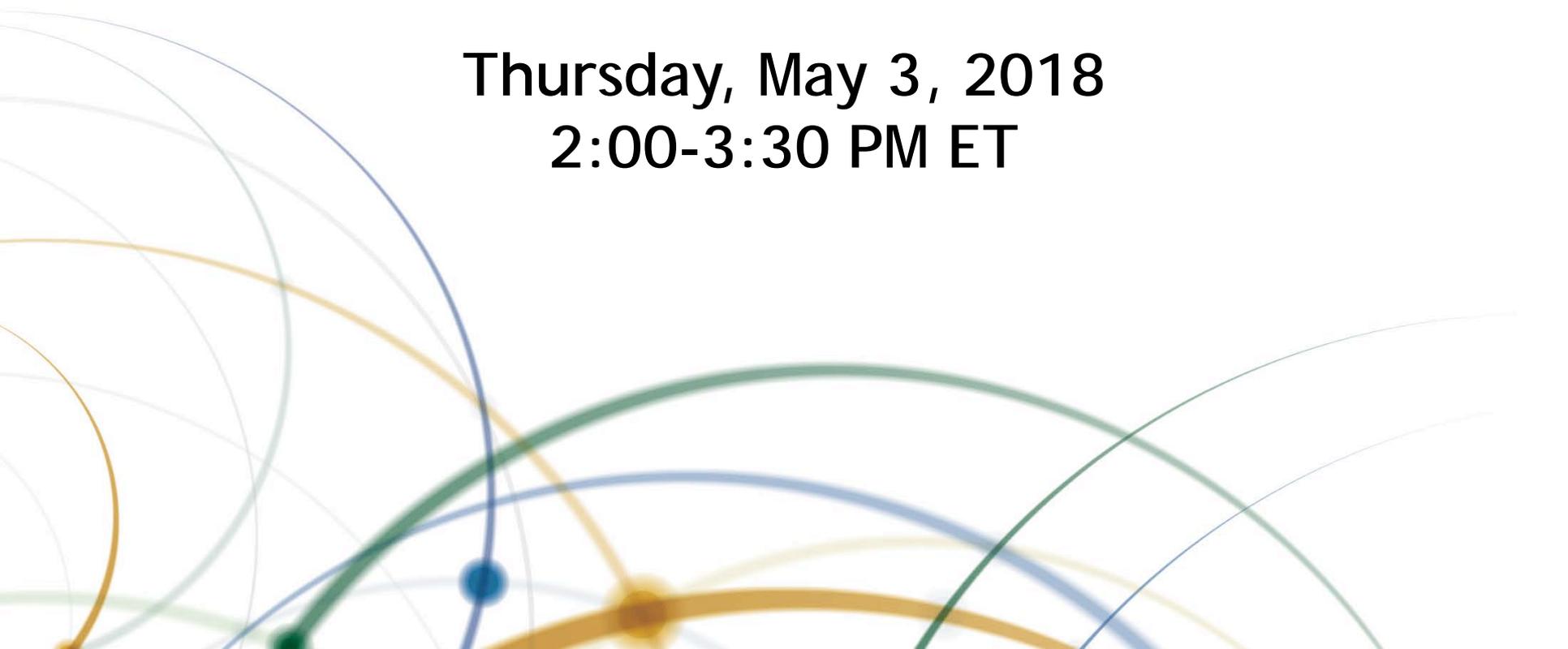


TRANSPORTATION RESEARCH BOARD

Air Cargo Facility Planning and Activities

Thursday, May 3, 2018
2:00-3:30 PM ET



Purpose

Discuss research from the [Airport Cooperative Research Program](#) (ACRP)'s [Report 143](#): Guidebook for Air Cargo Facility Planning and Development and [Synthesis 80](#): Estimating Truck Trip Generation for Airport Air Cargo Activity.

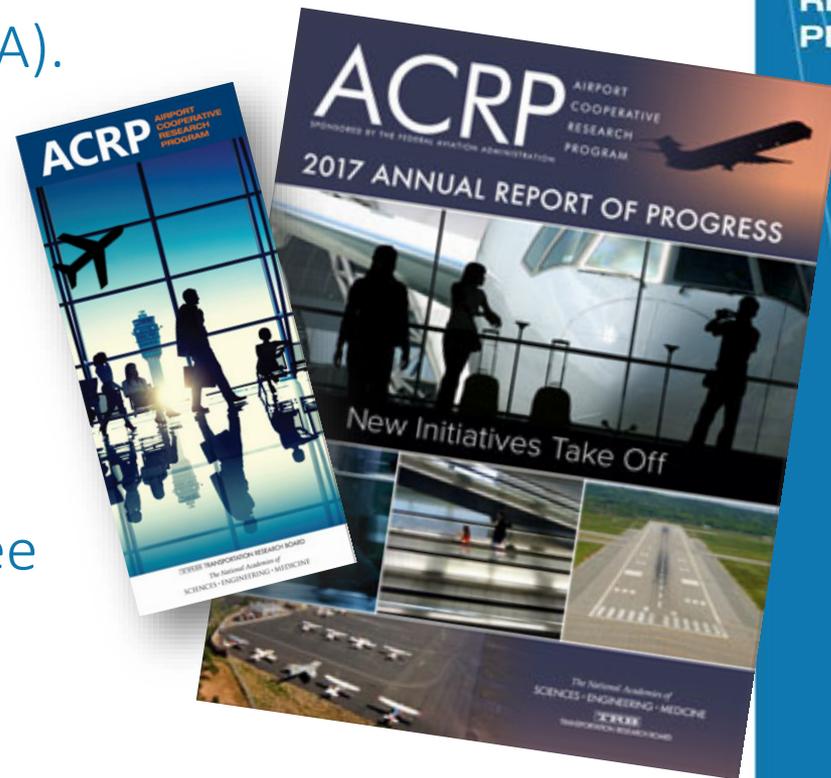
Learning Objectives

At the end of this webinar, you will be able to:

- Understand how a variety of air cargo businesses use airports and industry stakeholders' preferences for facilities and operations on airports
 - Understand how to use the Air Cargo Facility Planning Model
 - Understand the air cargo truck trip generation estimation methods
 - Identify data sources and options for researching truck trips associated with air cargo facilities
- 

ACRP is an Industry-Driven Program

- ✈ Managed by TRB and sponsored by the Federal Aviation Administration (FAA).
- ✈ Seeks out the latest issues facing the airport industry.
- ✈ Conducts research to find solutions.
- ✈ Publishes and disseminates research results through free publications and webinars.



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Five Ways to Get Involved!

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Other Ways to Participate

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Economic and Social Sustainability at Airports

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INSIGHT EVENT

May 7 - 8, 2018 | Washington, D.C.

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With interactive breakouts, networking opportunities, and plenary presentations, this engaging and groundbreaking forum will help airports and their stakeholders frame, plan, communicate, implement, and report social and economic initiatives to fully realize triple bottom line sustainability benefits.

Featuring...

- Dr. Davina Durgana – *anti-human trafficking expert*
- Dr. Steve Nakana – *airport social equity expert*
- Ted Howard – *community wealth building expert*

FREE Registration: tinyurl.com/sustainability-insight-event

Upcoming ACRP Webinars

May 17

Preventative Maintenance at
General Aviation Airports

June 12

Resources for Understanding Airport Air
Quality Management and Public Health

**Stay Tuned for Information on
ACRP's 2018 Summer and Fall Webinar Series**

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Additional ACRP Publications Available on Today's Topic

Web-Only Document 20: [Estimating the Economic Impact of Air Cargo Operations at Airports](#)

Synthesis 2: [Airport Aviation Activity Forecasting](#)

Report 146: [Commercial Ground Transportation at Airports: Best Practices](#)

Report 180: [Guidebook for Quantifying Airport Ground Access Vehicle Activity for Emissions Modeling](#)

Legal Research Digest 3: [Survey of Laws and Regulations of Airport Commercial Ground Transportation](#)

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Today's Speakers

Mike Maynard, Aviation, Inc.
and

Bryan Schreiber, Columbus Regional Airport Authority

Presenting

Report 143 - *Guidelines for Air Cargo Facility Planning
and Development*

Kaveh Shabani, RSG, Inc.
and

Peter Plumeau, Economic Development
Research Group, Inc.

Presenting

Synthesis 80 - *Estimating Truck Trip Generation
for Airport Air Cargo Activity*

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ACRP Report 143: A Guidebook for Air Cargo Facility Planning and Development

Mike Maynard

Aviation

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Michael K. Maynard

Principal Investigator

- Project Manager/Airport Planner, Aviation
- Former Network Planner/Schedules Analyst, DHL
- Former Air Cargo Station Manager, MarkAir



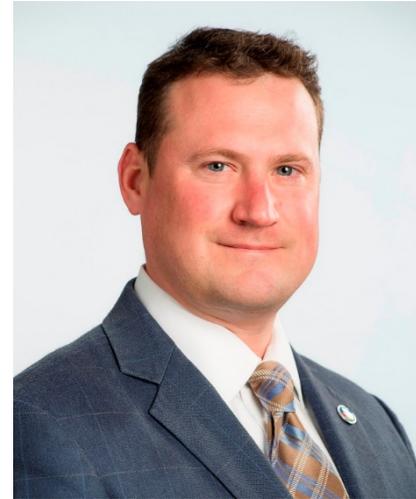
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Bryan Schreiber

ACRP 03-24, Study Participant

- Manager Business Development - Air Cargo at the Columbus Regional Airport Authority
- Former Manager Airport Operations - Business and Operational Performance at the Columbus Regional Airport Authority



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ACRP Report 143

Oversight Panel

Lawrence D. Goldstein, ACRP Senior Program Officer

Michael J. Bednarz, PANYNJ (Chair)

Jason J. Bittner, College of Engineering, University of Wisconsin

Rick R. Busch, Denver International Airport

Robert F. Caton, Prologis

Brandon L. Fried, Air Forwarders Association

Liyong Gu, Airports Council International, North America

Curt W. Heaslet, FedEx Express, Memphis TN

Max Kiesling, Ricondo & Associates

Chris Hugunin, Federal Aviation Administration Liaison

Joedy W. Cambridge, Transportation Research Board Liaison

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ACRP Report 143: *A Guidebook for Air Cargo Facility Planning and Development*

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- Develop guidelines for air cargo facility planning and development at airports, including collection of necessary data in support of this effort.
- Assist airport operators in crafting effective business policies and development decisions that meet the industry's current/future technological, operational, and security challenges.
- Cost-effective, efficient, and environmentally compatible manner.
- Include updated metrics to help guide the overall air cargo development planning process.
- Beneficiaries: Airport owners and operators, airport planners and engineers, airlines, integrated cargo carriers, developers, financial institutions, and others.
- Published 2015

Research Problem

- Provide understanding of air cargo stakeholders
- Conduct literature review
- Research needed for cargo throughput metrics for:
 - Cargo buildings
 - Dedicated cargo apron
 - Truck parking
- Provide a facility planning model to assist planners in determining facility spatial needs based on air cargo carrier type
- Provide strategies on building funding, sustainability and Security.

Facility Planning - Cargo Carriers

Knowing the type of current, or potential, air cargo activity at an airport is key to planning cargo facilities

- Integrated express – FedEx, UPS, and DHL
- Pax airline belly cargo – DL, UA, AA, etc.
- Cargo only carriers (Freighters) - CargoLux



Facility Planning - Cargo Carriers

Knowing the type of current, or potential, air cargo activity at an airport is key to planning cargo facilities

- Third party handlers – Swissport, Menzies
- Forwarders (on- and off-airport facilities) -
Kuhne+Nagel (K+N), Panalpina
- Regional Air Cargo Carriers – Mountain Air Cargo



Air Cargo Facility Type, Location and Layout

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Airports provide several types of air cargo support facilities

- Multi-tenant cargo building
- Single-tenant cargo building
- Dedicated air cargo ramp and hardstands
- Truck parking area



Air Cargo Facility Type, Location and Layout

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Airports provide several types of air cargo support facilities

- Consolidated cargo complex
- Cargo area road network and signage



Air Cargo Facility Research

Research focused on identifying the various facility size requirements by carrier type and developing air cargo facility size averages based on annual cargo traffic (tonnage). Data collected via survey and field visits to 16 case study airports included:

- Over 400 cargo units analyzed
- Building size (all cargo buildings)
- Throughput/cargo traffic in annual tons
- Utilization (Tons/Square Feet)
- Commodity types
- Geographic location (warmer climates impact facilities)
- Type of carriers
- Domestic and International Gateway Airports

Facility Planning Model

- Facility Size Calculator
 - Cargo buildings
 - Apron area
 - Hardstand, GSE Storage
 - Truck parking
 - Truck docks and doors
 - Acreage
 - Long term planning
- Validation process
- Guidelines development
- Follows Master Plan Process
 - Inventory
 - Forecast
 - Facility Requirements

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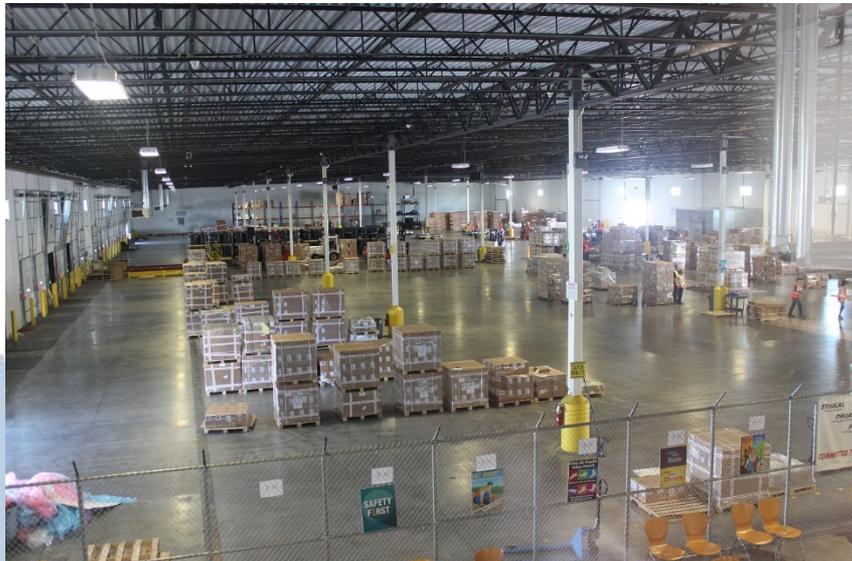
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Facility Planning Model

- All air cargo facilities (buildings, apron areas, and vehicle parking) on an airport.
- A single air cargo facility (building, apron, and vehicle parking) on an airport.
- An integrated express air cargo hub.
- Determining whether current air cargo facilities currently offer adequate space.
- Determining future air cargo facility needs.

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Facility Planning Model

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	A	B	C	D	E	F	G	H	I	J	K	L
	Cargo Building Name	Usage	Tenant Names	Tenant Type	Building/Warehouse Space (sq ft)	Dedicated Ramp/Aircraft Hardstand Area	Dedicated Ground Service Equipment [GSE] Storage (sq ft)	Total Apron (sq ft)	Landside Truck and Auto Parking (sq ft)	Number of Landside Truck Docks/Doors	Number of Airside Truck Docks/Doors	
2	Building A	Cargo Related	ABC Express	Integrated Express	50,000	100,000	80,000	180,000	22,000	7	2	
3	Building A	Cargo Related	XYZ Airlines	Passenger Airline Belly Cargo	50,000	-	50,000	50,000	100,000	6	5	
4	Building A	Cargo Related	A1 Freight Services	Third Party Handler	60,000	60,000	40,000	100,000	65,000	10	5	
5	Building A	Cargo Related	Red Express	Integrated Express	10,000	26,000	47,000	73,000	63,000	9	3	
6	Building A	Cargo Related		Vacant	5,000	5,000	10,000	15,000	25,000	4	4	
7								-				
8								-				
9								-				
10								-				
11								-				
12								-				
13								-				
14								-				
15								-				
16								-				
17								-				
18								-				
19	Total			Integrated Express	60,000	126,000	127,000	253,000	85,000	16	5	
20	Total			Passenger Airline Belly Cargo	50,000	-	50,000	50,000	100,000	6	5	
21	Total			All Cargo Carriers	-	-	-	-	-	-	-	
22	Total			Third Party Handler	60,000	60,000	40,000	100,000	65,000	10	5	
23	Total			Combi Carriers (Passenger and Freighter)	-	-	-	-	-	-	-	
24	Total			Integrated Express - Hub	-	-	-	-	-	-	-	
25	Total			Vacant	5,000	5,000	10,000	15,000	25,000	4	4	
26	Total			Non Cargo Related	-	-	-	-	-	-	-	
27	Total				175,000	191,000	227,000	418,000	275,000	36	19	



Facility Planning Model

	A	B	C	D	E
1		Annual Tons - Base Year			
2		2018			
3					
6		Total Annual Tonnage (In US tons)			
7		100,000.0			
8					
9		Tonnage Market Share (US Tons)			Annual Tonnage
11		Integrated Express	45%		45,000.0
13		Passenger Airline Belly	25%		25,000.0
15		All Cargo Carriers	0%		0.0
17		Third Party Handler	30%		30,000.0
19		Combi Carriers (Passenger and Freighter)	0%		0.0
21		Integrated Express Hub	0%		0.0
22					
23			100%		100,000.0
24					
28					

Facility Planning Model

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	A	B	C	D	E	F	G
1			Total Annual Tonnage in US Tons				
2		Forecasted Year 5 Annual Tonnage	110,000.0				
3		Forecasted Year 10 Annual Tonnage	120,000.0				
4		Forecasted Year 20 Annual Tonnage	140,000.0				
5							
6							
7							
8							
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17							
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19							
20							
21							
22							

	Market Share Assumption			
	Base Year	5-Year	10-year	20-year
Integrated Express	45%	45%	50%	50%
Passenger Airline Belly	25%	25%	20%	20%
All Cargo Carriers	0%	0%	0%	0%
Third Party Handler	30%	30%	30%	30%
Combi Carriers (Passenger and Freighter)	0%	0%	0%	0%
Integrated Express Hub	0%	0%	0%	0%
		100%	100%	100%



Facility Planning Model

- **Matrix development**
 - Air cargo facility size
 - Tenant type
 - Average tonnage
 - Location
- **Throughput ratios**
- **Annual Tons/sf**

	A	B	C	D	E	F	G
2		RATIO INPUTS (Tons/Square Feet)	Integrated Express	Hub-Integrated Express	Passenger Airline (Belly Cargo)	All Cargo Carriers	Combi Carriers (Passenger and Freighter)
3		Warehouse					
4		Domestic	0.92	1.00	0.64	0.81	0.81
5		International Gateway	0.37	1.00	0.64	0.81	0.81
7		Aircraft Parking Ramp					
8		Domestic	0.40	0.20		0.40	0.40
9		International Gateway	0.40	0.20		0.91	0.91
10		GSE Storage					
11		General (Domestic or Int'l)	0.57	0.20	0.36	1.11	1.11
13		DEFAULT RATIOS BASED ON ACRP 03-24 RESEARCH (Tons / Square Feet)	Integrated Express	Hub-Integrated Express	Passenger Airline (Belly Cargo)	All Cargo Carriers	Combi Carriers (Passenger and Freighter)
14		Warehouse					
15		Domestic	0.92	1.00	0.64	0.81	0.81
16		International Gateway	0.37	1.00	0.64	0.81	0.81
18		Aircraft Parking Ramp					
19		Domestic	0.40	0.20		0.40	0.40
20		International Gateway	0.40	0.20		0.91	0.91
21		GSE Storage					
22		General (Domestic or Int'l)	0.57	0.20	0.36	1.11	1.11
24		RANGE OF TONS/SF BASED ON ACRP 03-24 RESEARCH	Integrated Express	Hub-Integrated Express	Passenger Airline (Belly Cargo)	All Cargo Carriers	Combi Carriers (Passenger and Freighter)
25		Warehouse					
26		Domestic	.46 to 1.84	.40 to 1.80	.32 to 1.28	.41 to 1.63	.41 to 1.63
27		International Gateway	.19 to .74	.40 to 1.80	.32 to 1.28	.41 to 1.61	.41 to 1.61
29		Aircraft Parking Ramp					
30		Domestic	.20 to .8	.15 to .4		.20 to .8	.20 to .8
31		International Gateway	.20 to .8	.15 to .4		.46 to 1.82	.46 to 1.82
32		GSE Storage					
33		General (Domestic or Int'l)	.29 to 1.15	.15 to .4	.18 to .71	.55 to 2.22	.55 to 2.22

Facility Planning Model

USE THIS REPORT FOR DOMESTIC AIRPORTS										
Air Cargo Facilities Size Calculator		Baseline	Forecasted Year 5 Annual Tonnage	Forecasted Year 10 Annual Tonnage	Forecasted Year 20 Annual Tonnage	Baseline	Forecasted Year 5 Annual Tonnage	Forecasted Year 10 Annual Tonnage	Forecasted Year 20 Annual Tonnage	
DOMESTIC AIRPORTS		Tonnage	100,000	120,000	140,000	100,000	-	120,000	140,000	
Integrated Express Carriers		Year	2018	5-Year	10-year	20-year	2018	5-Year	10-year	20-year
	Existing Space	Required Space to Meet Demand	Forecasted Required Space	Forecasted Required Space	Forecasted Required Space	Base Year Difference	5-Year Surplus or Deficient Space	10-Year Surplus or Deficient Space	20-Year Surplus or Deficient Space	
Cargo Building Space (sf)	60,000	48,913	53,804	65,217	76,087	11,087	6,196	(5,217)	(16,087)	
Aircraft Ramp area (sf)	126,000	112,500	123,750	150,000	175,000	13,500	2,250	(24,000)	(49,000)	
Paved GSE Storage (sf)	127,000	78,300	86,130	104,400	121,800	48,700	40,870	22,600	5,200	
Total Apron (sf)	253,000	190,800	209,880	254,400	296,800	62,200	43,120	(1,400)	(43,800)	
Truck and Auto Parking (sf)	85,000	88,043	98,336	119,196	139,061	(3,043)	(13,336)	(34,196)	(54,061)	
Total Space in Square Feet (sf)	398,000	327,757	362,021	438,813	511,948	70,243	35,979	(40,813)	(113,948)	
Total Space in Acres	9.1	7.5	8.3	10.1	11.8	1.6	0.8	(0.9)	(2.6)	
	Existing Units	Required Units to Meet Demand	Forecasted Required Units	Forecasted Required Units	Forecasted Required Units	Base Year Difference (Units)	5-Year Surplus or Deficient Units	10-Year Surplus or Deficient Units	20-Year Surplus or Deficient Units	
Total Truck Docks/Doors	43	33	36	43	51	10	7	(0)	(8)	
Number of Landside Truck Docks/Doors	38	24	27	33	38	13.5	11.1	5.4	(0.0)	
Number of Airside Truck Doors	5	8	9	11	13	(3.2)	(4.0)	(5.9)	(7.7)	

Facility Planning Model

TOTAL			5-Year	10-year	20-year		5-Year	10-year	20-year
	Existing Space	Required Space to Meet Demand	Forecasted Required Space	Forecasted Required Space	Forecasted Required Space	Base Year Difference	5-Year Surplus or Deficient Space	10-Year Surplus or Deficient Space	20-Year Surplus or Deficient Space
Cargo Building Space (sf)	175,000	125,021	137,524	147,137	171,660	49,979	37,476	27,863	3,340
Aircraft Ramp area (sf)	191,000	187,500	206,250	240,000	280,000	3,500	(15,250)	(49,000)	(89,000)
Paved GSE Storage (sf)	227,000	175,550	193,105	204,240	238,280	51,450	33,895	22,760	(11,280)
Total Apron (sf)	418,000	363,050	399,355	444,240	518,280	54,950	18,645	(26,240)	(100,280)
Truck and Auto Parking (sf)	265,000	225,038	249,031	266,652	312,523	39,962	15,969	(1,652)	(47,523)
Total Space in Square Feet (sf)	858,000	713,110	785,909	858,029	1,002,463	144,890	72,091	(29)	(144,463)
Total Space in Acres	19.7	16.4	18.0	19.7	23.0	3.3	1.7	(0.0)	(3.3)
	Existing Units	Required Units to Meet Demand	Forecasted Required Units	Forecasted Required Units	Forecasted Required Units	Base Year Difference (Units)	5-Year Surplus or Deficient Units	10-Year Surplus or Deficient Units	20-Year Surplus or Deficient Units
Total Truck Docks/Doors	77	83	92	98	114	(6)	(15)	(21)	(37)
Number of Landside Truck Docks/Doors	58	63	69	74	86	(4.5)	(10.8)	(15.6)	(27.8)
Number of Airside Truck Doors	19	21	23	25	29	(1.8)	(3.9)	(5.5)	(9.6)

Rickenbacker Development Area

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Model Validation

Rickenbacker International

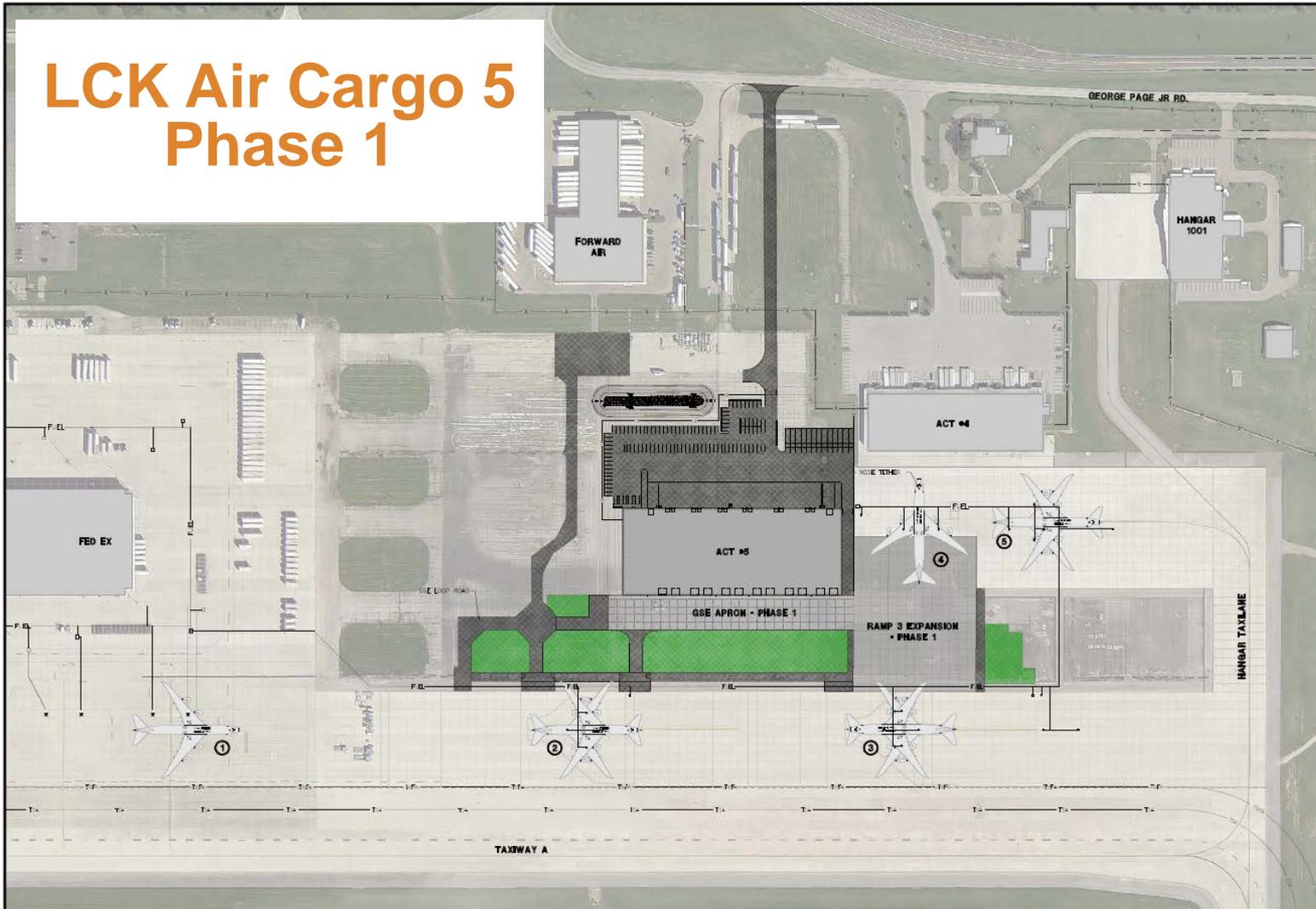
- In late 2014 with international freighter service growing at Rickenbacker International Airport (LCK) the Columbus Regional Airport Authority identified a need for new air cargo terminal space
- Many consultants and operators used simplified equations for space needs, other components were based on best guess, or general warehousing parameters
- The ACRP model was employed in Beta-testing form to estimate air cargo terminal space and associated aircraft parking and truck dock needs based on an international gateway model
- Through the model a phased approach was developed based on forecasted activity
- Phase 1 of Rickenbacker's new "Air Cargo 5" terminal was opened on June 1st, 2016
- Capacity has generally matched the projected throughput capability

The ACRP Model was used exclusively to come up with estimated new warehouse space needs

**2015-16 Demand Forecast +
Space required to support international air cargo operations at Rickenbacker**

Airline	Equipment	Usable Tonnage (each way)	Weekly Frequency	Offload Handled per Flt	Onload Handled per Flt	Total Weekly Tonnage	Annual Throughput	Warehouse Space Needs
Base Scenario 1 – Current activity without consideration for charters								
Cathay	747-8F	125	3 x / wk.	0	30 t	90 t	9,360 t	12,794 sq. ft.
Cargolux	747-8F	125	3 x / wk.	0	30 t	90 t		
Base Scenario 2 – 2Q 2015 – Prospective								
Cathay	747-8F	125	3 x / wk.	10 t	30 t	120 t	19,240 t	26,298 sq. ft.
Cargolux	747-8F	125	3 x / wk.	10 t	30 t	120 t		
Atlas	747-400F	110	1 x / wk.	100 t	30 t	130 t		
Base Scenario 3 – 4Q 2015 – Prospective								
Cathay	747-8F	125	3 x / wk.	15 t	50 t	195 t	34,060 t	46,555 sq. ft.
Cargolux	747-8F	125	3 x / wk.	15 t	35 t	150 t		
Atlas	747-400F	110	1 x / wk.	100 t	30 t	130 t		
Emirates	777F	100	2 x / wk.	60 t	30 t	180 t		
Base Scenario 4 – by mid-2016 – Prospective								
Cathay	747-8F	125	5 x / wk.	15 t	50 t	325	57,460 t	78,540 sq. ft.
Cargolux	747-8F	125	5 x / wk.	15 t	35 t	250		
Atlas	747-400F	110	2 x / wk.	100 t	30 t	260		
Emirates	777F	100	3 x / wk.	60 t	30 t	270		

LCK Air Cargo 5 Phase 1



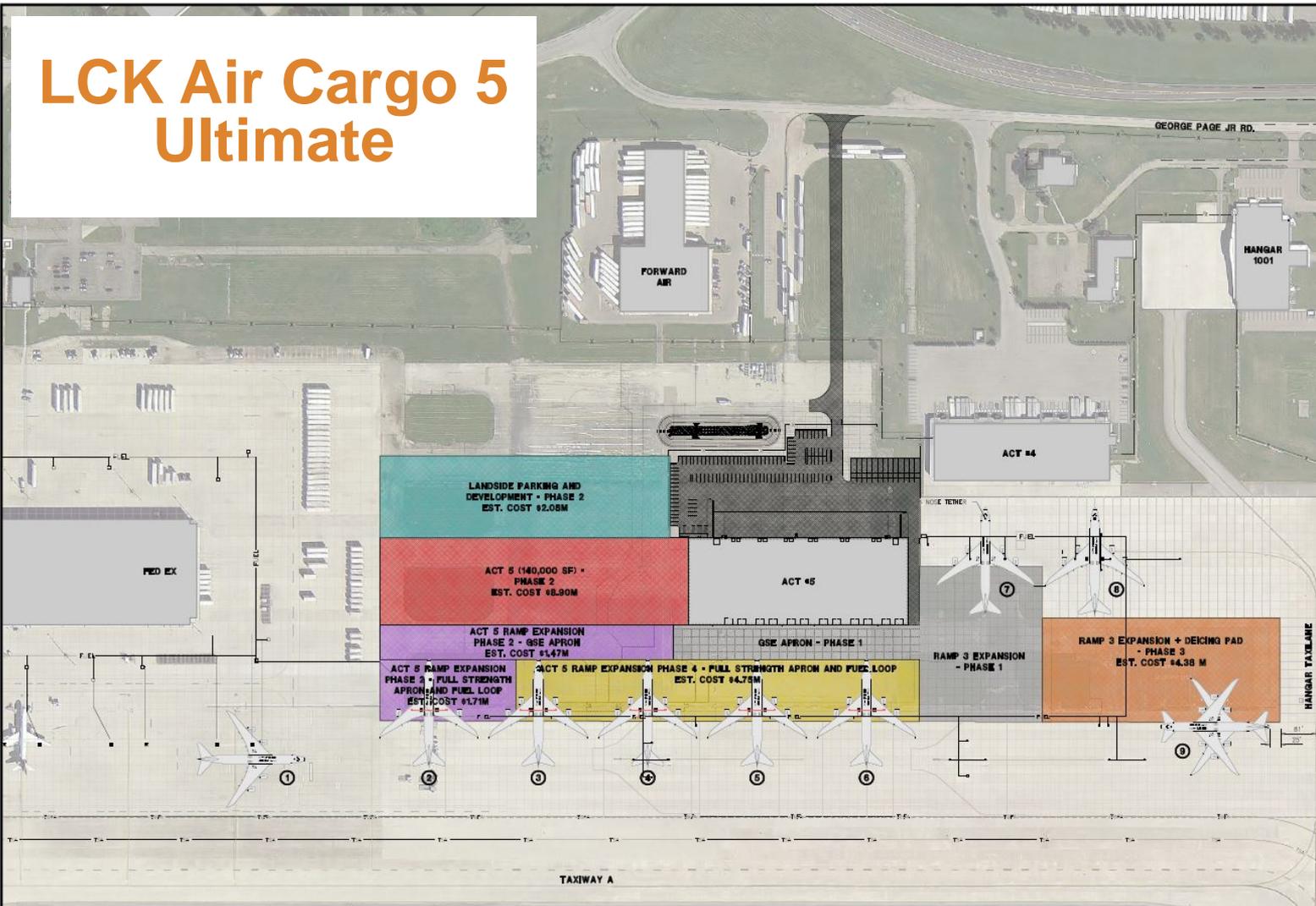
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LCK Air Cargo 5 Ultimate

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The ACRP Model Validation

Some Lessons Learned:

- Without the ACRP model, we had overestimated how many aircraft parking spaces were needed
 - With the use of the model we were able to pare back expensive parking apron and fuel hydrant construction saving/deferring over \$7 million
- For international gateway operations, export build-up requires much more space than import throughput
 - Reason being is that while imports move straight through in a relatively minimal time period;
 - exports arrive over a period of several days to even a week and must be stored awaiting the flight

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The ACRP Model Validation

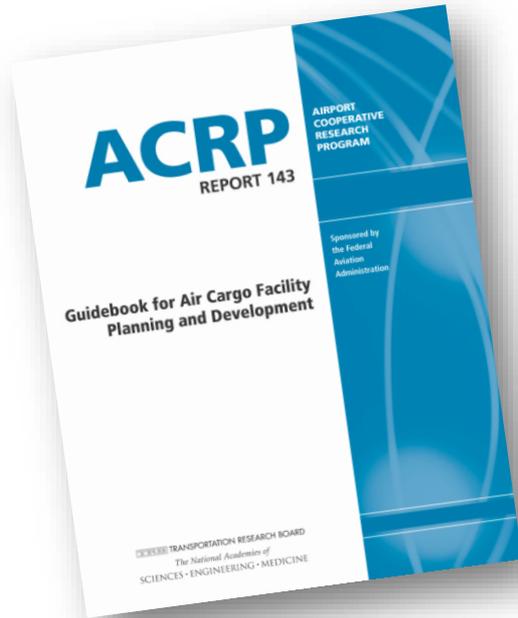
Some Lessons Learned:

- Handling capacity can be extended by going vertical with storage racking
- Capacity can also be extended by protective overhangs on the airside of the building utilized for storage of freight out of the weather
- We underestimated the demand for office space interest for stakeholders – i.e. airlines, forwarders, terminal operator and associated companies
 - What was originally 10,000 s.f. of office, grew into 18,000 s.f. on two levels
 - Rental rates for office assist with ROI
- No matter what the numbers say, you can never have too many landside truck docks + overflow parking / staging for trucks and trailers

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For additional information:



ACRP Report 143

A Guidebook for Air Cargo Facility Planning and Development

- Mike Maynard
 - Mike.Maynard@Jviation.com

<http://www.trb.org/Main/Blurbs/173274.aspx>

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ACRP Synthesis 80: Estimating Truck Trip Generation for Airport Air Cargo Activity



Peter Plumeau, EDR Group
Kaveh Shabani, RSG

Peter Plumeau

Principal Investigator

- Vice President, EDR Group
- Former MPO Director
- Former Airport Commissioner
- Member, TRB Air Cargo Subcommittee



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Kaveh Shabani

Senior Staff Member and Consultant

- Consultant, RSG
- Member, TRB Standing Committee on Freight Data
- Expert in Freight Data and Freight Modeling
- Model Developer for Advanced Freight Forecasting Models (e.g. FHWA National Freight Model)



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ACRP Report 80 Oversight Panel

- Sarah Drobis, Gibson Transportation Consulting, Inc., Los Angeles, CA
- William S. Kuttner, Boston Region Metropolitan Planning Organization
- Robert Lewandowski, UPS Airlines, Louisville, Kentucky
- Peter Mandle, InterVISTAS, Burlingame, CA
- Bryan Schreiber, Columbus Regional Airport Authority, Columbus, OH
- Mark A. Thorpe, Ontario International Airport Authority, Ontario, CA
- Paul Tronsor, FedEx Express, Memphis, TN
- Ashley Sng, Airports Council International–North America (Liaison)
- Gail R. Staba, ACRP Senior Program Officer

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**AIRPORT
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ACRP Report 80: *Estimating Truck Trip Generation for Airport Air Cargo Activity*

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- Provides contextual information on air cargo facilities, operations, and trends
- Documents research literature and practices related to understanding air cargo-related truck trip generation
- Summarizes results of structured interviews with experts and industry officials (public and private) across the country
- Presents detailed case studies of air cargo-related truck trip analysis and planning at three major airports
- Synthesizes results into issues and considerations including state of the practice, needs and gaps, and research needs
- Provides checklist of considerations associated with air cargo-related truck trip data and suggested data sources
- Published 2017

Research Problem

- Growth of value, volume, and importance of air cargo
- Under-researched issue (air cargo-truck movements)
- Only a handful of highly localized efforts
- Difficult to obtain the necessary data
- Access to such information could help:
 - Airport planning and operation (existing and future)
 - Reliable and safe truck access and egress in airports
 - Appropriate investments by accounting for air cargo's impacts



Source: www.jifnet.com

Approach



A. Literature Review

- Academic research
- Practitioner reports and planning documents
- Technical guides and reports

B. Structured Interviews

- Air cargo facility experts
- Airport planning and air cargo officials
- Air cargo carriers officials



Approach

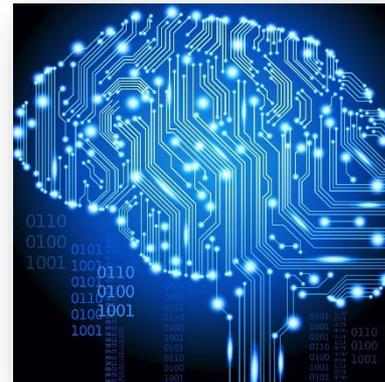


C. Case Studies

- Atlanta Hartsfield-Jackson International (ATL)
- Los Angeles International (LAX)
- Memphis International (MEM)

D. Distillation and Synthesis

- State of the Practice
- Current and Future Needs and Gaps
- Research Needs
- Guidance on Data Considerations and Sources



Key Findings

(from literature review and interviews)

- The greater emphasis on passenger traffic has led to less interest in understanding the air cargo facilities truck trips.
- There is need in understanding the nature of truck traffic at, to and from airports and air cargo facilities
- Used for overall master planning, new facilities development, infrastructure planning, etc.
- Barriers to pursuing such efforts (e.g. relatively costly and resource-intensive data collection)



Source: www.cargocollective.com

Key Findings

(from case studies)

- Large freight hub airports and air cargo facility developers do not generally conduct truck trip generation analyses when building or expanding a facility unless required to do so by relevant authority.



Source: www.realterm.com



Source: www.kaessbohrer.com

- The studied airports contain large-scale cargo facility areas and move significant amounts of freight. However, it appears that passenger traffic congestion receives the majority of public and airport attention.

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Key Findings

(from case studies)

- The approach employed in the 1990 LAX Airport Study may have applicability to a wider spectrum of airports.
- The “trucks per ton” method was employed for LAX 2010 truck trips using data available through the LAX traffic generation reports and compared the results with actual traffic counts.



- This resulted in reasonable and comparable truck trips per day when using a trucks per ton approach for estimating air cargo terminal truck trip generation rates.

Key Findings

- The principal gap in existing practices is the lack of availability of current and usable data on air cargo truck trips.
- It is likely that the limited resources available to understand airport ground traffic are allocated mainly to passenger operations.
- The most robust and precise data for air cargo facilities is generally collected and maintained by private air cargo carrier firms, and is considered proprietary and confidential.



Key Findings

Checklist of considerations that planners can use to identify possible information and data sources. (not exhaustive nor appropriate for every situation)



- A. What are the air cargo tonnages handled by the airport?
- All-cargo carriers
 - Belly cargo
 - Integrated express carriers

(Note: Airport-published/maintained air cargo tonnage reports may be used along with truck count data to calculate truck trip generation rates of air cargo facilities.)

- B. What are the air cargo flows at the airport? Where is cargo coming from and going to?
- C. What entities (agencies, offices, firms) hold/maintain the data?
- D. What are the truck trip counts and classifications (truck types) associated with the air cargo facility?
- E. What are the different types of air cargo handled at air cargo facilities?
- F. What percentage of truck movements are truck-truck transfers and what percentage are to/from airport and to/from locations outside the airport?
- G. How will the region's economic status/growth affect air cargo demand at the airport?

Practical Application



- Engage with airport officials to address the shortage of useful data by conducting joint studies and data collection (e.g., truck counts on air cargo access roads)
- Be patient and flexible if seeking data from air cargo service providers and operators

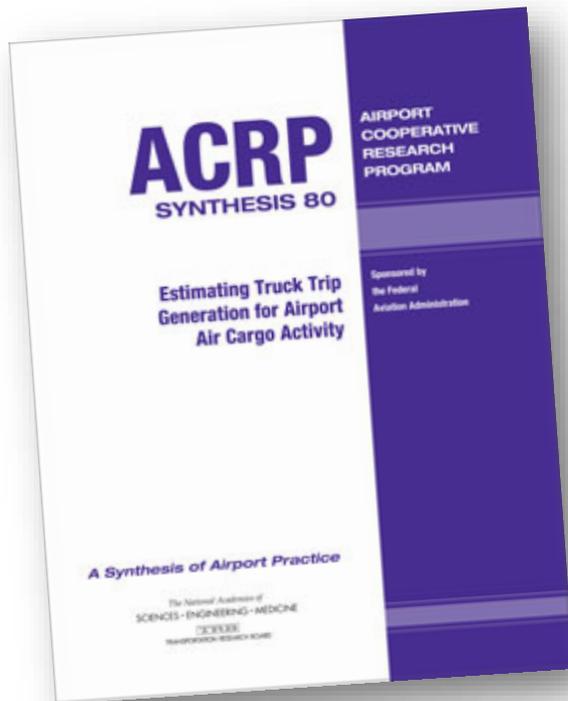


Practical Application



- Pay attention to the operational reliability of key airport access routes that support transport of typically high value and time-sensitive air cargo
- Make highway planning more effective by recognizing that a significant amount of air cargo moves by truck over relatively long distances (e.g., Buffalo to JFK)

For additional information:



ACRP Report 80 *Estimating Truck Trip Generation for Airport Air Cargo Activity*

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<http://www.trb.org/Publications/Blurbs/176358.aspx>

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Panelists Presentations

<http://onlinepubs.trb.org/onlinepubs/webinars/180503.pdf>

After the webinar, you will receive a follow-up email containing a link to the recording

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