## Air Cargo Conference 2018



## Halifax Air Cargo Market Study & Business Case – 10 Years Later



Prepared by Jacobs Consultancy Canada Inc. for Halifax Gateway Council

March 2018



#### GLOBAL AIR CARGO TRENDS

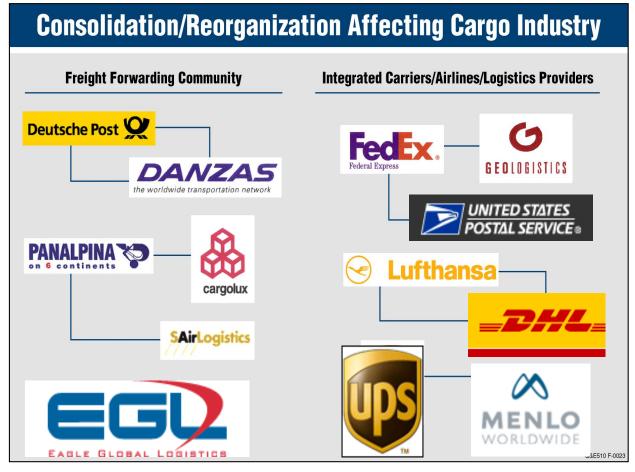
## 'Aircraft carry around two per cent of international trade by volume, but around 40 per cent by value'

- FedEx Chief Operating Officer, Michael Ducker
- Increasing number of companies are out-sourcing to remote locations
- Decreasing product cycles for high value, high tech goods have made fast delivery to market essential
- Air cargo operations are allowing fast, frequent and predictable transit between more and more parts of the world
- The air cargo sector has played an essential, although understated, role in the development of the global economy:
  - Local industries have become global traders
  - Consumers enjoy goods from any part of the world within a relatively short time-frame
- Air Cargo's continued development is key to the on-going success of international trade





#### **EVOLUTION OF THE AIR CARGO INDUSTRY**



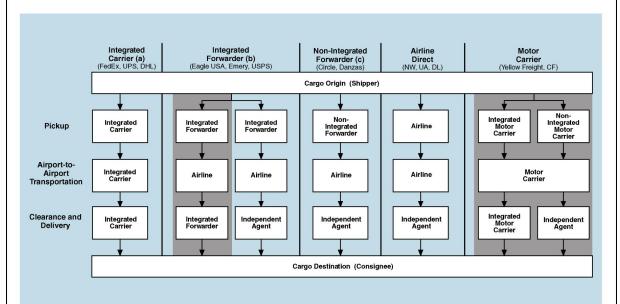
- The integrated carriers continue their growth into international, supply chain services, and surface transportation
- A smaller number of <u>freight</u> <u>forwarders</u> are responsible for a greater amount of freight activity due to consolidation
- The "integrated forwarder" will become increasingly important to international freight movement





#### **KEY CARGO OPERATORS/ROLE WITHIN CARGO INDUSTRY**

#### SERVICES AND SERVICE PROVIDERS INVOLVED IN DISTRIBUTING AIR CARGO



### North American Market only

Notes: (a) Integrated carriers are all-cargo carriers that own and operate all the equipment and services necessary to provide complete door-to-door customer services.

- (b) Integrated forwarders are companies who own, or partially own, components and services necessary to provide complete door-to-door customer services, but also outsource/utilize logistical assistance in particular markets.
- (c) Non-integrated forwarders are logistics providers who are non-asset based companies. These companies consolidate shippers freight and arrange complete transportation services for the end users.

Source: Hartford's World Wide Shipping Guide and Cass Information Systems, Inc.

The combination of these key service providers defines the entire industry

- The integrated carriers have grown to dominate the domestic US market over the past 20 years
- Freight forwarders control approximately 75% of the world's international freight activity
- The combination of the integrated carriers and freight forwarding community will dictate the industry's future route (and airport) development





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#### **AIRLINES AND CARGO ACTIVITY**

#### **AIR CARGO CARRIER TYPES AND THEIR BUSINESS CHARACTERISTICS**

Air cargo Carrier types	Characteristics	Illustrative carriers	Customers	Desired airport characteristics
Belly	Baggage holds of passenger aircraft	Delta, Continental, US Airways	Wholesale, mail, retail	Passenger airport
Mixed	Baggage holds of passenger aircraft and main decks of all-cargo aircraft	Air Canada, Northwest, Lufthansa, EVA	Wholesale, mail, retail	Passenger airport
All-cargo	Main decks of all-cargo aircraft	Atlas Air, Polar, Cargolux, Arrow Air	Wholesale	Remote Airport
Integrated	Main decks of all-cargo aircraft	FedEx, UPS, DHL, Purolator	Retail	Airport near population

Airlines that transport air cargo have significantly different characteristics – and ability to use different types of airports

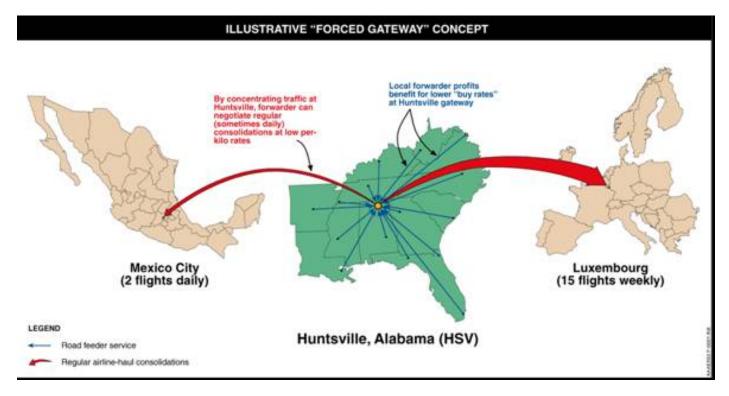
- Belly and Mixed cargo carriers must operate from passenger gateways
- Integrated carriers would prefer to operate at an uncongested facility
- All-cargo carriers can effectively conduct business at a remote facility

Freight forwarders are the key to all-cargo activity





#### IMPORTANCE OF THE FREIGHT FORWARDERS



- With control over 75% of the world's international freight movement, freight forwarders are seeking operationally efficient, cost effective airports to increase shipper consolidations
- As these forwarders rely on additional freighter capacity, alternative gateways (consolidation points) becoming increasingly attractive, in order to decrease costs
- Those airports that offer superior market reach, efficient operations, and costs savings will benefit from this trend





#### AIR CARGO'S TOP FIVE CHALLENGES

- Increasing Fuel Prices
  - Average cost of jet fuel has more than doubled since 2001
  - Fuel costs represent approximately a third of operating costs of allcargo carriers
  - Cargo carriers instituting surcharges to cover fuel cost increases (surcharge can be up to 30% of the total airfreight rate)
- 2. Security Threats
  - Expect tighter air cargo security to affect operations and increase costs
- 3. Changing Inventory Strategies
- Modal Shifting
- 5. Provider Consolidations

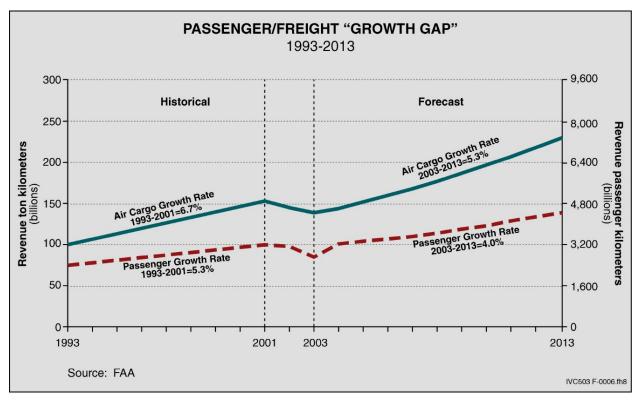
Source: Air Cargo's High 5 Top Challenges, by Lisa Harrington (October 2006), Inboundlogistics.com

www.inboundlogistics.com/articles/features/1006\_feature01.shtml





## THE PASSENGER/CARGO "GROWTH GAP" INDICATES CONTINUING USE (AND GROWTH) OF ALL-CARGO AIRCRAFT



- Air cargo growth rates have exceeded those of passenger growth over the past decade
- Passenger airlines will not add additional capacity to accommodate cargo the "gap" can only be made up with pure freighter aircraft activity
- Recent growth in low-cost airlines and regional jet activity (neither focus on cargo capacity) will increase the need for freighter capacity





#### HUNTSVILLE INTERNATIONAL AIRPORT—MARKET CONDITIONS







- The historical cargo market development in Huntsville (HSV) is quite unique
- In the mid-to-late 1990's, Panalpina undertook a market analysis to redesign their European gateway(s)
- Panalpina had three major areas of focus:
  - Key shipper analysis (location and transportation requirements)
  - Identifying an airport with supreme facility growth potential, optimal access to highways and other modes (i.e. rail), and cost effectiveness and operational efficiency
    - Ultimately, HSV was identified as leading candidate
  - Finding an all-cargo airline partner that could replace capacity found at JFK and ORD
    - Cargolux provided the 747-200F (since changed to 400) capacity, and required mid-European destination

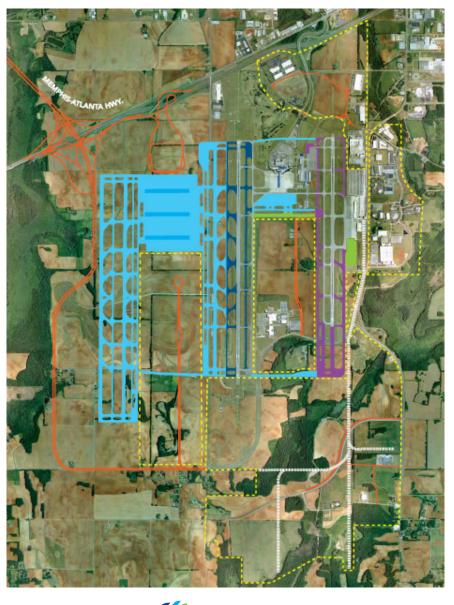
The Huntsville-Madison County Airport Authority was contacted by the Panalpina-Cargolux partnership and quickly created the FTZ #83 to accommodate international shipping and logistics







#### **HSV - DEVELOPMENT PLAN**



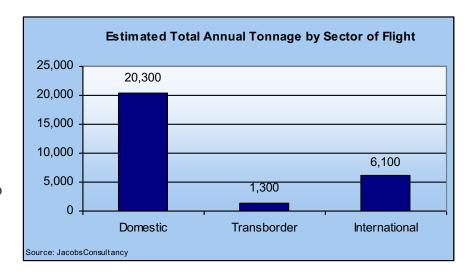
- Initially, HSV was not ready for the massive increase in cargo activity
  - The airport was already blessed with long-runways (>10,000ft.)
  - Cargo facilities were old and not sufficient for the Panalpina operations
  - HMCAA worked with a third party to provide Panalpina with its independent facility(ies) and have gone through three expansions that total >200,000 sq ft.
- The Authority also leveraged the relocation of Panalpina into other growth opportunities
  - The HMCAA immediately planned to develop the JetPlex Industrial Park...to complement the existing Intermodal Center and growing air cargo hub
  - The combination of facilities and capacity attracted additional manufacturers and cargo volumes 10





#### AIR CARGO BY FLIGHT SECTOR - 2006

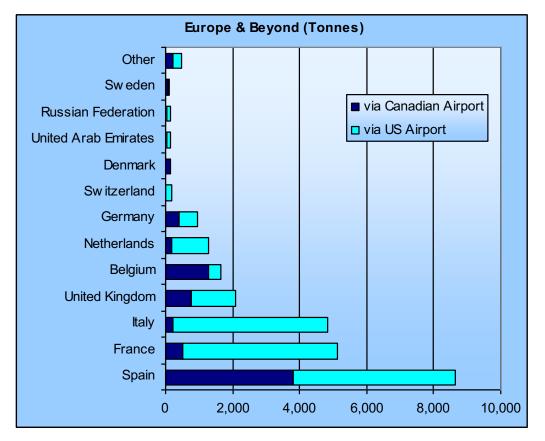
- Most cargo at YHZ is carried on domestic flights. Based on tonnages by air carrier, JC estimates:
  - 73% on domestic flights
  - 5% on US transborder
  - 22% on international
- ABX Air flights to the US commenced in Oct 2006
  - Over full year expect 460 t to US on ABX Air
  - Percent to US expected to increase to 12%
- Total seafood exports by air from YHZ in 2006 was approx. 14,000 t
  - Only 6,100 t total inbound & outbound is on international flights at YHZ
  - Thus, much of the air cargo on domestic flights is transferred to international flights at other Canadian airports
- For outbound cargo, final destination is:
  - 80% international (including US)
  - 20% domestic







## MAJOR EUROPEAN EXPORT MARKETS FOR LIVE/FRESH SEAFOOD – NOVA SCOTIA 2005

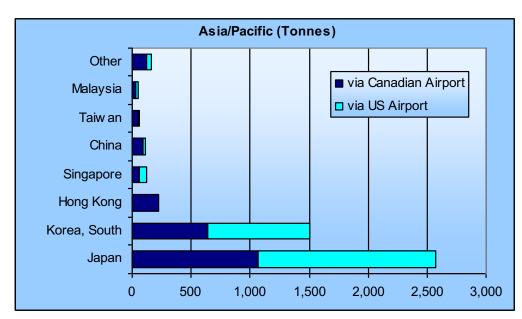


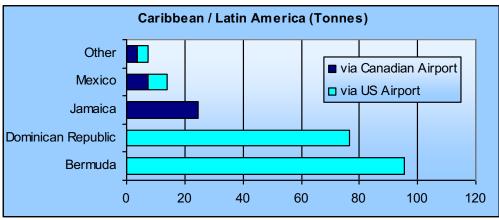
- Europe and beyond market is by far the largest market
  - Beyond includes Africa, Middle East and South Asia
  - Total market 25,700 tonnes
  - Spain, France and Italy are the largest markets
  - Most of the live seafood to these markets is flown from US airport
    - Over half of Spanish market
    - 90% of French market
    - 96% of Italian market
- High Growth Markets
  - Significant markets with the highest 5-year growth rate:
    - United Arab Emirates, 72%/yr
    - Russia, 56%/yr
    - Spain, 44%/yr
    - UK, 21%/yr
    - Netherlands, 9%/yr





## OTHER MAJOR EXPORT MARKETS FOR LIVE/ FRESH SEAFOOD – NOVA SCOTIA 2005





#### **Asia/Pacific Market**

- Total market 4,800 tonnes
- Japan and South Korea are the largest markets
- Over half of the live/fresh seafood to these markets is flown from US airports
- China, Hong Kong and Taiwan markets served from Canadian airports
- Significant markets with the highest 5-year growth rate:
  - Taiwan (Taipei), 57%/yr
  - Thailand, 28%/yr
  - Malaysia, 9%/yr
  - · China, 6%/yr

#### Caribbean / Latin America

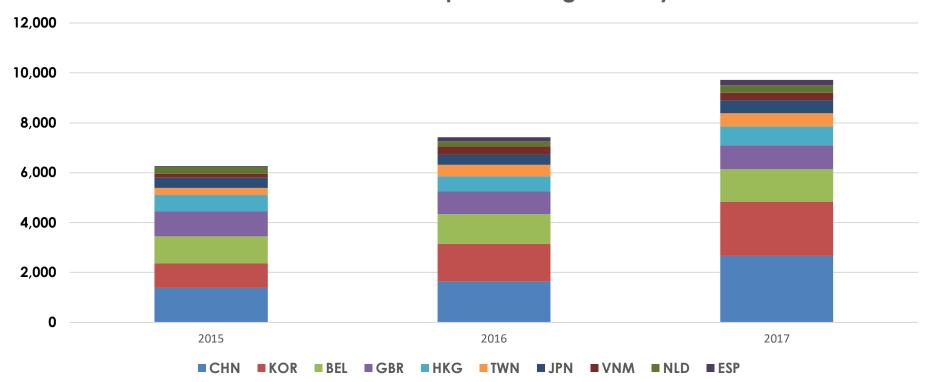
- Small market, 210 tonnes
- Two largest markets served exclusively from US airport





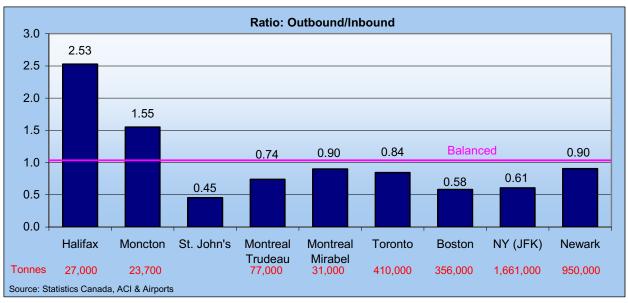
#### TOP 10 LOBSTER EXPORTS BY DESTINATION

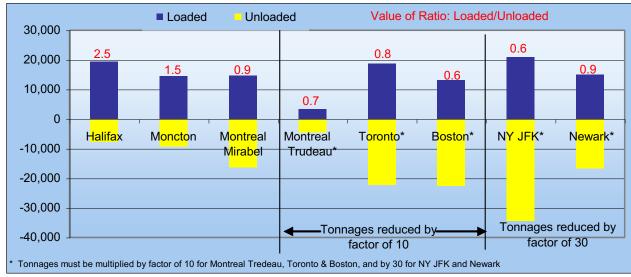
#### Total Live Lobster Exports through YHZ by Air





#### **INBOUND - OUTBOUND BALANCE**









#### **CARGO FACILITY – INFRASTRUCTURE REQUIREMENTS**

#### **Common Use Facility**

- New air cargo facility required to supplant inadequate facilities and provide space for expansion/ new tenants
- Designed to accommodate seafood exports and future growth
- Flexible design to facilitate expansion as necessary
- Located on landside-airside perimeter to provide landside visitors and trucks with direct dock access and secure aircraft access compliant with likely TC cargo security regulations
- Includes:
  - Office space
  - Common use chillers and coolers
  - Landside truck docks
  - Separate tenant bays

#### Estimated 48,400 sq ft facility required. PHASE I estimated at 35,000 sq ft

- IATA benchmark of 1.1 sq ft per tonne of inbound cargo, and 1.0 sq ft per tonne of outbound cargo
- Current demand of 27,000 tonnes/yr + potential for additional 21,400 tonnes/yr = 48,400 tonnes per year, mainly outbound





#### **FINDINGS**

- E/D Cargo from YHZ in 2006 amounted to approximately 28,000 tonnes
- Most cargo from YHZ is carried on domestic flights, even though 80% of enplaned air cargo is destined for international destinations. JC estimates 73% of all air cargo from Halifax is carried on domestic flights, 5% on transborder flights and 22% on international flights
- 25% of Nova Scotia's air cargo is trucked to another airport outside the Province
- Capturing the potential market would increase air cargo loads from YHZ by at least an additional 21,000 tonnes
- Largest air cargo export commodity is live/fresh seafood which shows significant seasonal variation: much of the seafood trucked to Boston and New York is re-exported to international markets by air
- Most cargo from Halifax is outbound: 72% outbound in 2005 based on data reported by Statistics Canada. This is atypical of airports in Eastern Canada and US where majority of cargo is inbound. This Outbound imbalance presents an opportunity for Halifax, particularly in light of the new Open Skies Agreement with US





#### RECOMMENDATION: ACTIVELY PURSUE AIR CARGO OPPORTUNITY

- Recommendation 1: Introduce a Canadian Transshipment Program at YHZ and market to wider cargo community (including airlines, freight forwarders, manufacturers)
- Recommendation 2: Develop competitive incentive package with community
- Recommendation 3: Pursue options for Common Use Cargo Facility Development
- Recommendation 4: Identify and actively pursue all-cargo service with targeted, pre-qualified airlines, even if they currently do not have access to the Halifax market (see next page)
  - If there is interest from an all-cargo carrier that does not have access to Halifax, support a request for an extra-bilateral authority (issued by the Minister) in order to have the carrier licensed to operate by the CTA
- Recommendation 5: Continue to request airport representation as observers at future bilateral negotiations, immediately to influence a speedy conclusion to EC Open Skies negotiations which benefits Halifax, and to have YHZ designated in all future air bi-laterals
- Recommendation 6: Actively lobby Transport Canada/ Foreign Affairs/ International Trade to negotiate a cargo pre-clearance agreement with US

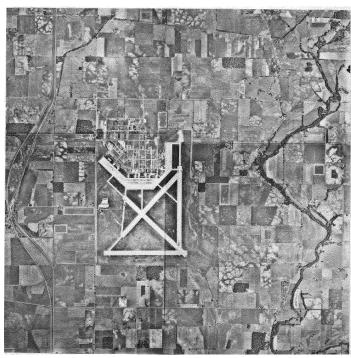




#### Rickenbacker International Airport

- Rickenbacker International Airport started life during WWII as Lockbourne Army Air Base. Named for the nearby village of **Lockbourne**, Ohio, just outside state capital of Columbus, hence the designator "**LCK**".
- Renamed for Eddie Rickenbacker a Columbus, Ohio native and WWI's most prominent air combat ace. Eddie became a prominent industry figure serving as head of Eastern Airlines for 3 decades.







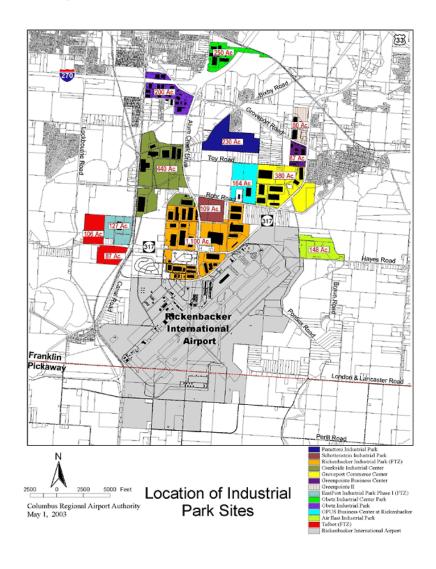




1950 2017



#### Columbus Rickenbacker - 2008 Market Conditions



- The area encompasses numerous industrial parks, more than 100 companies and over 30 million square feet of development
- Types of businesses at Rickenbacker (LCK) include cargo airlines, freight forwarders, logistics companies, etailers, corporate aviation businesses, manufacturers and distributors
- Since the Port Authority took over as operator of FTZ No. 138 in 1998, activity within the General Purpose Zone has increased by 190%
- LCK attracted direct freighter service from Japan in 2006 (Evergreen Airlines)



#### **LCK - Key Challenges - Historic**

- The Columbus Regional Airport Authority (CRAA) realized that much of the region's air cargo activity is accommodated by larger gateways
- However, large gateways can be burdened by congestion, both airspace, airside and groundside activities, and increasing costs
- CRAA increased its focus on the international segment of the cargo market and intense discussions with the freight forwarding community
- The Authority and partners developed several facilities designed specifically for the freight forwarder and consolidator companies
- Early successes:
  - EGL, FedEx (ground) and other companies to have sizeable operations at LCK
  - in 2006, Evergreen airlines and others began direct service to/from Asia, mainly as charters serving a specific market



#### Diversifying the cargo market in Columbus with ocean



- Norfolk Southern Rickenbacker Intermodal Terminal, opened March 10, 2008
- Allowed regional distribution and manufacturing operations to receive all of their freight in one geographically advantageous area.

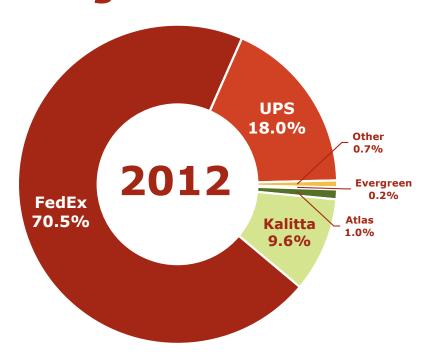


# Supporting roadway infrastructure completed ahead of growth

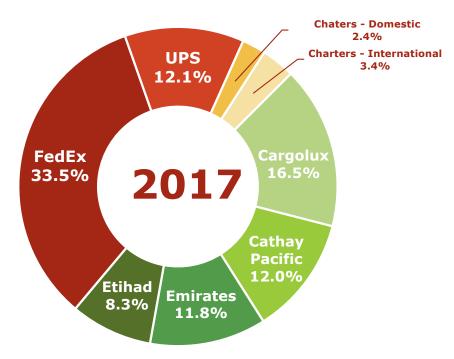




## Recent Air Cargo Growth and Market Share Changes



- Tonnage mix dominated by integrated carriers flying domestic routes, = 90 % of total air freight tonnage
- International service consisted of chartered flights for imports
- No international export activity



- 50/50 split between domestic / international tonnage
- International service consists of 15X weekly scheduled frequencies + extra charters
- All scheduled international carriers are taking export cargo, with exports growing quickly



## Recent International Cargo Growth



Wide body freighter arrivals from international points of origin.



### Rickenbacker keys to success thus far:

- Geography
- Original Strategic Vision
- Public and Political Support
- Situational Awareness and Realistic Expectations
- Continuing Leadership and Innovation
- Stakeholder Awareness and Inclusion
- Shipper Champions, and now Forwarder Champions
- Collaboration, Collaboration

**Resulting in:** a self-sustaining and growing transportation & supply chain logistics cluster, the benefit of which is a growing alternate gateway for the freighter community



# **Growing Your Business: Critical Lessons Learned**

**Edmonton International Airport** 

**February 20th, 2018** 



### **EIA Presentation Objectives:**

- Review challenges from comprehensive study related to EIA and recent economic downturns
- Edmonton market and regional update
- Edmonton International Airport strategic focus and airport cargo and commercial development update

## **Key challenges from 2007 comprehensive study: YEG**

- Airport was lacking air cargo facility space (warehouse and ramp, outside integrator space)
- YEG was under serviced by airline cargo capacity, competing airports moved close to 80% of YEG's outbound air cargo product
- Off airport air cargo consolidations were happening regularly
- Challenge getting freight forwarders to setup warehousing on airport for air consolidation shipments
- Competing air truck freight lanes, causing leakage from Edmonton catchment area

### Past economic challenges for Edmonton:

- Edmonton region went through an economic slowdown in 2008-09 with the oil and gas sectors
- Oil and gas markets in Alberta plunged in most recent recession 2014–16, largest on economic record for the province
- Oil and gas markets tied to most of the regions economic stability
- Limited economic diversity in the region, during the rollercoaster boom or bust

Edmonton Market Update

February 2018



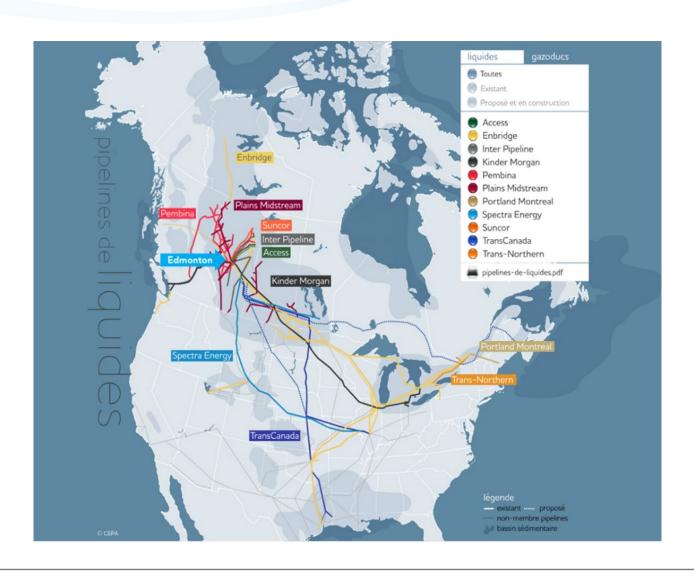
#### **Edmonton Is Growing**

- Growing population
- Diversified, modern economy
- Billions of dollars in projects including the Ice District, hotels, transportation infrastructure, office towers, entertainment centres and bridges





### YEG - North American Pipeline Hub



# Edmonton International Airport - Vision and Cargo Updates



### Vision, Mission, Goal & Values

## **VISION**

More flights to more places

## **MISSION**

Driving our region's economic prosperity through aviation and commercial development

**GOAL** 

10 million annual enplaned and deplaned passengers by 2025



#### **About - YEG**

Not-for-profit corporation Self-funded

not supported by taxes or public funds

No shareholders

After safety and security, EIA's core mandate is sustainable economic development that generates jobs

All revenue is reinvested into the core business-more than \$1 billion to date spent on infrastructure investments

Revenue comes from aeronautical sources (airline fees, AIF, etc.) and non-aeronautical sources (parking, concessions, land lease, etc.)

### **Facts About YEG**

EIA is Canada's 5<sup>th</sup> busiest airport by passenger traffic

EIA is Canada's most northerly 24-hour international airport and serves Alberta plus the North and the Arctic

### EIA has a diverse passenger market

- Tourism + Visiting friends and relatives (VFR) + education
- Business + technical + workers

### EIA infrastructure investments generate results:

- Best On Time Performance of Cdn Major Airports (Nov 2016)
- Industry-leading runway availability (99.41%)
- Industry-leading winter operations

## **Key drivers for success at EIA:**

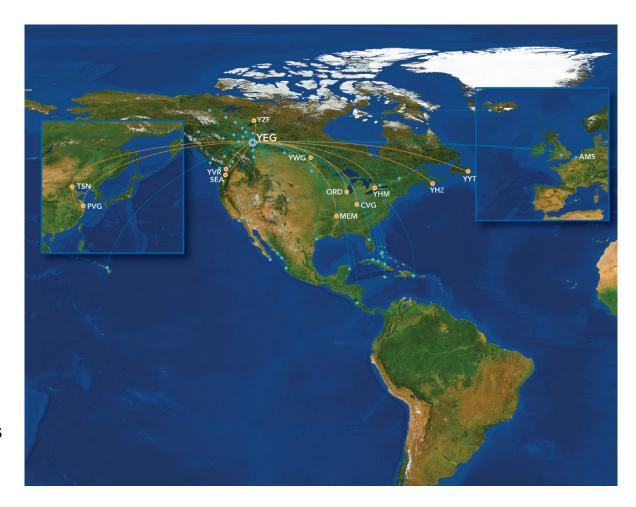
- EIA Executive Board, CEO and Senior Executives support growth in cargo and commercial development
- EIA management and SBU's work together as one team
- Flexible and resourceful practices are built in to the framework of the company
- Key SBU's connecting internationally to bring business and investment interest to Edmonton
- Working collaboratively with the Metro Edmonton region to showcase and build the airport's vision

### **Investment at YEG**

- Private investment in real estate under construction or committed exceeds \$550M
- Private investment completed and committed since 2012 exceeds \$750M
- EIA investment on site exceeds \$290M
- Total Private and EIA investment for the period 2013-2023 - over \$1 billion

## YEG Air Cargo Network Scheduled/Charter

- Air Bridge Cargo
- Air Canada
- Air China Cargo
- Air Atlanta
- AF/KLM
- Alaska Airlines
- American
- Atlas Air
- Cargojet (UPS)
- Delta
- DHL
- FedEx
- Icelandair
- Korean Air Cargo
- Lufthansa Cargo
- Nippon Cargo Airlines
- United
- Westjet



## **YEG - Broad Air Cargo Mix**













### YEG - Strong and diverse foundation for air cargo

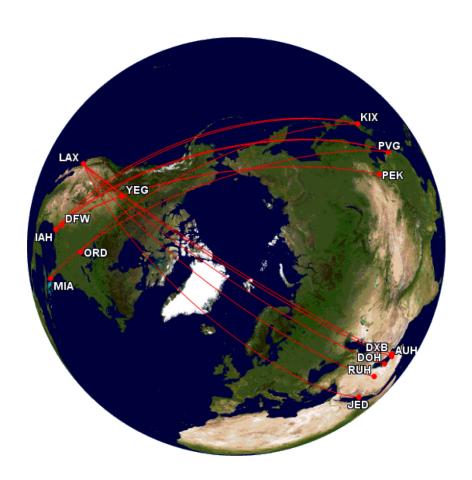
- Oil & Gas industry (bread and butter)
- Sustainable energy/technology & manufacturing
- E-Commerce products
- Perishables
- Agri-Foods
- Bio-Pharma (Cannabis / Hemp clustering)
- Life Sciences products
- Precious stones and metals
- General cargo





### **YEG** from the air

- Tech Stop Infrastructure Development
  - On airport pipeline expansion
  - 3 Fuel refineries within 45 minutes of airport producing Jet A fuel
  - 4<sup>th</sup> refinery in construction
- EIA sits atop 3<sup>rd</sup> largest known oil reserves in the world
- EIA community harvest, refines and distributes the resource, including Jet A



## YEG – on the ground Aerotropolis Development

"The 20th century was about cities building airports. The 21st century will be about airports building cities."

- Dr. John D. Kasarda

EIA is blessed with the largest land mass of any major airport in Canada, in excess of 7,000 acres.

Intentionally and deliberately executing Aerotropolis development

## **YEG - An Emerging Aerotropolis**

Recognized as an Aerotropolis by Prof. John Kasarda, due to:

- Largest airport real estate holdings in Canada.
- Exceptional infrastructure: road, rail, & air.



## **YEG Aerotropolis Development- Context**

### Real estate is used to accomplish several goals:

- Create a passenger/tourist destination
- Drive economic prosperity (job creation, revenue, etc.)
- Drive passenger growth
- Drive cargo growth

Build upon and develop industry clusters

Platform for Collaborative land development with surrounding municipalities

E-Commerce Cargo, Distribution & Logistics, FTZ



**Aviation Development** Alberta Aerospace & **Technology Centre** 

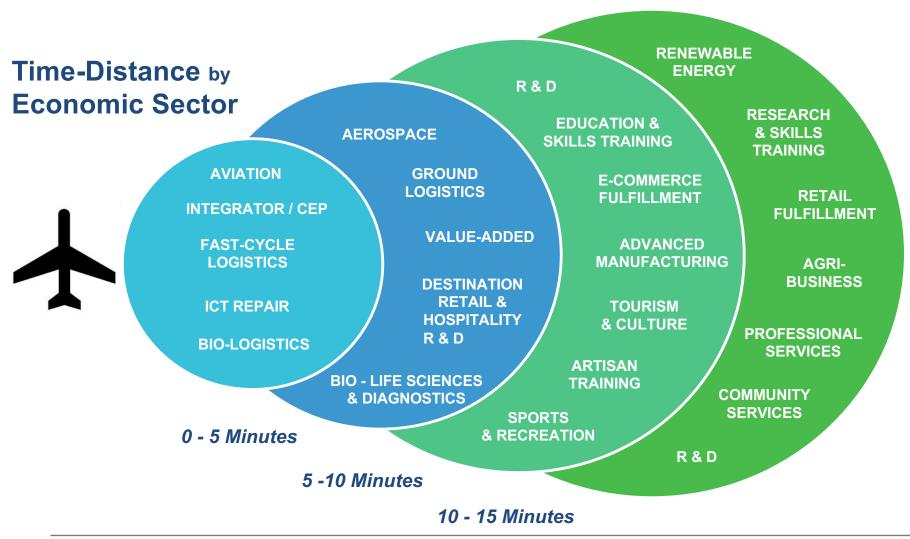
Aerotropolis Airport City



Industrial Development Agri-Products **Environmental Systems** 

**Destination Commercial** Retail, Hospitality, Recreational, Medical and Services

# **Aerotropolis / Airport Enabled Industry Sectors**



## **Commercial and Cargo Developments**



## **YEG - Casino & Horse Racing Facility**

Opening September 2018 (Horse race track 1.0 mile in length)



## **YEG - Premium Outlet Mall**

• Opening May 2018 (700,000 + sq./ft.)



### YEG: Bio-pharma & E-Commerce Distribution

Bio-pharma Facility (E-Commerce Distribution)

- 800,000 sq. ft. facility under construction
- Planned to open spring 2018
- Research, development and production facility
- Approx. 125-175 FT jobs planned



# YEG Logistics – Cargo / Warehouse Distribution

### Logistics Building

- Will be used to incubate small cargo related companies
- 25,000 sq.ft. with warehouse and office space
- In discussion with three tenants to move in once building is complete
- Opening March 2018





#### Aeroterm/Real term Global

- First phase 50,000 sq.ft. under construction
- Fully pre-leased to Swissport, ATS & Gate Gourmet
- Opened Fall 2017
- Second phase in planning stages for potential development



### **Terracap Developments**

- Opened 2014 new 50,000 square foot cargo integrator building with adjacent dedicated cargo apron
- Home to Cargojet, DHL, Purolator



#### Panattoni - Rosenau

- 211,000 sq.ft. warehouse Construction completed
  - Includes cold storage capacity
- Tenant operating in building
- Connectivity within 12 hours throughout Western Canada (Vancouver to Winnipeg) next day to airport/airlines





### CBSA (Customs) and Braden Burry Expediting

- Opened 2015 70,000 square foot airside cargo bonded, multi temperature warehouse
- Home to Canadian Border Services Agency (customs)
- Home to Braden Bury Expediting
  - Air France/KLM, Westjet Cargo, Icelandair Cargo, Canadian North Cargo, First Air Cargo and Air China Cargo.





## Alberta Aerospace & Technology Centre (YEG)

### Purpose to showcase, incubate and develop:

- Alberta Aerospace training, maintenance and technologies
- Advance technology and manufacturing in various forms of transportation
- Work with advanced and developing technologies including:
  - Aerospace, propulsion systems, space technologies satellites, etc., robotics, advanced manufacturing and nanotechnology, 3d printing, advanced agriculture and forestry, autonomous systems, commercial drone operations













# Alberta Aerospace & Technology Centre (YEG)

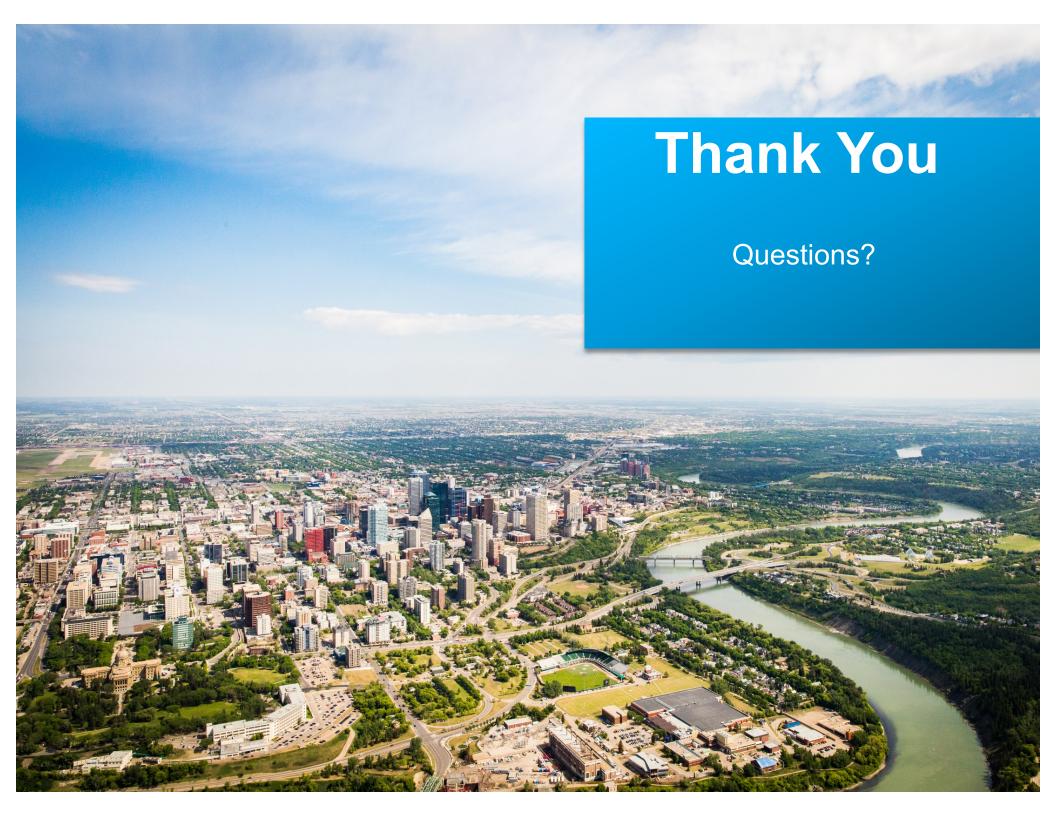




Airbus Helicopters AS350B2/H125 Level 7 FTD canadianhelicopters.com

# **EIA Real Estate Development video:**





### **Edmonton Video Link**

https://www.youtube.com/watch?v=wYTbUKo U2Yc&feature=youtu.be



