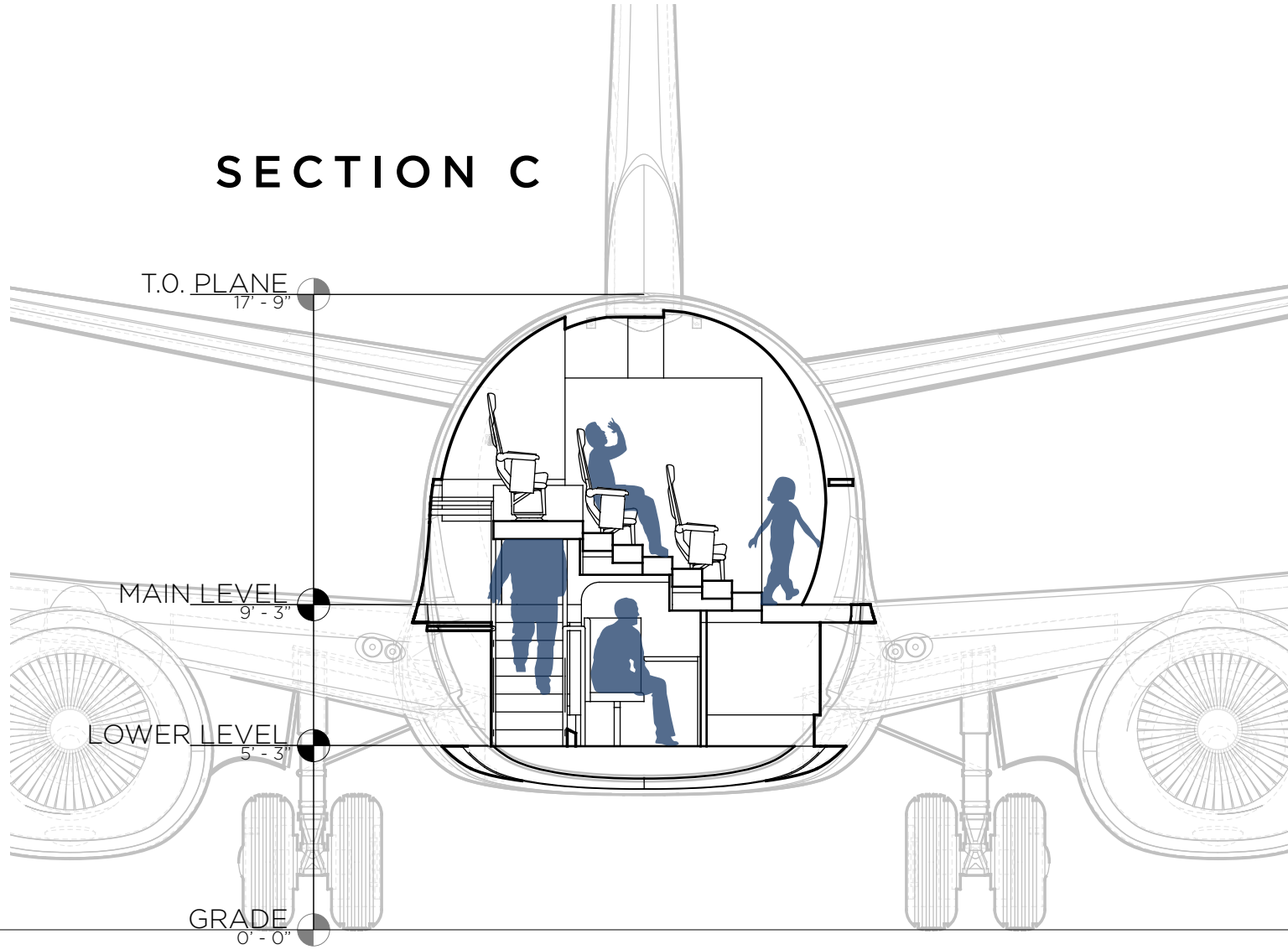
SECTION A


ECHO
DELTA
CHARLIE
BETA
ALPHA
B
C
Meal Prep & Storage
Passenger Endcap Storage
Passenger Endcap Storage
Flight Attendant Seating
WING & LANDING GEAR CAVITY
Flight Attendant Seating
Nursing Room
Sleep Pod
30" W
72" D
30" H
Standing Height Counter
ADA Accessible Service Counter
Single Work Pod
Double Work Pod

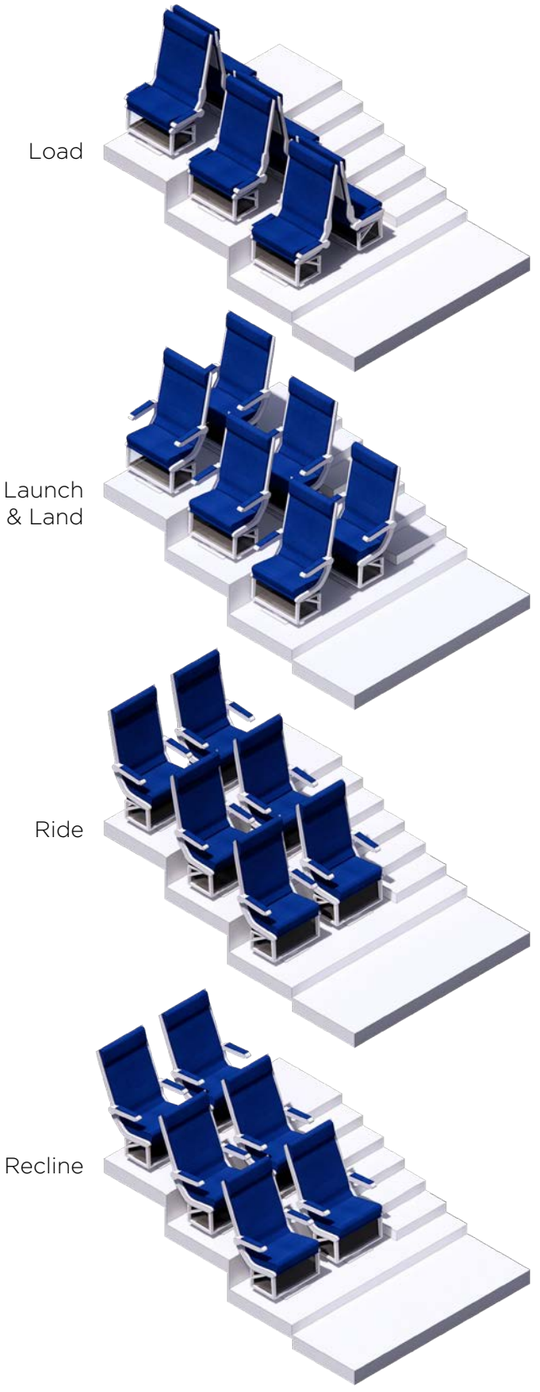
SECTION B

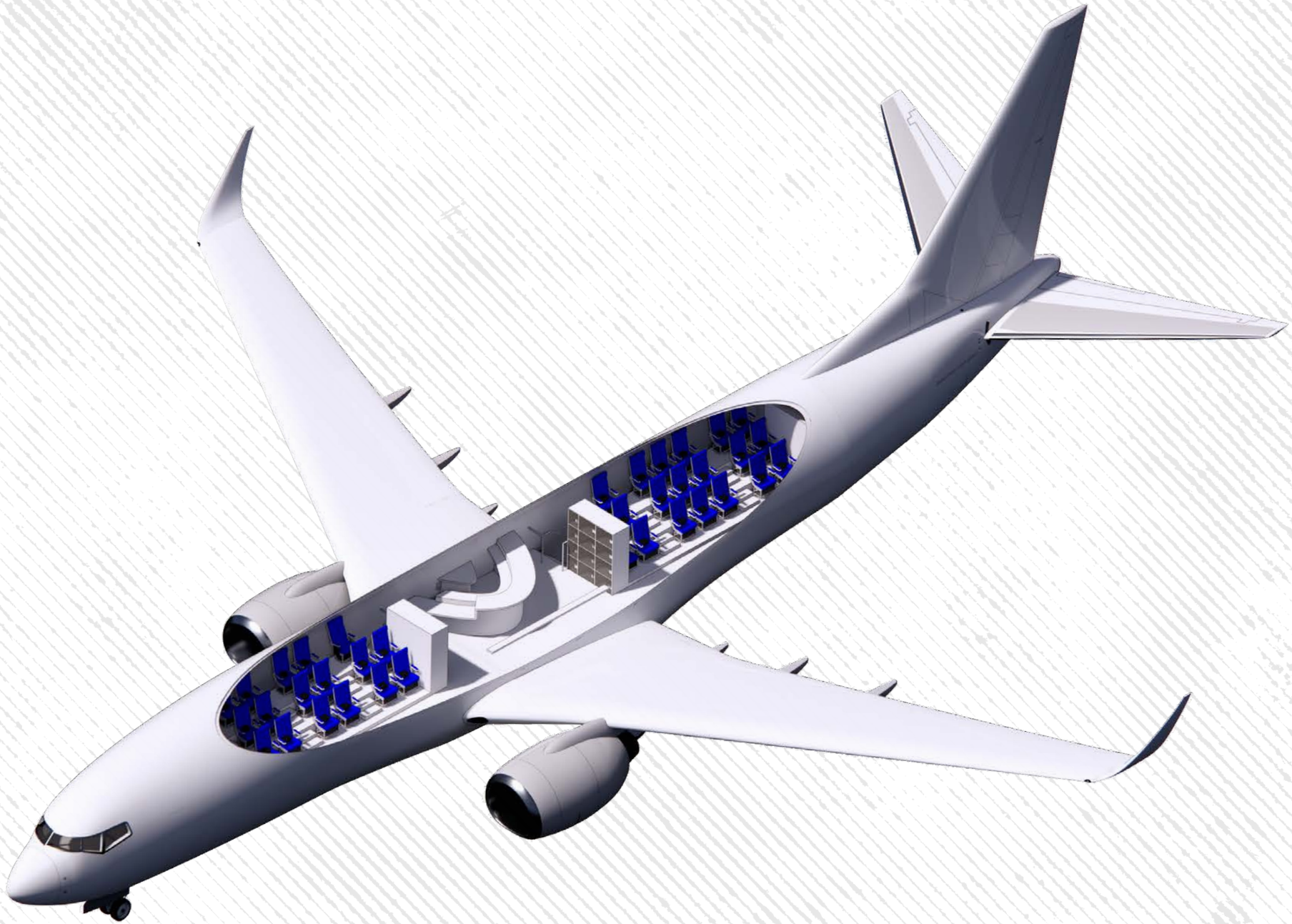


SECTION C



REDESIGNED PASSENGER SEATING





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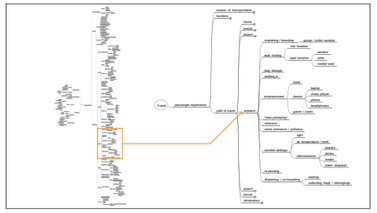

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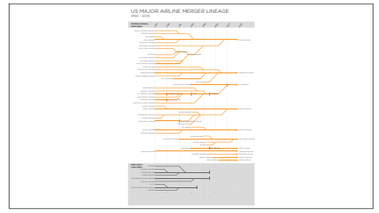

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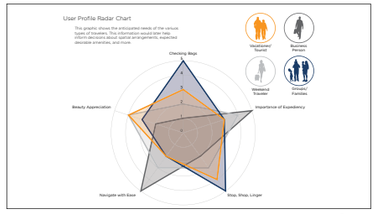

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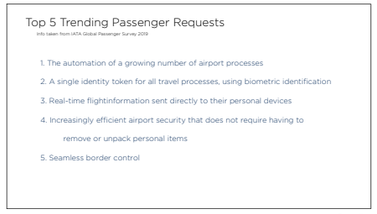

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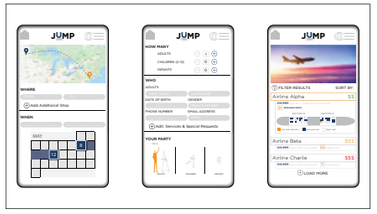

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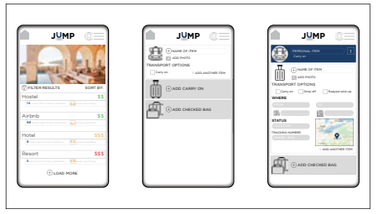

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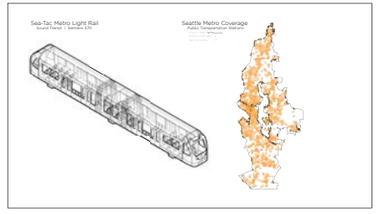

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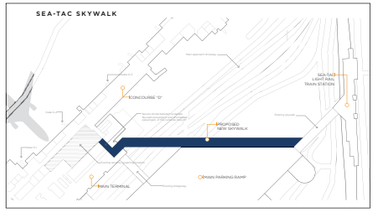

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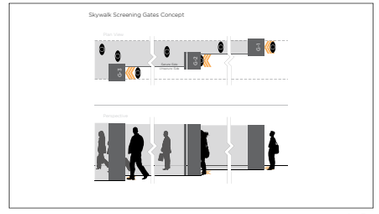

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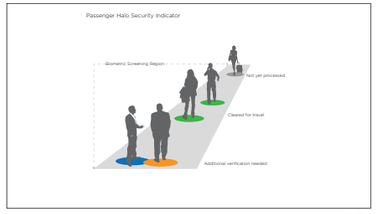

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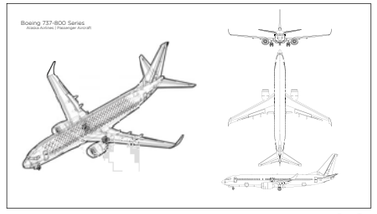

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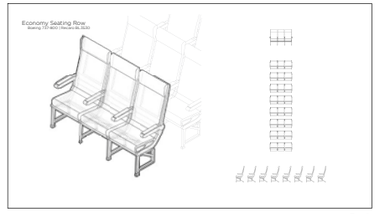

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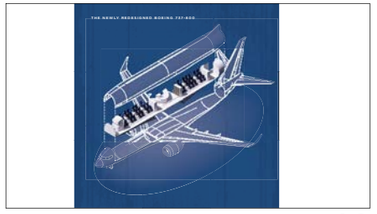

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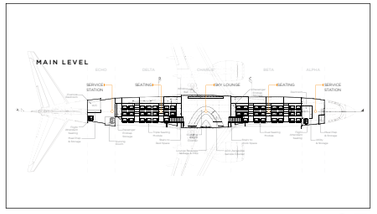

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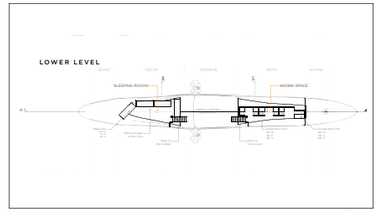

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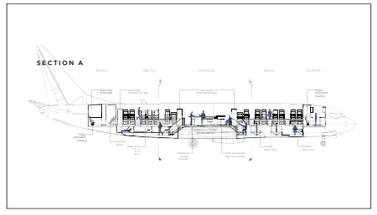

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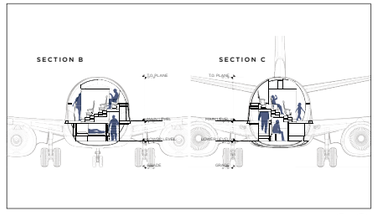

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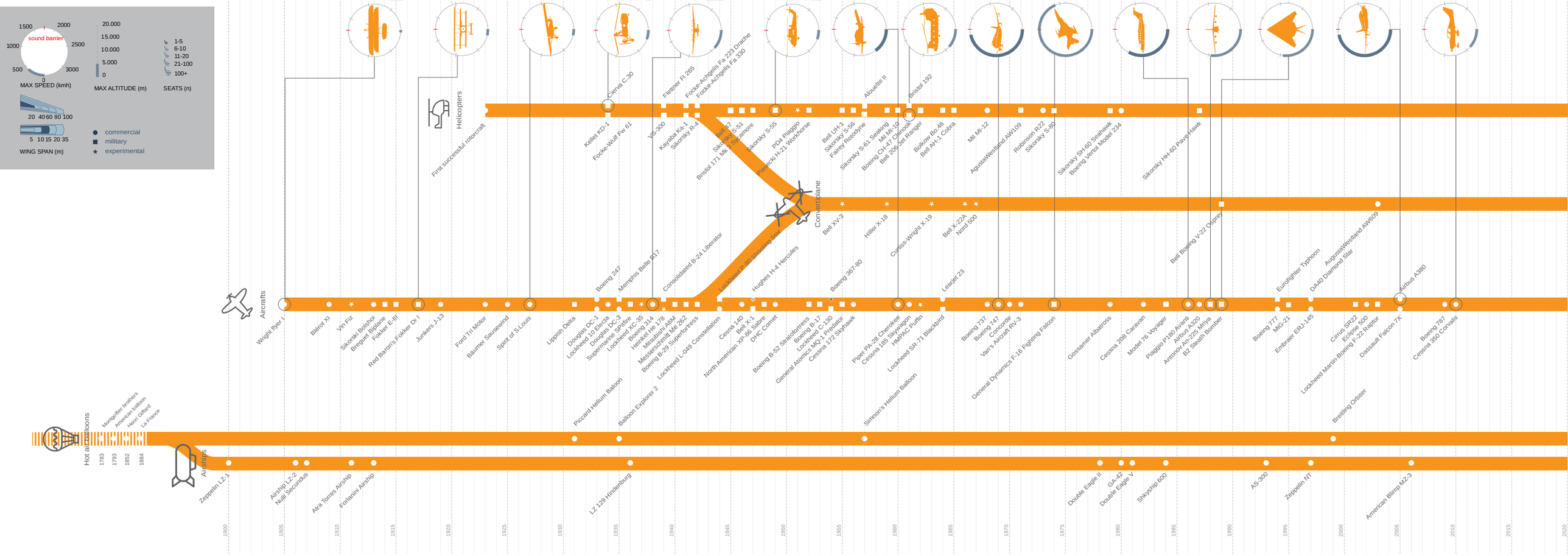
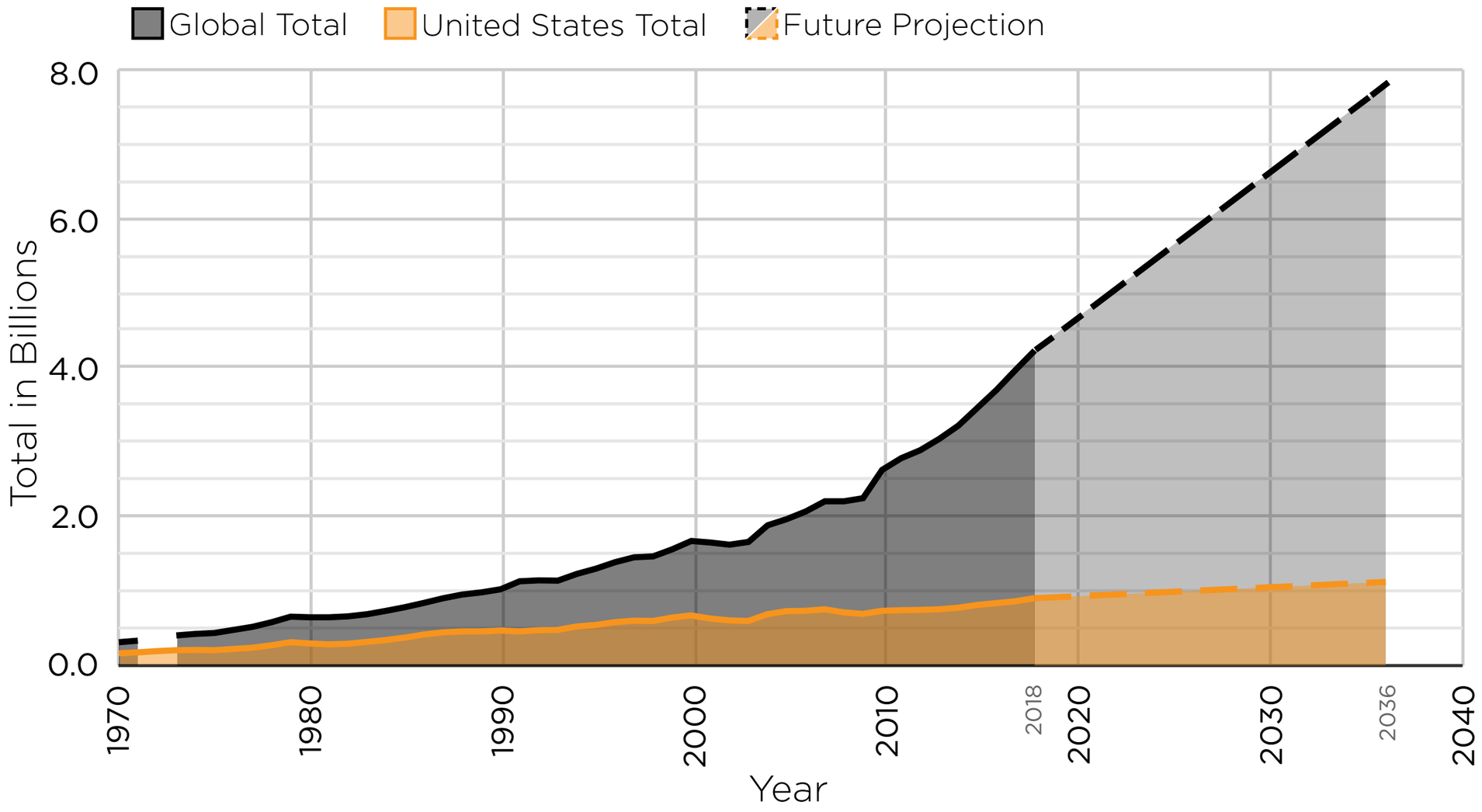
History of aviation



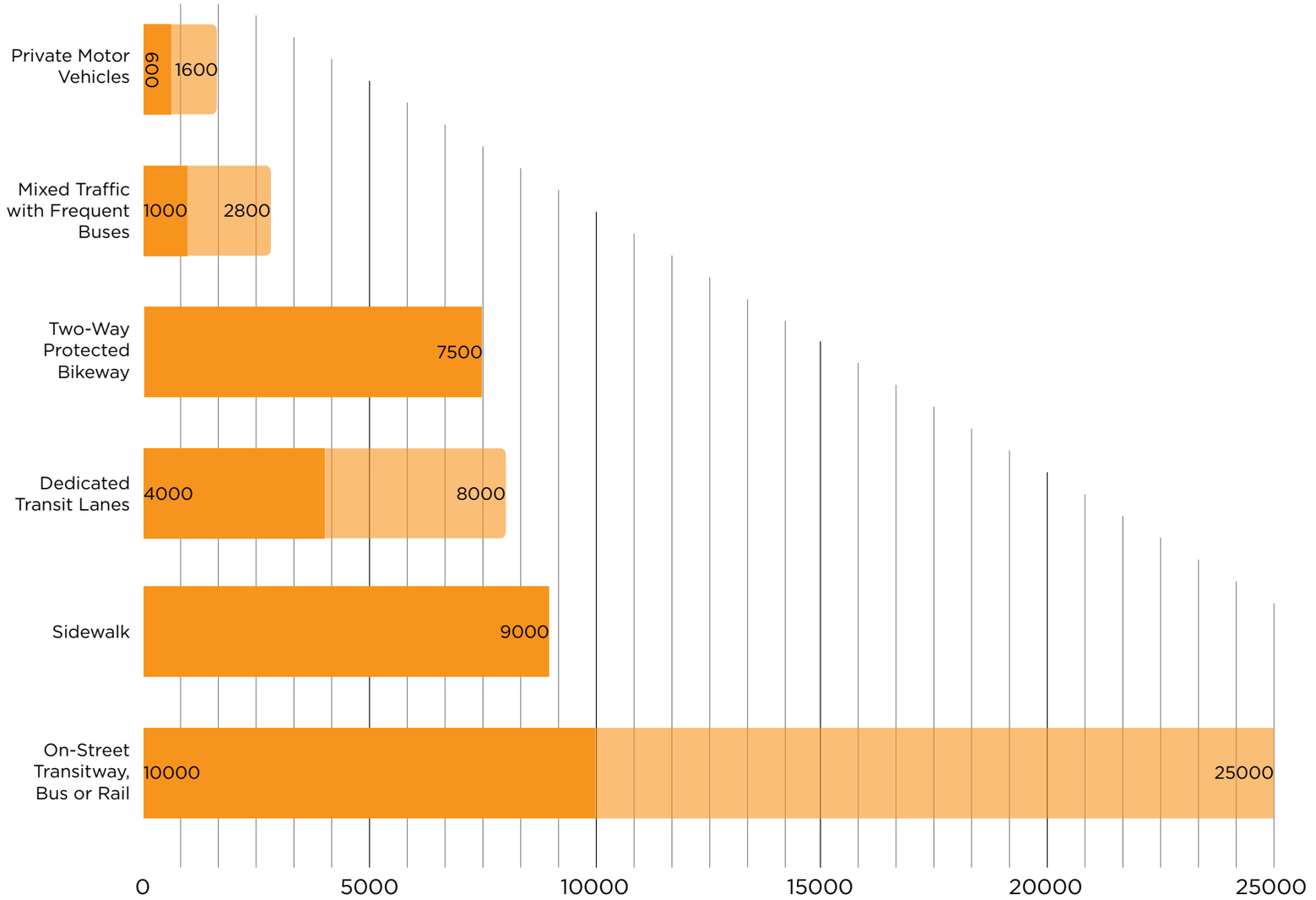
Annual Passengers Worldwide

1970-2018 with Projection of 2036



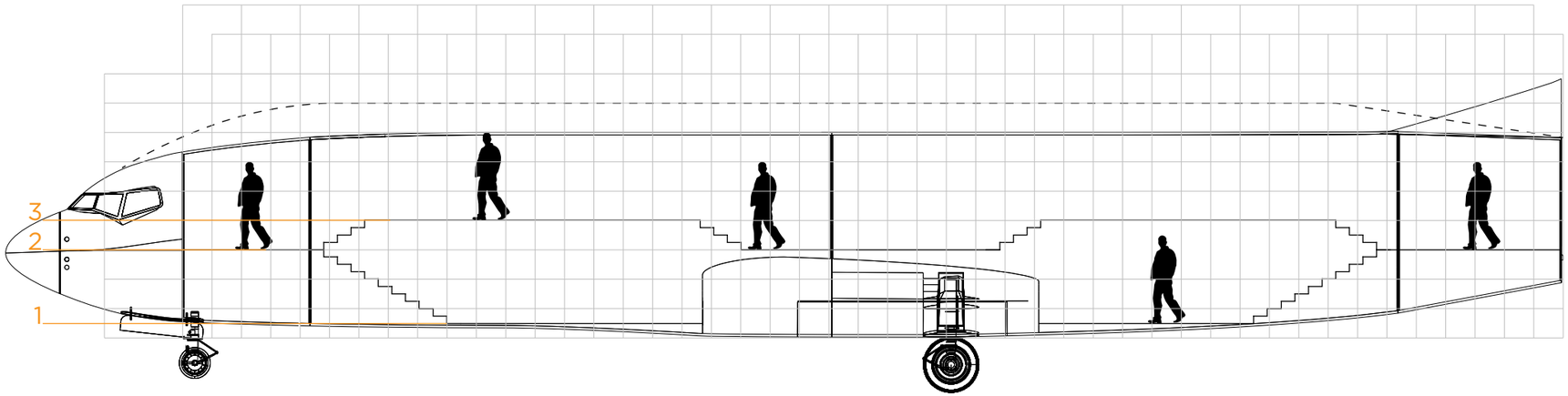
Transportation Rate by Vehicle Type

The capacity of a single 10-foot lane by mode at peak conditions.
Shown as Passengers per Mode per Hour



Process Section Floor Plates

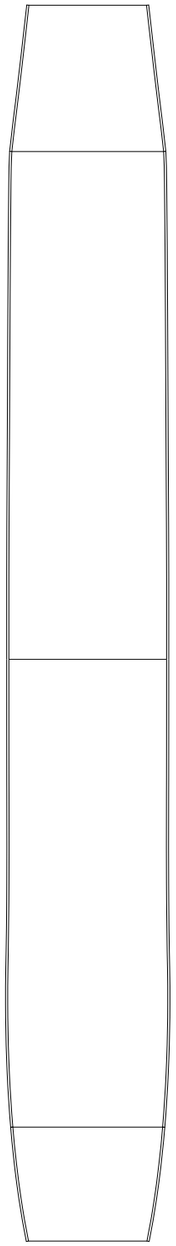
4.18.2020



10’

Process Floor Plan Areas

4.18.2020



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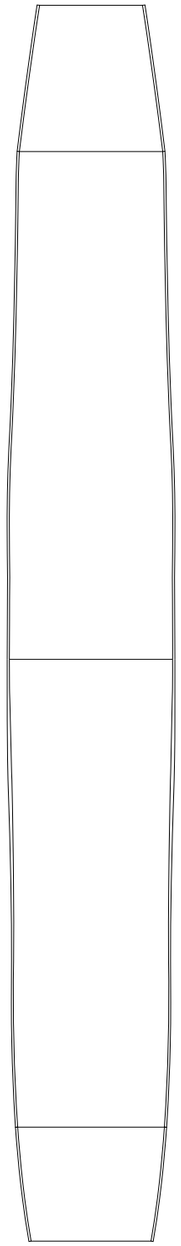

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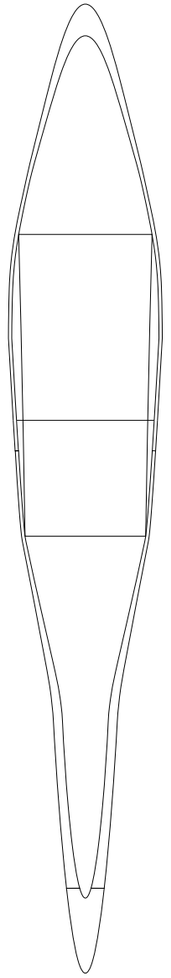
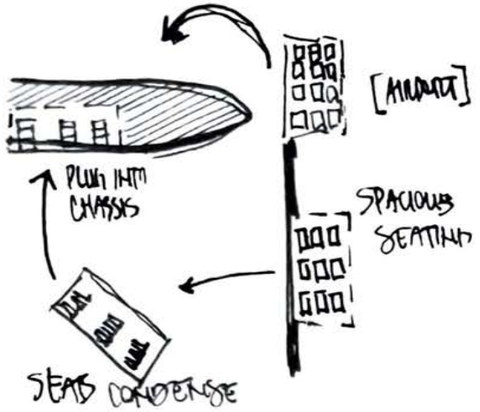


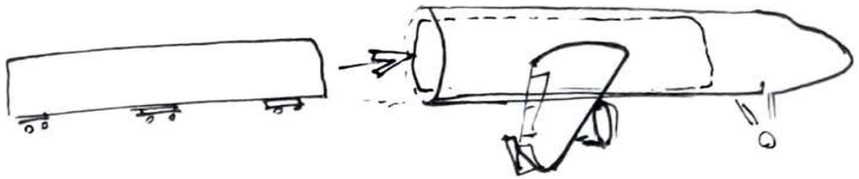
1

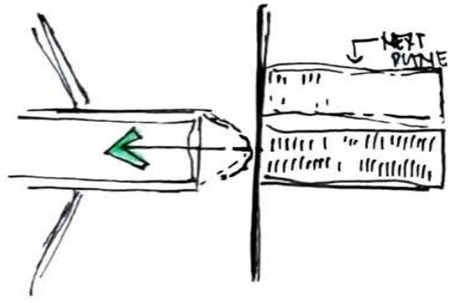
10’

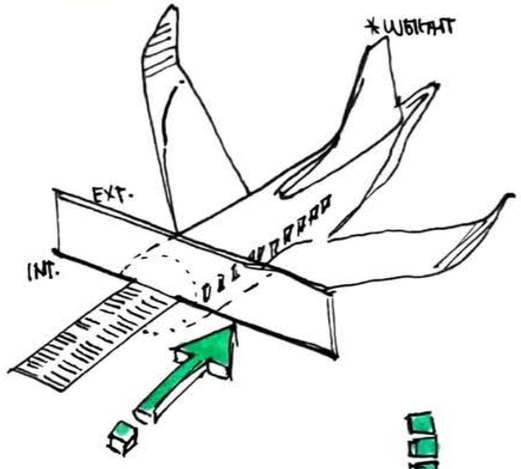
BULLPUP + VEHICLE IDEATION

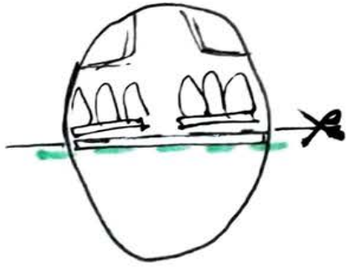
2/25

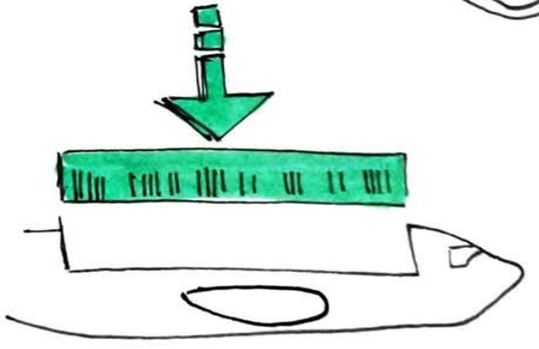


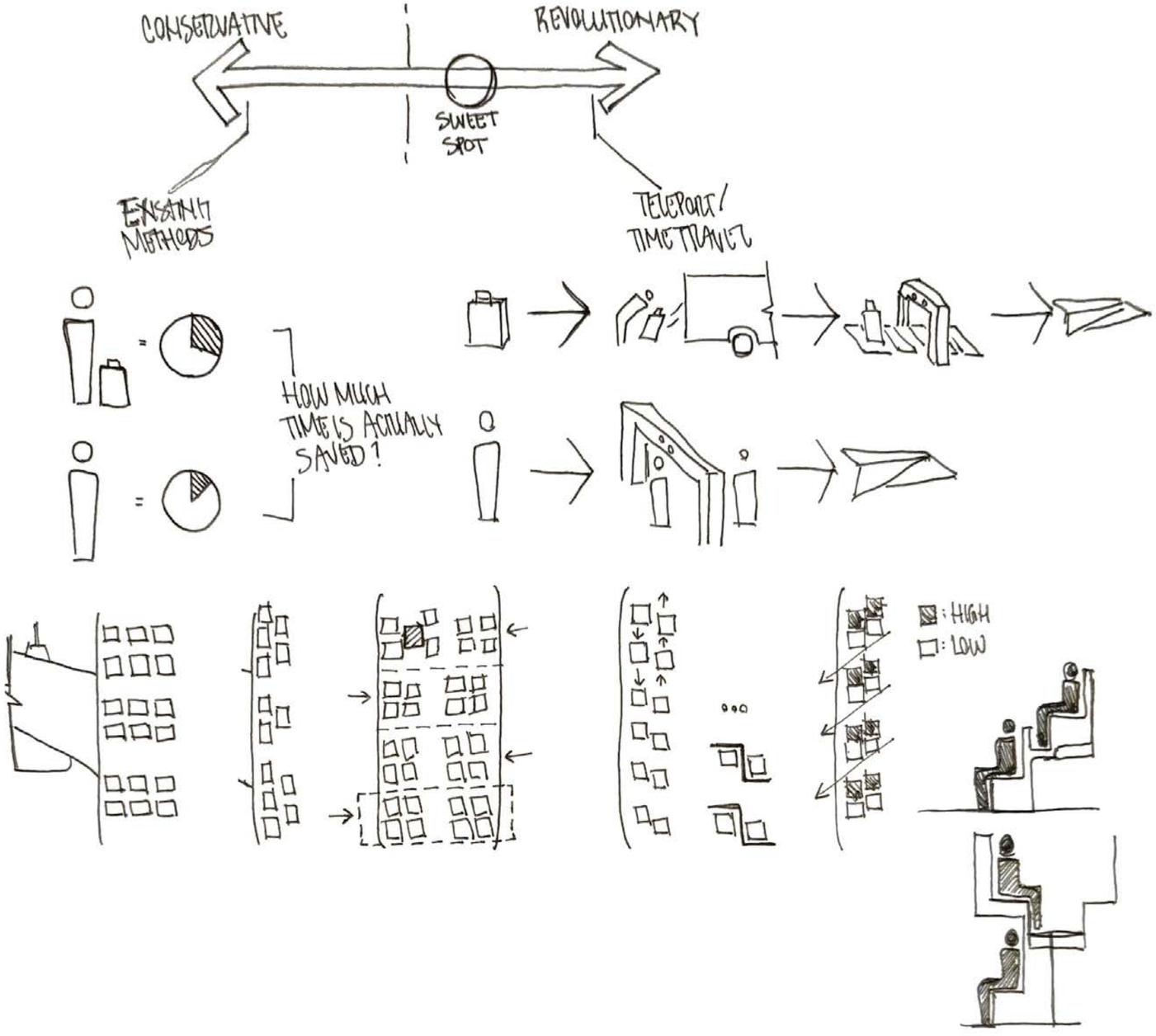


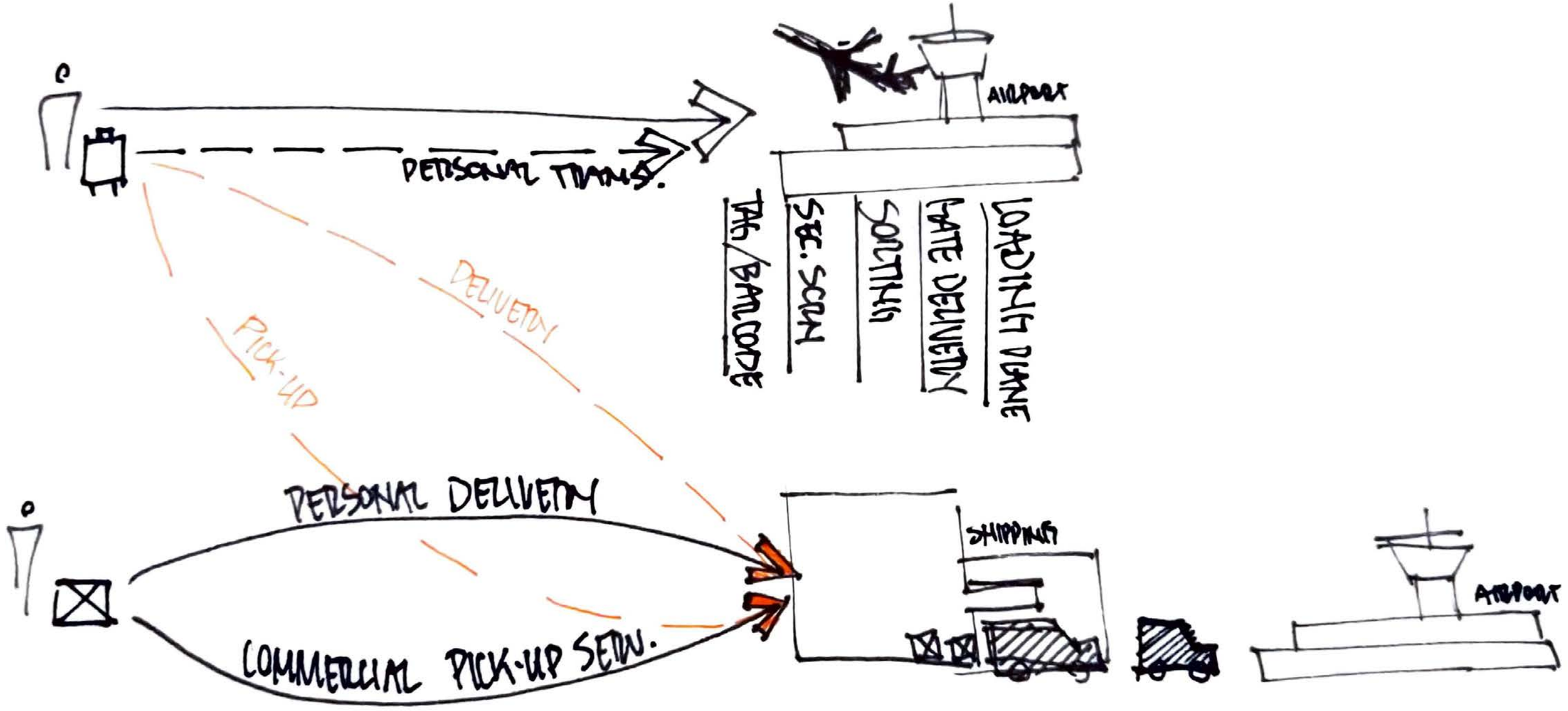






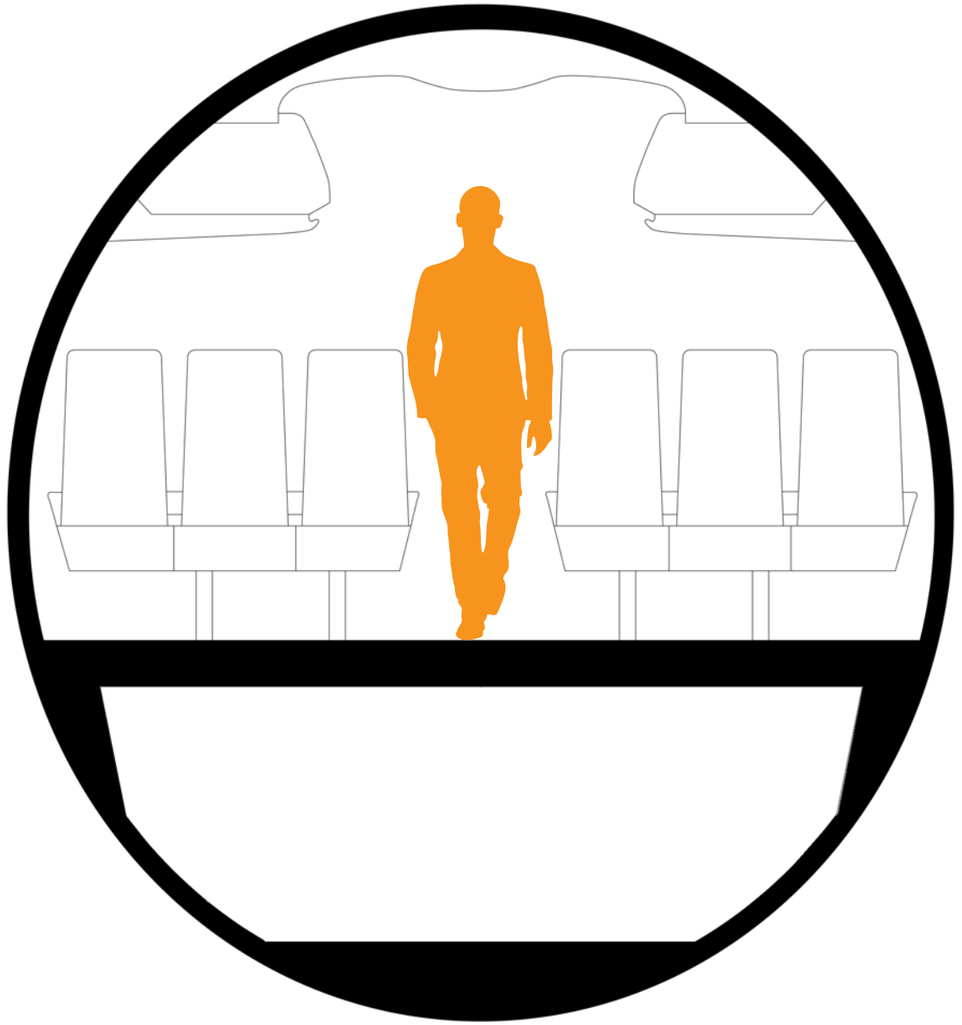


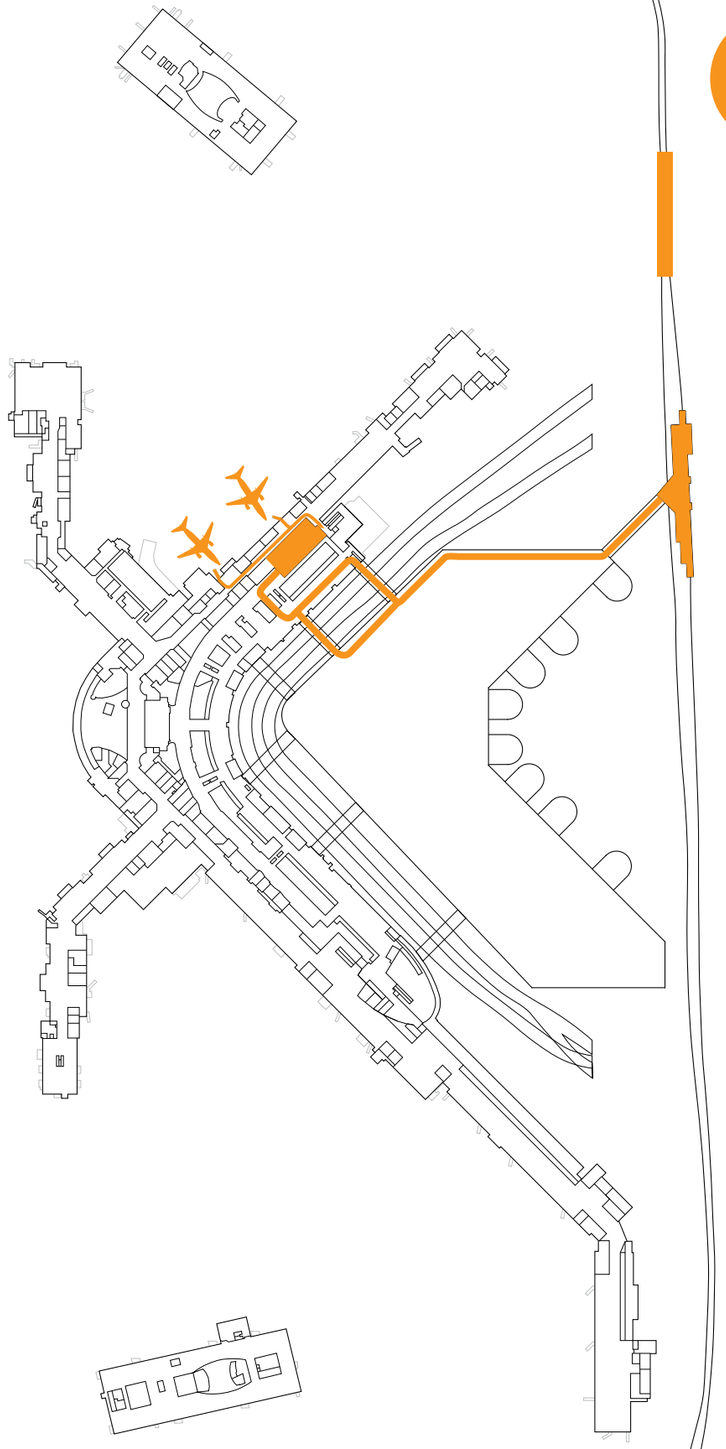

CONSERVATIVE
REVOLUTIONARY
SWEET SPOT
EXISTING METHODS
TELEPORT/ TIME TRAVEL
HOW MUCH TIME IS ACTUALLY SAVED?
: HIGH
: LOW


AIRPORT
PERSONAL TRANS.
DELIVERY
PICK-UP
BAGGAGE/TAG
SEC. SCRN
CONTROL
GATE DELIVERY
LOADING PLANE
PERSONAL DELIVERY
COMMERCIAL PICK-UP SERV.
SHIPPING
AIRPORT

Passegner Cabin Section

Existing Boeing 737

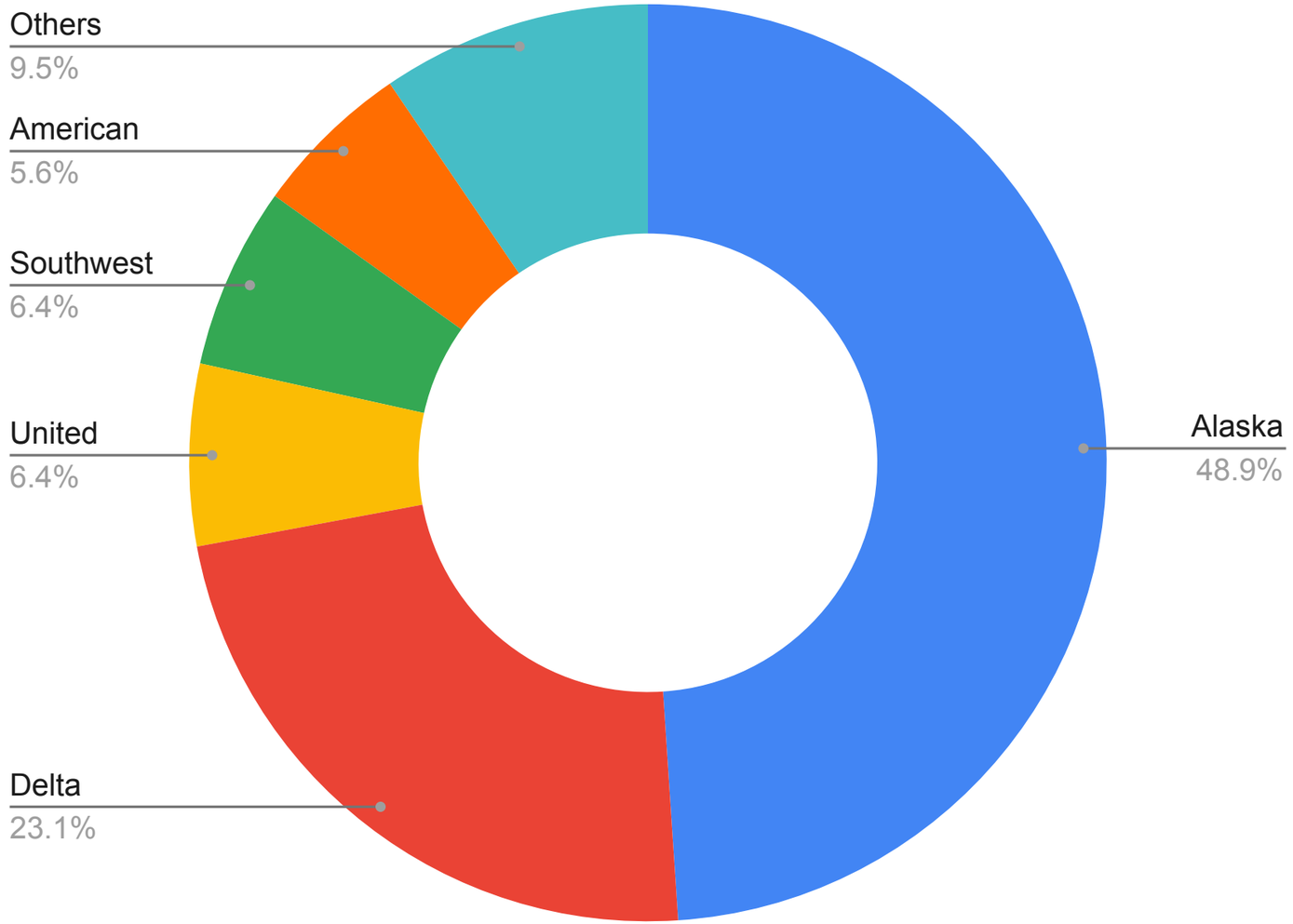




Dedication in 1949

Total Passenger Market Share

Reported Sea-Tac Data from 2018



Top 30 International Airports in the Unites States

Rank	Airports	IATA Code	Major City Served	State	2018	2017	2016	2015
1	Hartsfield-Jackson Atlanta International Airport	ATL	Atlanta	GA	51,866,464	50,251,964	50,501,858	49,340,732
2	Los Angeles International Airport	LAX	Los Angeles	CA	42,626,783	41,232,432	39,636,042	36,351,226
3	O'Hare International Airport	ORD	Chicago	IL	39,874,879	38,593,028	37,589,899	36,305,668
4	Dallas/Fort Worth International Airport	DFW	Dallas/Fort Worth	TX	32,800,721	31,816,933	31,283,579	31,589,832
5	Denver International Airport	DEN	Denver	CO	31,363,573	29,809,097	28,267,394	26,280,043
6	John F. Kennedy International Airport	JFK	New York	NY	30,541,459	29,533,154	29,239,151	27,782,369
7	San Fransisco International Airport	SFO	San Fransisco	CA	27,794,154	26,900,048	25,707,101	24,190,549
8	Seattle-Tacoma International Airport	SEA	Seattle/Tacoma	WA	24,894,338	22,639,124	21,887,110	21,231,781
9	McCarran International Airport	LAS	Las Vegas	NV	23,655,285	23,364,393	22,833,267	21,824,231
10	Orlando International Airport	MCO	Orlando	FL	23,184,634	21,565,448	20,283,541	18,759,938
11	Newark Liberty International Airport	EWR	New York/Newark	NJ	22,283,574	22,011,251	21,511,880	21,913,166
12	Charlotte Douglas International Airport	CLT	Charlotte	NC	22,283,574	22,011,251	21,511,880	21,913,166
13	Phoenix SKy Harbor International Airport	PHX	Phoenix	AZ	21,623,842	21,184,458	20,896,265	21,351,445
14	George Bush Intercontinental Airport	IAH	Houston	TX	21,157,948	19,603,731	20,062,072	20,595,874
15	Miami International Airport	MIA	Miami	FL	21,025,210	20,709,225	20,875,813	20,986,341
16	Logan International Airport	BOS	Boston	MA	20,010,262	18,409,704	18,123,844	17,634,252
17	Minneapolis-Saint Paul International Airport	MSP	Minneaplis/St. Paul	MN	18,363,493	18,409,704	18,123,844	17,634,252
18	Fort Lauderdale-Hollywood International Airport	FLL	Fort Lauderdale	FL	17,613,957	15,817,043	14,263,270	13,061,607
19	Detroit Metropolitan Airport	DTW	Detroit	MI	17,437,716	17,036,092	16,826,287	16,255,520
20	Philadelphia International Airport	PHL	Philadelphia	PA	15,285,948	14,271,243	14,564,419	15,101,318
21	LaGuardia Airport	LGA	New York	NY	15,059,648	14,614,802	14,706,123	14,762,593
22	Baltimore-Washington International Airport	BWI	Baltimore/Washington, D.C.	MD	13,373,773	12,976,554	12,340,972	11,738,828
23	Salt Lake City International Airport	SLC	Salt Lake City	UT	12,228,677	11,615,954	11,143,738	10,634,519
24	San Diego International Airport	SAN	San Diego	CA	12,176,303	11,139,933	10,340,164	9,985,739
25	Washington Dulles International Airport	IAD	Washington, D.C.	VA	11,628,309	11,024,306	10,596,942	10,363,918
26	Ronald Reagan Washington National Airport	DCA	Washington, D.C.	VA	1,367,176	11,506,310	11,470,854	11,242,375
27	Midway International Airport	MDW	Chicago	IL	10,685,565	10,912,074	11,044,353	11,044,387
28	Tampa International Airport	TPA	Tampa	FL	10,369,622	9,548,580	9,149,994	9,150,414
29	Portland International Airport	PDX	Portland	OR	9,805,535	9,435,473	9,071,154	8,340,234
30	Daniel K. Inouye International Airport	HNL	Honolulu	HI	9,578,505	9,743,989	9,656,340	9,656,340

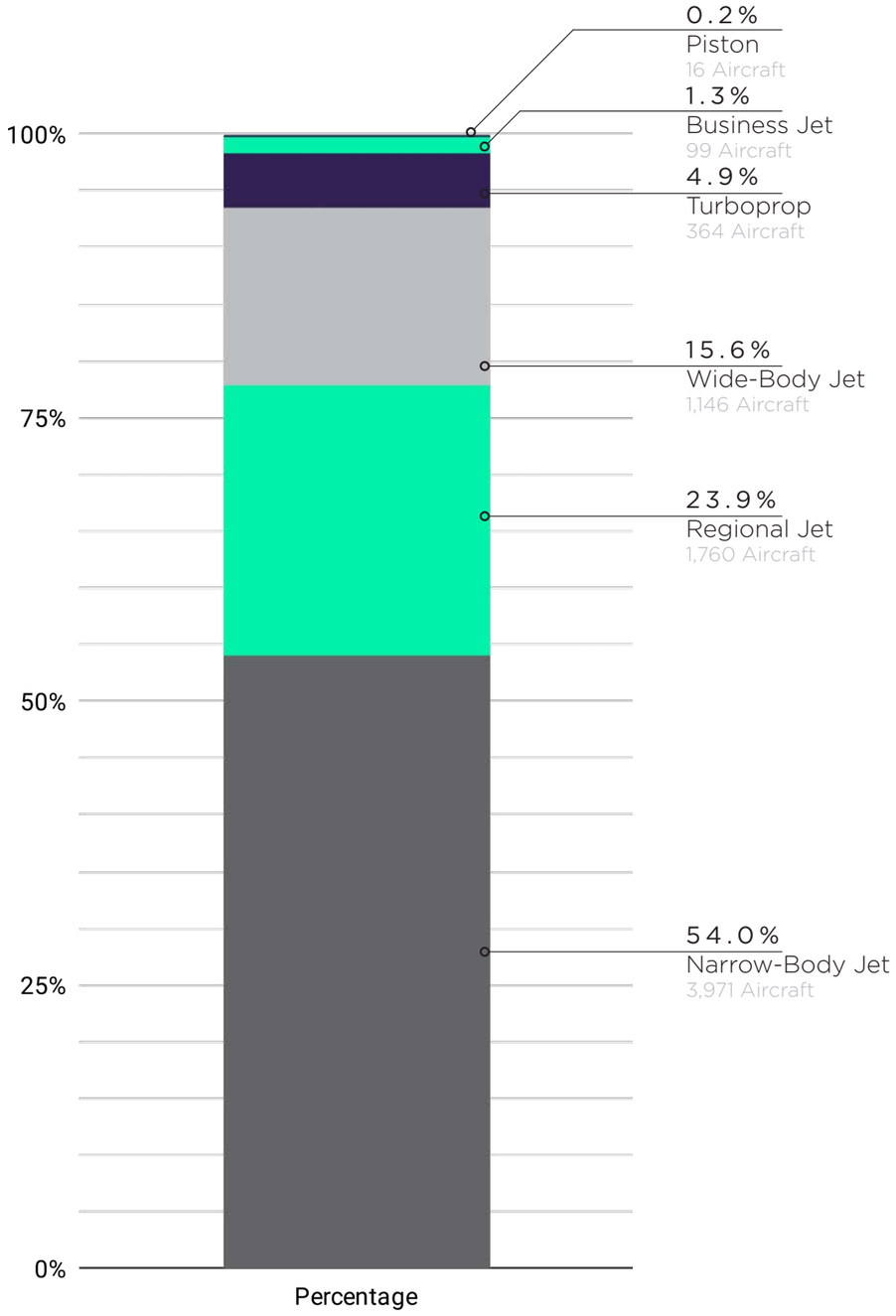
Top 30 International Airports in the Unites States

Rank	IATA Code	2015	Difference	% Change	2016	Difference	% Change	2017	Difference	% Change	2018
1	ATL	49,340,732	1,161,126	2.35%	50,501,858	-249,894	-0.49%	50,251,964	1,614,500	3.21%	51,866,464
2	LAX	36,351,226	3,284,816	9.04%	39,636,042	1,596,390	4.03%	41,232,432	1,394,351	3.38%	42,626,783
3	ORD	36,305,668	1,284,231	3.54%	37,589,899	1,003,129	2.67%	38,593,028	1,281,851	3.32%	39,874,879
4	DFW	31,589,832	-306,253	-0.97%	31,283,579	533,354	1.70%	31,816,933	983,788	3.09%	32,800,721
5	DEN	26,280,043	1,987,351	7.56%	28,267,394	1,541,703	5.45%	29,809,097	1,554,476	5.21%	31,363,573
6	JFK	27,782,369	1,456,782	5.24%	29,239,151	294,003	1.01%	29,533,154	1,008,305	3.41%	30,541,459
7	SFO	24,190,549	1,516,552	6.27%	25,707,101	1,192,947	4.64%	26,900,048	894,106	3.32%	27,794,154
8	SEA	21,231,781	655,329	3.09%	21,887,110	752,014	3.44%	22,639,124	2,255,214	9.96%	24,894,338
9	LAS	21,824,231	1,009,036	4.62%	22,833,267	531,126	2.33%	23,364,393	290,892	1.25%	23,655,285
10	MCO	18,759,938	1,523,603	8.12%	20,283,541	1,281,907	6.32%	21,565,448	1,619,186	7.51%	23,184,634
11	EWR	21,913,166	-401,286	-1.83%	21,511,880	499,371	2.32%	22,011,251	272,323	1.24%	22,283,574
12	CLT	21,913,166	-401,286	-1.83%	21,511,880	499,371	2.32%	22,011,251	272,323	1.24%	22,283,574
13	PHX	21,351,445	-455,180	-2.13%	20,896,265	288,193	1.38%	21,184,458	439,384	2.07%	21,623,842
14	IAH	20,595,874	-533,802	-2.59%	20,062,072	-458,341	-2.28%	19,603,731	1,554,217	7.93%	21,157,948
15	MIA	20,986,341	-110,528	-0.53%	20,875,813	-166,588	-0.80%	20,709,225	315,985	1.53%	21,025,210
16	BOS	17,634,252	489,592	2.78%	18,123,844	285,860	1.58%	18,409,704	1,600,558	8.69%	20,010,262
17	MSP	17,634,252	489,592	2.78%	18,123,844	285,860	1.58%	18,409,704	-46,211	-0.25%	18,363,493
18	FLL	13,061,607	1,201,663	9.20%	14,263,270	1,553,773	10.89%	15,817,043	1,796,914	11.36%	17,613,957
19	DTW	16,255,520	570,767	3.51%	16,826,287	209,805	1.25%	17,036,092	401,624	2.36%	17,437,716
20	PHL	15,101,318	-536,899	-3.56%	14,564,419	-293,176	-2.01%	14,271,243	1,014,705	7.11%	15,285,948
21	LGA	14,762,593	-56,470	-0.38%	14,706,123	-91,321	-0.62%	14,614,802	444,846	3.04%	15,059,648
22	BWI	11,738,828	602,144	5.13%	12,340,972	635,582	5.15%	12,976,554	397,219	3.06%	13,373,773
23	SLC	10,634,519	509,219	4.79%	11,143,738	472,216	4.24%	11,615,954	612,723	5.27%	12,228,677
24	SAN	9,985,739	354,425	3.55%	10,340,164	799,769	7.73%	11,139,933	1,036,370	9.30%	12,176,303
25	IAD	10,363,918	233,024	2.25%	10,596,942	427,364	4.03%	11,024,306	604,003	5.48%	11,628,309
26	DCA	11,242,375	228,479	2.03%	11,470,854	35,456	0.31%	11,506,310	-139,134	-1.21%	11,367,176
27	MDW	11,044,387	-34	0.00%	11,044,353	-132,279	-1.20%	10,912,074	-226,509	-2.08%	10,685,565
28	TPA	9,150,414	-420	0.00%	9,149,994	398,586	4.36%	9,548,580	821,042	8.60%	10,369,622
29	PDX	8,340,234	730,920	8.76%	9,071,154	364,319	4.02%	9,435,473	370,062	3.92%	9,805,535
30	HNL	9,656,340	0	0.00%	9,656,340	87,649	0.91%	9,743,989	-165,484	-1.70%	9,578,505

#	Manufacturer	2017	% of Fleet	2018	% of Fleet
-	All	7314	100.0	7356	100.0
1	Boeing	3171	43.4	3226	43.9
2	Airbus	1446	19.8	1556	21.2
3	Bombardier	1034	14.1	1018	13.8
4	Embraer	798	10.9	829	11.4
5	McDonnell Douglas	479	6.5	333	4.5
6	Cessna	246	3.4	248	3.4
7	ATR	47	<1.0	46	<1.0
8	Gulfstream	34	<1.0	36	<1.0
9	Lockheed	8	<1.0	14	<1.0
10	Douglas	15	<1.0	12	<1.0

#	Manufacturer	Model	2017	2018
-	ALL	ALL	7314	7356
1	Boeing	737-800	794	827
2	Boeing	787-700	585	586
3	Airbus	A320	505	521
4	Airbus	A321	350	398
5	Boeing	757-200	456	397
6	Bombardier	CRJ200	393	386
7	Airbus	A319	342	346
8	Boeing	737-900ER	292	335
9	Embraer	E175	267	311
10	Bombardier	CRJ900	270	275

#	Airline Provider	2017	% of Fleet	2018	% of Fleet
-	All	7314	100.0	7356	100.0
1	American Airlines	995	13.6	969	13.2
2	Delta Air Lines	932	12.7	893	12.1
3	United Air Lines	755	10.3	773	10.5
4	Southwest Airlines	760	10.4	751	10.2
5	FedEx	674	9.2	687	9.3
6	SkyWest Airlines	434	5.9	471	6.4
7	JetBlue Airways	243	3.3	253	3.4
8	UPS	239	3.3	248	3.4
9	Alaska Airlines	155	2.1	233	3.2
10	Republic Airlines	190	2.6	189	2.6

United States Aircraft Fleet by Type

Data from IATA 2018