Air Canada – IPSW

Air Canada Cargo
Cargo AI, Revenue Planning, Customer Service

May 13, 2024

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Introduction

About Us

1937

Air Canada's predecessor, Trans-Canada Air Lines (TCA), inaugurated its first flight on September 1, 1937.

The 50-minute flight aboard a Lockheed L-10A carried two passengers and mail between Vancouver and Seattle.

1965

By 1965, TCA had grown to become Canada's national airline; it changed its name to Air Canada.

The airline became fully privatized in 1989.

1977

In 1977, Air Canada Cargo was established.

2021

By 2021, Air Canada Cargo was Canada's largest provider of air cargo transportation services as measured by cargo capacity, with a presence in over 50 countries and hubs in Montreal, Toronto, Vancouver, Chicago, London, and Frankfurt.

The Cargo Journey

Comprehensive competitive global network

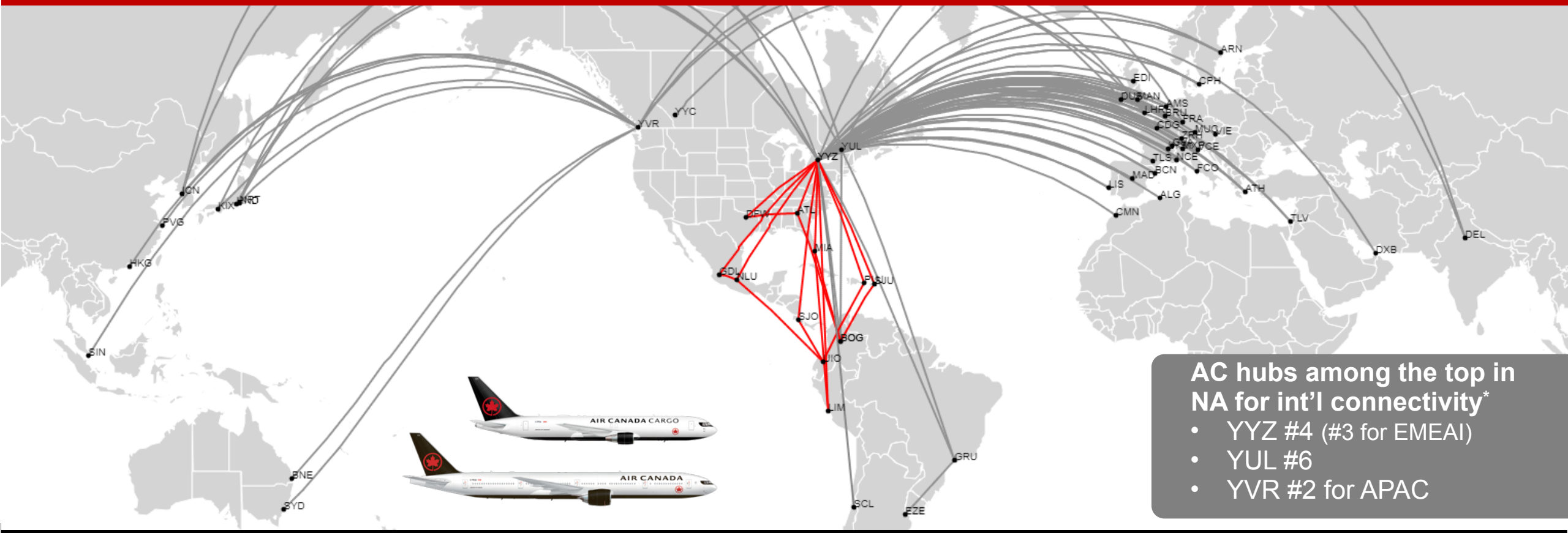
Efficient connectivity via our well-positioned hubs in YYZ, YUL & YVR

65+ daily int'l widebody & freighter flights

29 EMEAI destinations

9 APAC destinations

10 LATAM destinations



AC hubs among the top in NA for int'l connectivity*

- YYZ #4 (#3 for EMEAI)
- YUL #6
- YVR #2 for APAC

Source: Diio - 2024 schedule as of 04Apr
*Widebody service to Europe, Africa, Middle East & Asia

Capacity growth via fleet renewal program

TODAY

Includes all mainline, Rouge and Jazz aircrafts

2024 – 2027

Addition of 70+ new aircraft

Boeing 787-9/10

Airbus A321XLR

Airbus A220-300

Boeing 737 MAX

Determining the Right Product…

AC General Cargo

AC Expedair

AC DGR

AC Absolute

AC Fresh

AC Pharmacair

AC Animals

AC Horses

AC Secure

AC Compassion

AC eCommerce

Our Team

Ankei Yau
Sr Mgr, Cargo AI & Transformation

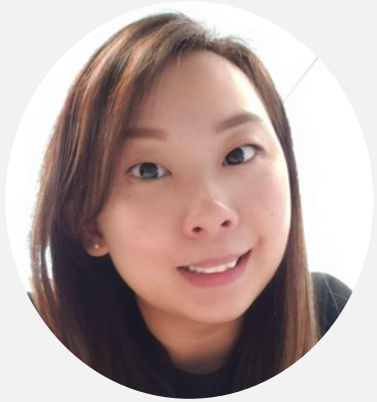
Sebastian Cosgrove
Dir, Global Customer Service

Janik Gagne
Sr Mgr, Cargo Rev & Netw Plan

Georgios Farfaras
Mgr, Cargo Revenue Modeling

Samad Farih
Analyst, AI Transformation

Flora Gao
Analyst, AI Transformation



Vivian Chan
Mgr, Cust Serv Cent Inn & CRM

Vasanth Ramkumar
Mgr, Cargo Revenue Forecasting

Air Canada Problem 1
Customer Service: Staffing Model

Help is *NOT* on the way…

Context

Air Canada Cargo Customer Service Centres handle customer service inquiries for customers with freight originating, transiting or departing from Canada.

There are three Customer Service Centres across Canada - in Toronto (YYZ), Montreal (YUL) and Moncton (YQM).

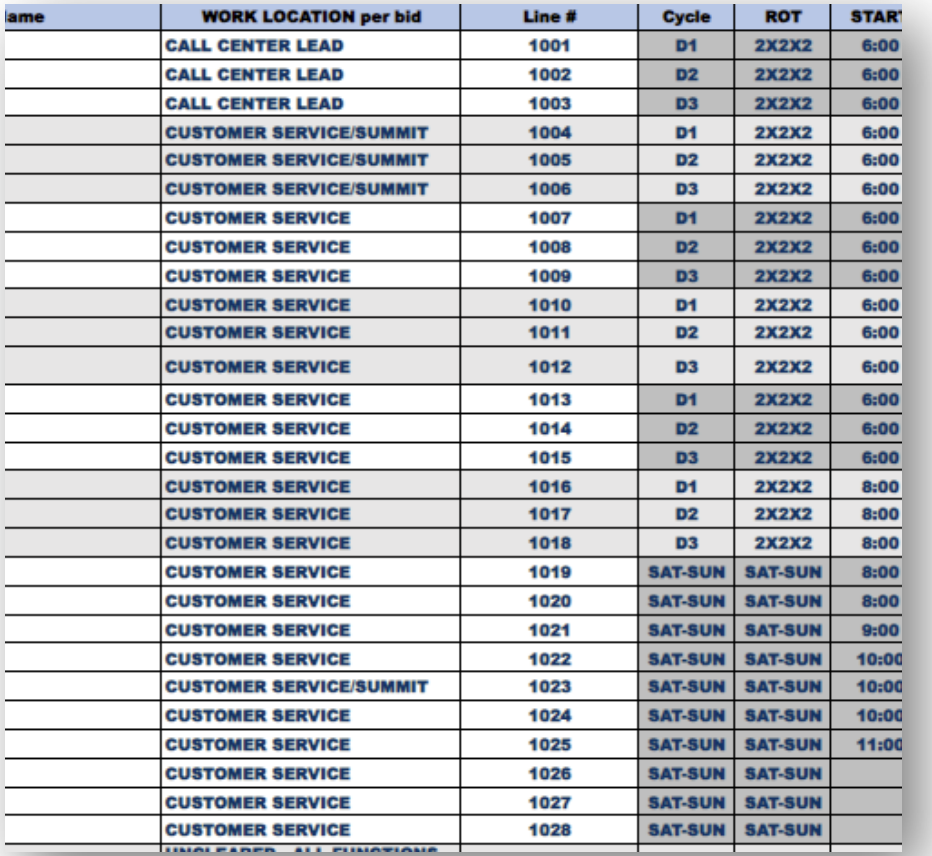
We offer bilingual service to our customers from 0600 – 2200 EST, seven days a week and offer bilingual service to our customers.

The Problem

Air Canada Cargo Customer Service creates a one-year staffing schedule based on historical data for emails and calls.

Currently, Air Canada Cargo Customer Service uses an Excel spreadsheet to calculate the required number of staff to achieve our desired service levels in both English and French.

With new channels of communication, we need a solution to estimate the number of staff required to service our customers.



ame	WORK LOCATION per bid	Line #	Cycle	ROT	STAR
	CALL CENTER LEAD	1001	D1	2X2X2	6:00
	CALL CENTER LEAD	1002	D2	2X2X2	6:00
	CALL CENTER LEAD	1003	D3	2X2X2	6:00
	CUSTOMER SERVICE/SUMMIT	1004	D1	2X2X2	6:00
	CUSTOMER SERVICE/SUMMIT	1005	D2	2X2X2	6:00
	CUSTOMER SERVICE/SUMMIT	1006	D3	2X2X2	6:00
	CUSTOMER SERVICE	1007	D1	2X2X2	6:00
	CUSTOMER SERVICE	1008	D2	2X2X2	6:00
	CUSTOMER SERVICE	1009	D3	2X2X2	6:00
	CUSTOMER SERVICE	1010	D1	2X2X2	6:00
	CUSTOMER SERVICE	1011	D2	2X2X2	6:00
	CUSTOMER SERVICE	1012	D3	2X2X2	6:00
	CUSTOMER SERVICE	1013	D1	2X2X2	6:00
	CUSTOMER SERVICE	1014	D2	2X2X2	6:00
	CUSTOMER SERVICE	1015	D3	2X2X2	6:00
	CUSTOMER SERVICE	1016	D1	2X2X2	8:00
	CUSTOMER SERVICE	1017	D2	2X2X2	8:00
	CUSTOMER SERVICE	1018	D3	2X2X2	8:00
	CUSTOMER SERVICE	1019	SAT-SUN	SAT-SUN	8:00
	CUSTOMER SERVICE	1020	SAT-SUN	SAT-SUN	8:00
	CUSTOMER SERVICE	1021	SAT-SUN	SAT-SUN	9:00
	CUSTOMER SERVICE	1022	SAT-SUN	SAT-SUN	10:00
	CUSTOMER SERVICE/SUMMIT	1023	SAT-SUN	SAT-SUN	10:00
	CUSTOMER SERVICE	1024	SAT-SUN	SAT-SUN	10:00
	CUSTOMER SERVICE	1025	SAT-SUN	SAT-SUN	11:00
	CUSTOMER SERVICE	1026	SAT-SUN	SAT-SUN	
	CUSTOMER SERVICE	1027	SAT-SUN	SAT-SUN	
	CUSTOMER SERVICE	1028	SAT-SUN	SAT-SUN	

Data Sets

- **Current Staffing:**
  - **Total Full-Time (F/T) employees: 38** (304 hours)
    - 6 F/T in YUL (All bilingual)
    - 3 F/T in YQM (2 bilingual, 1 unilingual – English only)
    - 29 F/T in YYZ (all unilingual – English only)
  - F/T hour blocks: 8-hour blocks
    - Employees are handling calls/ emails for 7 hours of each shift. This allows for 30 minutes for lunch and 30 minutes flex time.
  - **Total Part-Time (P/T) employees: 14** (84 hours)
    - 8 P/T in YQM (6 bilingual, 2 unilingual – English only)
    - 6 P/T in YYZ (all unilingual – English only)
  - P/T hour blocks: 6-hour blocks
    - Employees are handling calls/ emails for 5.5 hours of each shift.
    - This allows for 30 minutes flex time.
- Historical customer contact volume data are provided in the Excel spreadsheet.

Desired Outcome

- Create a standard seven (7) time of day estimate to optimize staff schedules
- 80% of calls should be answered with 60 seconds or less
- Emails should be answered with 60 minutes or less
- Average Handle Time is 04:00 per contact (phone/ email).
- French service must always be available (French resources are indicated separately).
- All Statutory Holidays and weekends must also be covered. Customer Service is available 365 days.

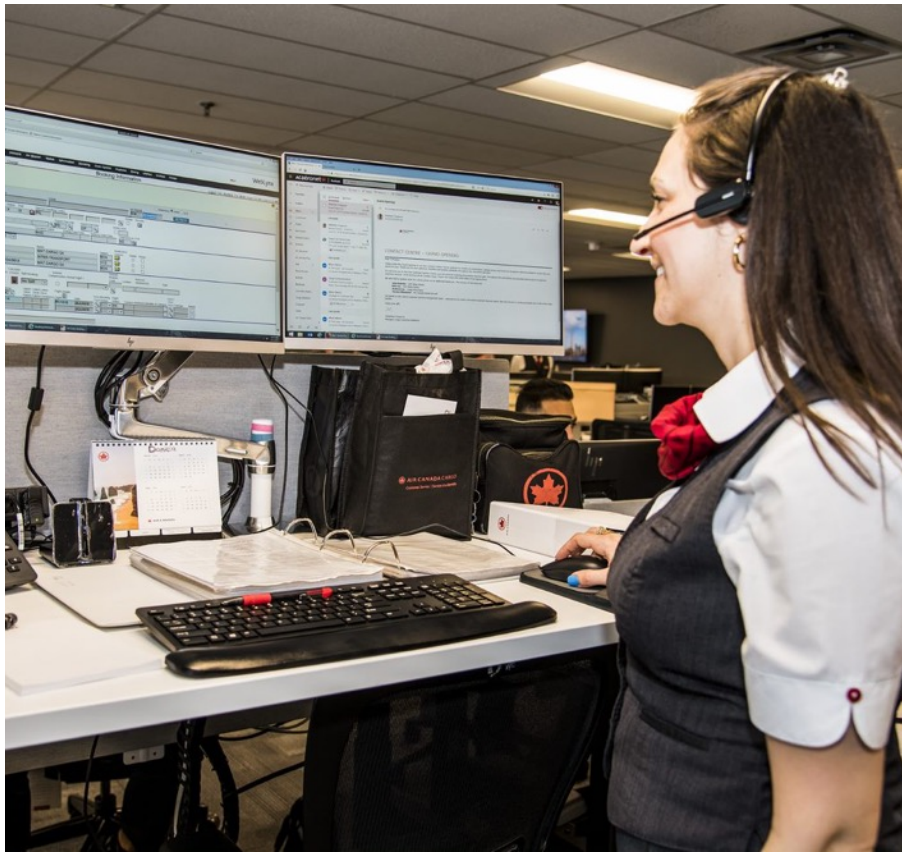
Restrictions

Shifts cannot be broken up; work hours must be consecutive.

F/T shifts are 8 hours per shift. Entitled to 30-min lunch and 31 minutes of flex time per 8-hour shift.

P/T shifts are 6 hours per shift. P/T staff cannot work more than 32 hours per week/6-hour shifts per day. Entitled to 30 minutes of flex time per shift.

If an uplift in staffing is required or projected, please highlight this.



Can you help us?

Questions?

Air Canada Problem 2
Revenue Planning: Change Factor Simulator

What is the Spot Rate Recommendation Solution?

Vector | AI
AIR CANADA CARGO

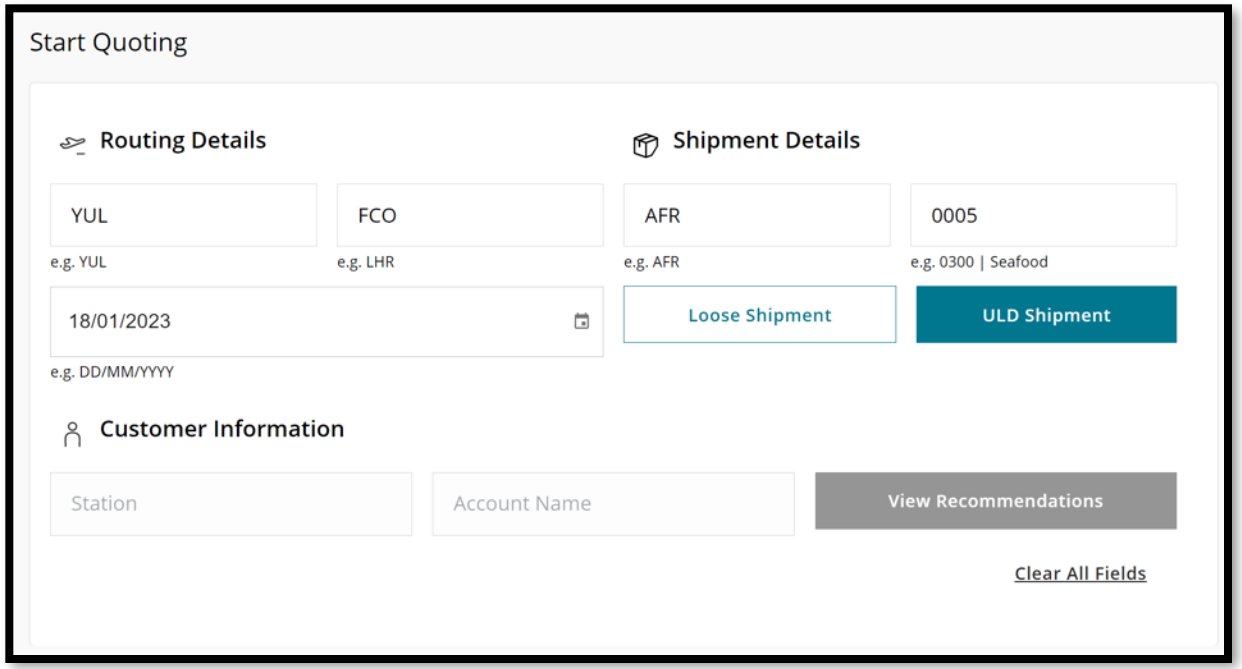
What is it?

A **dynamic pricing** tool that will provide guidance and information to **offer the best Spot Rate** while meeting **revenue targets**.

How Does it Work?

Model will **optimize** the rate recommendations based on **shipment characteristics** and **flight metrices**.

What is the Spot Rate Recommendation Solution?



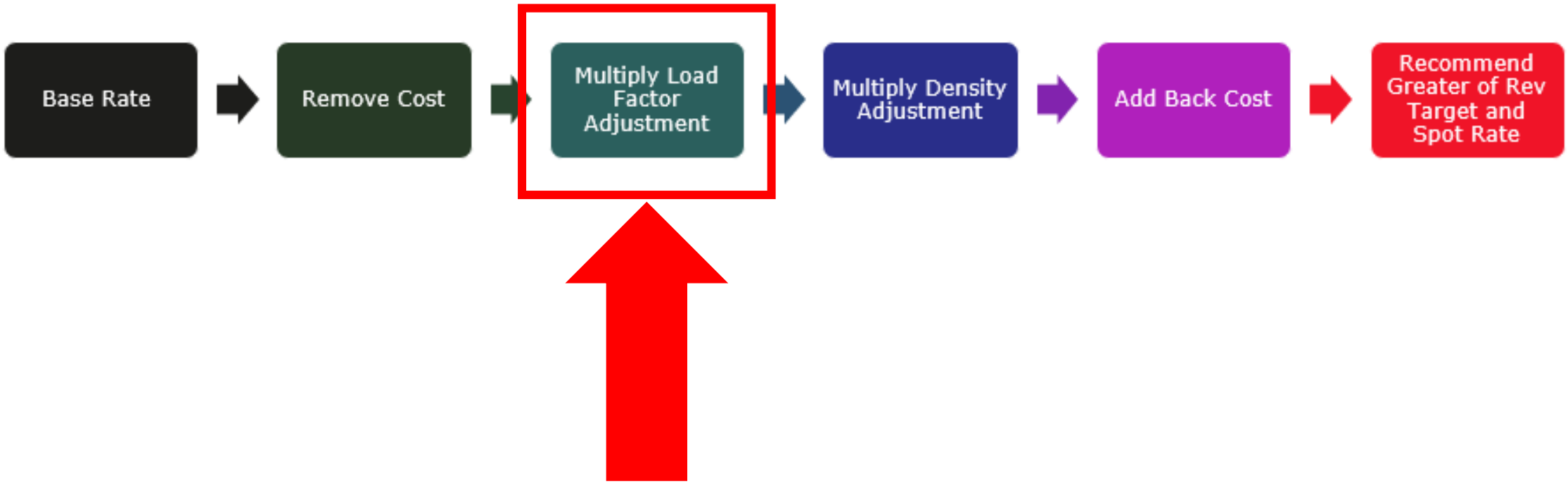
Vector AI – Spot Rate Recommendations
How is the rate calculated?

Base Rate
- Origin/ Destination
- Chargeable Weight
- Product Code
- Customer Account
- Cost

Factors
- Route (Legs, Aircraft type)
- Buildability (Pieces, Dims, Stack/Tiltable)
- Density
- Days to departure
- Expected and Current Load Factor

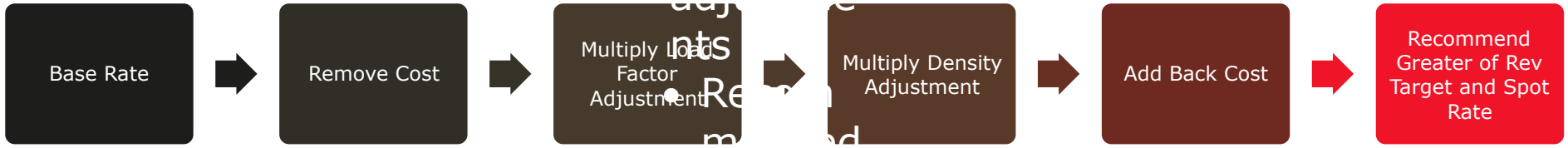
Generate Rate
- Compare Spot Rate & Revenue Target

Vector AI – Spot Rate Recommendations
How is the rate calculated?



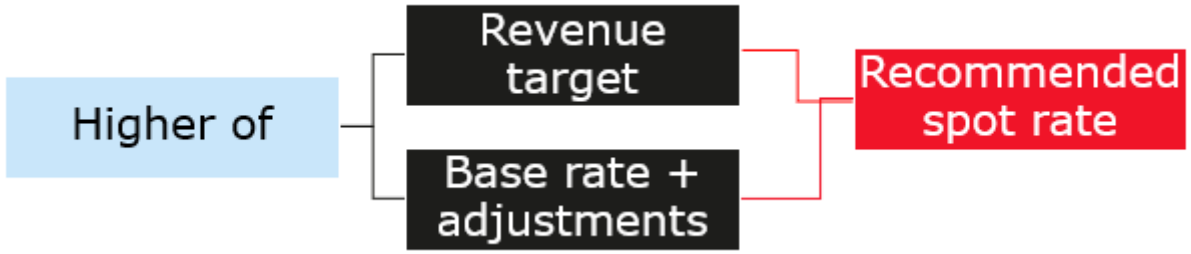
Spot Rate Recommendation Example

Higher of
- Revenue target
- Base rate

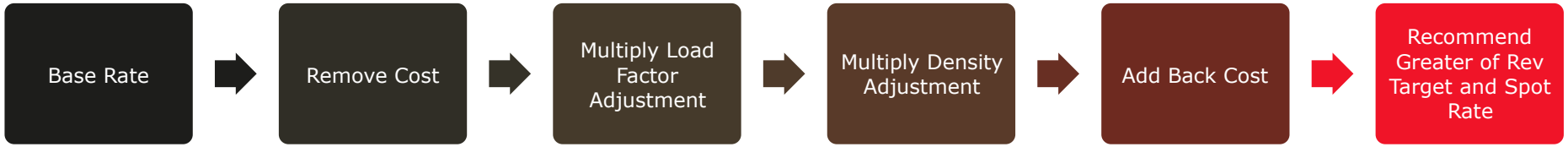


Base Rate		Cost		Rate for adjustments		Factor Adjustments		
3.50$	-	0.50$	=	3.00$	x	0.90 (Load factor Adj)	=	2.70$
				2.70$	x	0.80 (Density Adj)	=	2.16
				2.16$	+	0.50$ (Cost)	=	**2.66$**

Spot Rate Recommendation Example



Revenue Target @ **$2.50** > Spot Rate at **$2.66 =** Tool Recommends **$2.66**



Tool Recommendation: $2.66

Load Factor Change

Vector | AI
AIR CANADA CARGO

Expected LF: OPEN							
Days to Departure / Current LF	**0 to 1**	**1 to 2**	**2 to 3**	**3 to 4**	**4 to 5**	**5 to 10**	**10 to 15**
0% - 30%	0.6	0.6	0.6	0.6	0.75	1	1
30% - 45%	0.6	0.6	0.6	0.6	0.85	1	1
45% - 60%	0.7	0.7	0.79872	0.79904	0.95	1	1
60% - 75%	1.1	1.018433	1.004747	1	1	1	1
75% - 90%	1.3	1.238467	1.210773	1.18308	1.155387	1.127693	1.05
90% - 100%	1.5	1.4585	1.4168	1.3751	1.3334	1.2917	1.05
>100%	2.74	2.575	2.41	2.245	2.08	1.915	1.75
Expected LF: AVERAGE							
Days to Departure / Current LF	**0 to 1**	**1 to 2**	**2 to 3**	**3 to 4**	**4 to 5**	**5 to 10**	**10 to 15**
0% - 30%	0.7	0.7	0.7	0.7	0.85	1	1
30% - 45%	0.7	0.7	0.7	0.7	0.9	1	1
45% - 60%	0.75	0.75	0.84872	0.87404	1	1	1
60% - 75%	1.1	1.04404	1.04106	1.03808	1.0351	1	1
75% - 90%	1.3	1.2468	1.22744	1.20808	1.18872	1.16936	1.1
90% - 100%	1.5	1.4585	1.4168	1.3751	1.3334	1.2917	1.1
>100%	2.74	2.58	2.41	2.25	2.08	1.92	1.75
Expected LF: CONSTRAINED							
Days to Departure / Current LF	**0 to 1**	**1 to 2**	**2 to 3**	**3 to 4**	**4 to 5**	**5 to 10**	**10 to 15**
0% - 30%	0.8	0.8	0.8	0.8	1	1	1
30% - 45%	0.8	0.8	0.8	0.8	1	1	1
45% - 60%	0.8	0.8	0.88208	0.92406	1	1	1
60% - 75%	1.1	1.043467	1.054773	1.06608	1.077387	1.05	1.1
75% - 90%	1.3	1.246833	1.227467	1.2081	1.188733	1.169367	1.1
90% - 100%	1.5	1.4585	1.4168	1.3751	1.3334	1.2917	1.1

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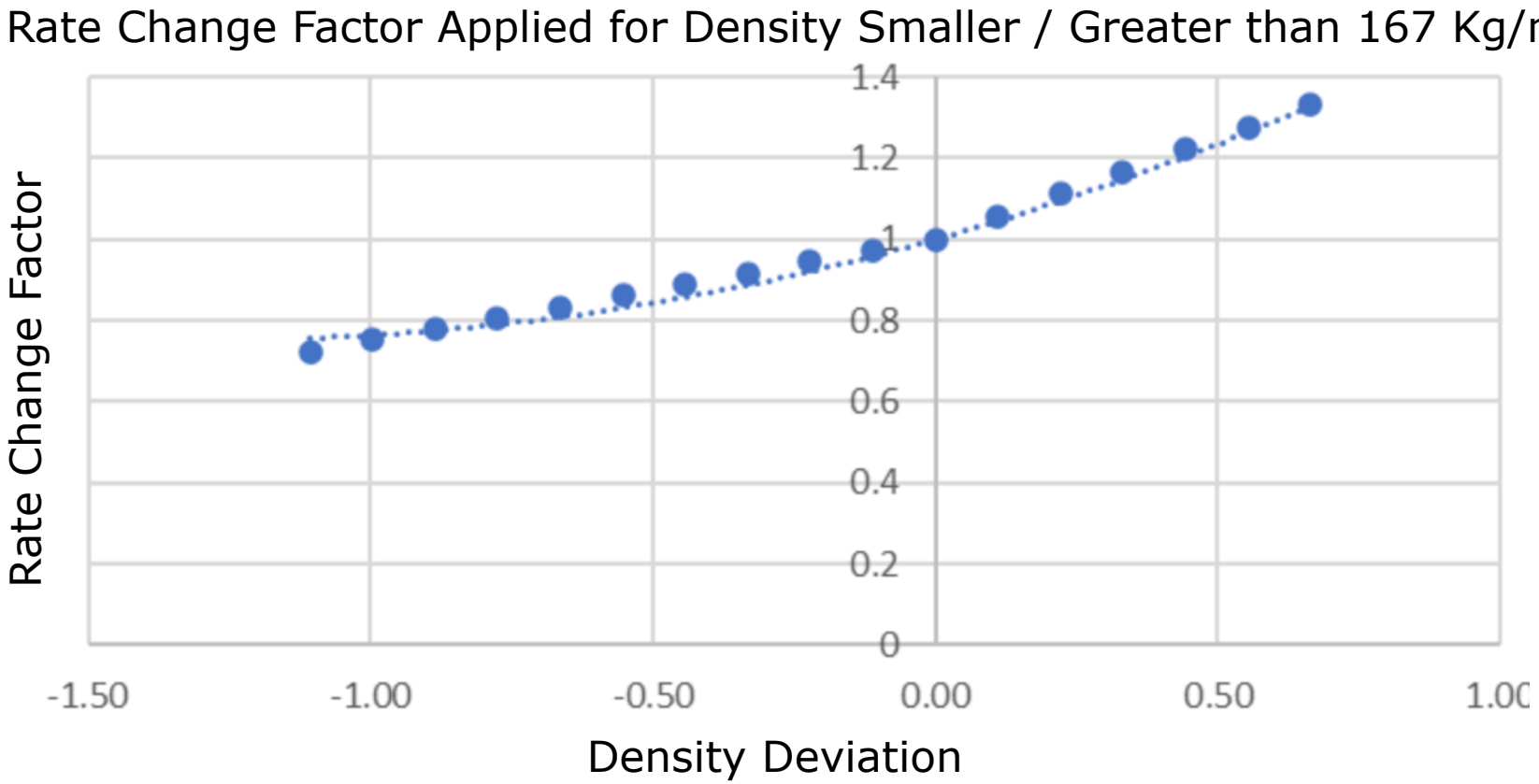
Density and Buildability

Vector | AI
AIR CANADA CARGO



- The price per kilo is reduced as density increases.
- The relationship between density and price is not directly linear.
- Shipments with a better buildability score will benefit from a better price.

Your task (if you accept it!)

Bring the load factor metric from

Load Factor Change

Vector | AI
AIR CANADA CARGO

Expected LF: OPEN							
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Available data

- More than 150,000 spot rate quotes

- Data points:
  - Spot rate creation date
  - Flight departure date
  - Load factor at the time of the quote
  - Load factor at the time of departure
  - Origin
  - Destination
  - Quoted rate
  - Quote status
  - Product/Solution
  - Weight (actual and chargeable)

Questions?

Thank you
Merci

aircanada.com