TRANSPORTATION RESEARCH BOARD

Training Operations Personnel at Small Airports

September 13, 2021

@NASEMTRB
#TRBWebinar

Learning Objectives

1. Discuss training methodologies

2. Describe all aspects of training, including styles, motivations, curriculum design, training topics, methods, and budgets

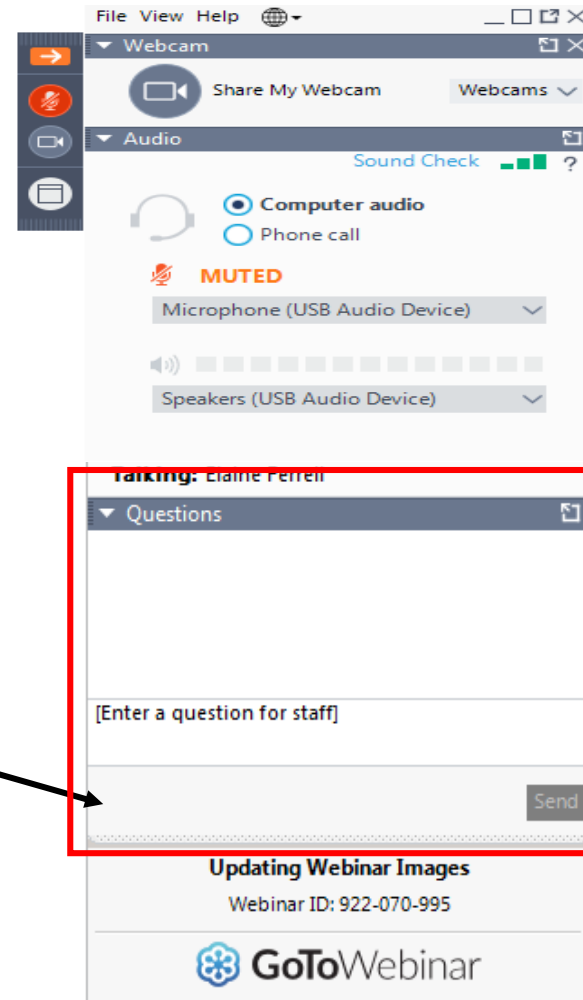# American Association of Airport Executives (AAAE)

1.0 Continuing Education Units (CEUs) are available to Accredited Airport Executives (A.A.E.)

Report your CEUs: www.aaae.org/ceu

Questions and Answers

- Please type your questions into your webinar control panel

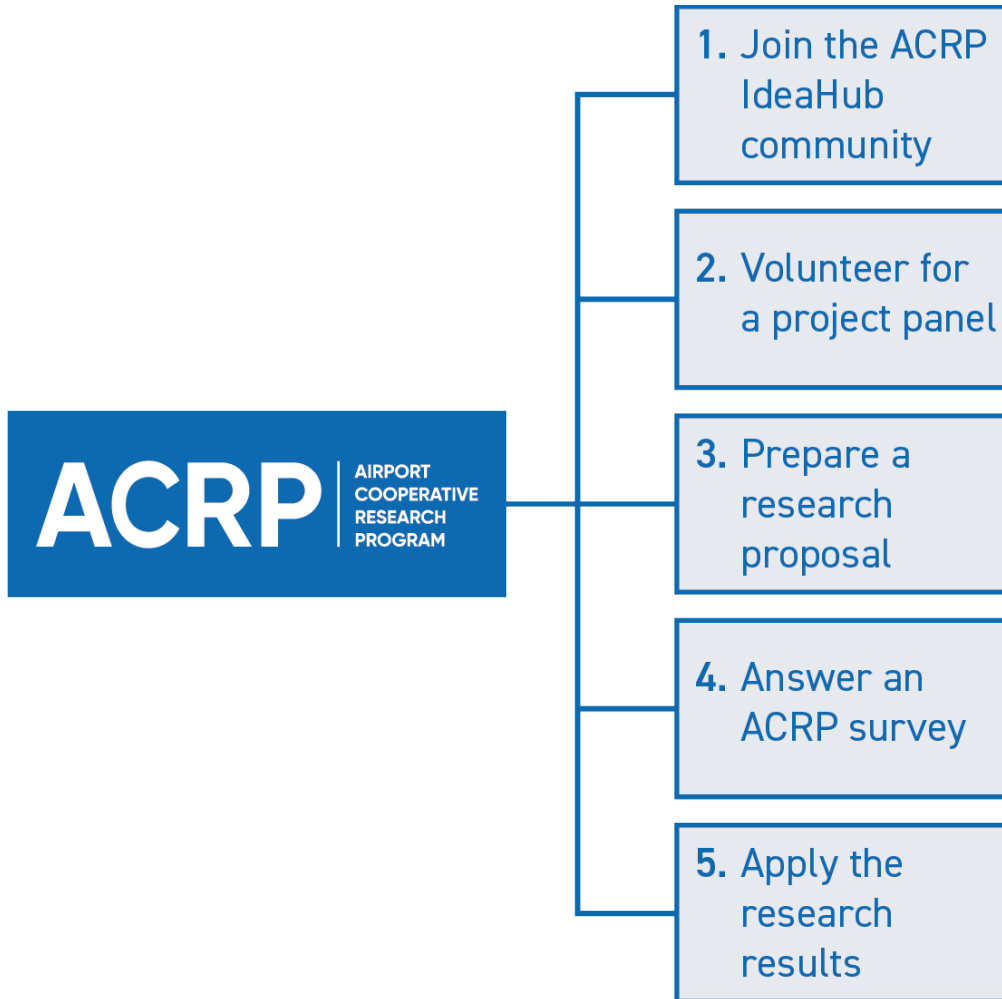- We will read your questions out loud, and answer as many as time allows

Adam Wolf
The Ohio State University Airport

- ✈ OSU Airport -Airport Director.
- ✈ Embry-Riddle Aeronautical University-2006. BS Aeronautics, Minors in Aviation Business, Aviation Safety and Meteorologically
- ✈ AAAE- CM, ACE Ops, ACE Security
- ✈ Private Pilot w/Instrument Rating
- ✈ UAS 107 Operator
- ✈ Certified Weather Observer
- ✈ Previous Experience
  - ▪ CMH – Airport Operations
  - ▪ PANYNJ- Airport Operations and Finance roles

Five Ways to Get Involved!

ACRP | AIRPORT COOPERATIVE RESEARCH PROGRAM

1. Join the ACRP IdeaHub community

2. Volunteer for a project panel

3. Prepare a research proposal

4. Answer an ACRP survey

5. Apply the research results

Visit us online:
www.trb.org/ACRP

ACRP Seeking Synthesis Topics for the Fiscal Year 2022

Submission ideas are due by

Monday, September 27, 2021

Sign in to IdeaHub using your MyACRP login -
https://ideahub.trb.org/

Today's Speakers

Dr. Daniel Prather, DPrather Aviation Solutions

and

Joseph Goetz, Quad Cities International Airport

Presenting

ACRP Synthesis 112: Airport Operations Training at Small Airports

C. Daniel Prather, Ph.D., D.B.A., A.A.E., CAM
Principal Investigator

- ➤ **Consultant**
  - ▪ **DPrather Aviation Solutions**
- ➤ **Founder**
  - ▪ **PDPCredit.com**
- ➤ **Professor**
  - ▪ **California Baptist University**
- ➤ **Former Assistant Director of Operations**
  - ▪ **Hillsborough County Aviation Authority (TPA)**
- ➤ **Accredited Airport Executive (AAAE)**
- ➤ **Certified Aviation Manager (NBAA)**

Joseph Goetz C.M., A.C.E.
Airport Operations Manager (Case Example)

- 2010-2016
  - Bellingham International Airport
  - Operations/ARFF
- 2016-2020
  - Crater Lake – Klamath Regional Airport
  - Airport Operations Manager
- 2020-Current
  - Quad Cities International Airport
  - Airport Operations Manager
- Certified Member
- Airport Security Coordinator
- A.C.E. – Operations
- A.C.E. - Security

ACRP Synthesis 112 Topic Panel

- ➤ Scott Ayers, City of Atlanta Department of Aviation, Atlanta, GA
- ➤ Kimberly A. Kenville, University of North Dakota, Grand Forks, ND
- ➤ Harleen Smith, City of Houston–Houston Airport System, Houston, TX
- ➤ Lauren Tapia, Truckee Tahoe Airport, Truckee, CA
- ➤ Ashly "Jerry" Tissera, JTA Consulting LLC, Aston, PA
- ➤ Adam Wolf, Ohio State University Airport, Columbus, OH
- ➤ Dale A. Williams, FAA Liaison
- ➤ Christopher J. Oswald, Airports Council International–North America Liaison

Learning Objectives

➢ **Understand challenges related to airport operations training.**

➢ **Interpret project results.**

➢ **Understand airport case examples, including innovative approaches that may be adopted by your airport.**

➢ **Formulate action steps from findings.**

Introduction

➤ **Perennial challenges of efficiently training airport operations personnel to ensure a safe and secure airport.**

  ➤ Limited resources.

  ➤ Need for standardization.

  ➤ Employee turnover.

  ➤ Lack of designated trainer.

  ➤ Boring content.

  ➤ Disengaged employees.
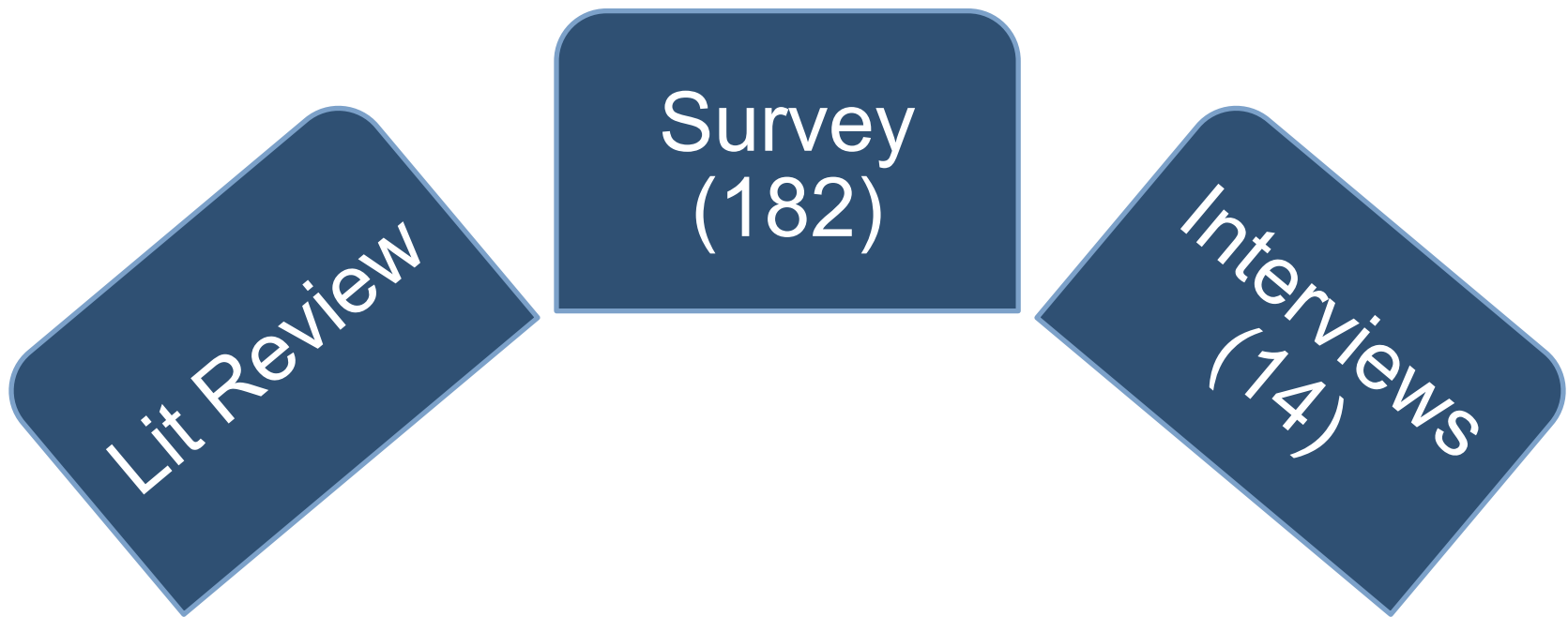
  ➤ Initial and recurrent training.

Methodology

Approach

Northwest Mountain Region
5 Large Hub
4 Small Hub
4 Non Hub
1 GA
2 Reliever

Central Region
1 Large Hub
3 Small Hub
3 Non Hub
1 GA
3 Reliever

Great Lakes Region
6 Large Hub
4 Medium Hub
7 Small Hub
12 Non Hub
5 GA
2 Reliever

New England Region
1 Large Hub
1 Small Hub
5 Non Hub
1 GA
2 Reliever

Eastern Region
10 Large Hub
3 Medium Hub
4 Small Hub
3 Non Hub
1 Non Primary
4 GA
3 Reliever

Western Pacific Region
2 Large Hub
5 Medium Hub
3 Non Hub
7 GA

Southern Region
5 Large Hub
5 Medium Hub
10 Small Hub
7 Non Hub
1 Non Primary
6 GA
1 Reliever

Alaska Region
1 Non hub

Southwest Region
5 Large Hub
5 Medium Hub
1 Small Hub
5 Non Hub
1 Non Primary
7 GA
1 Reliever
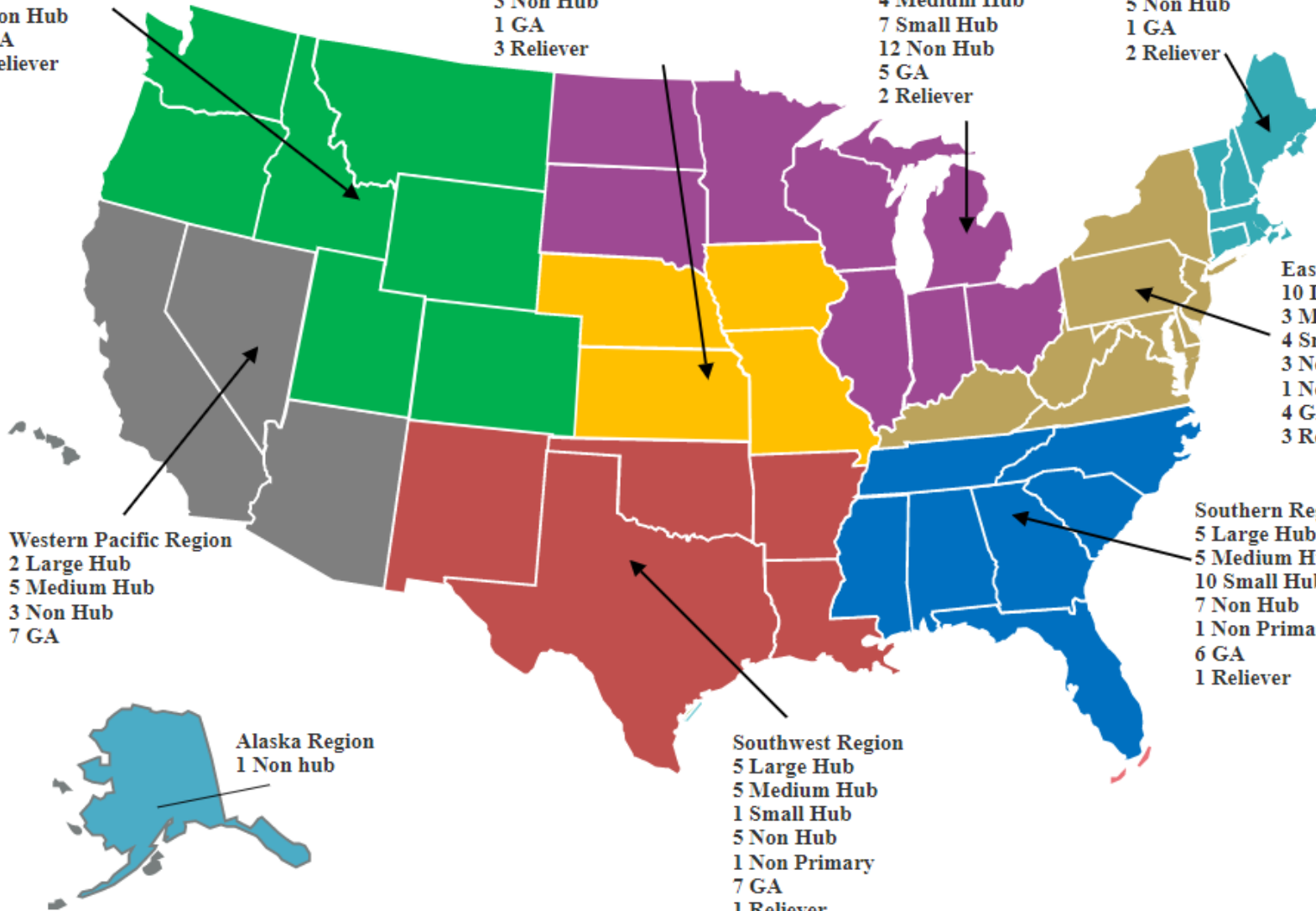
The National Academies of
SCIENCES · ENGINEERING · MEDICINE
TRB
TRANSPORTATION RESEARCH BOARD

ACRP AIRPORT COOPERATIVE RESEARCH PROGRAM

LITERATURE REVIEW

Topics Included

- **Adult learning styles**
- **Learner motivation**
- **General learning preferences**
- **Initial and recurrent training**
- **Professional development**
- **Training needs assessment**
- **Training curriculum design**
- **Training materials**
- **Training manual**

Topics Included

- **Training budgets**

- **Training timelines**

- **Benefits and disadvantages of training**

- **Training methods**

- **Training records**

- **Trainer qualifications**

- **Training assessment**

- **Proof of training competency and completion**

Baby Boomers (born 1946-1964)

Train:

- Use facilitated, instructor-led learning with handouts.

Examples:

- Lecture

- Detailed handouts

- Note-taking

- Personal stories related to content

Generation X (born 1965-1980)

Train:

- Include games and case studies with real-world feel. Provide clear instructions. Explain how training benefits them.

Examples:

- Distance learning

- Self-paced and independent instruction

- Detached study guides and test reviews

Millennials (born 1981-2000)

Train:

- Highly visual and expect technology to be integrated with learning. With short attention spans, they benefit from bite-sized learning.

Examples:

- Simulations with immediate feedback

- Group activities include problem solving

- Creative interactive exercises (i.e., Jeopardy-style team games)
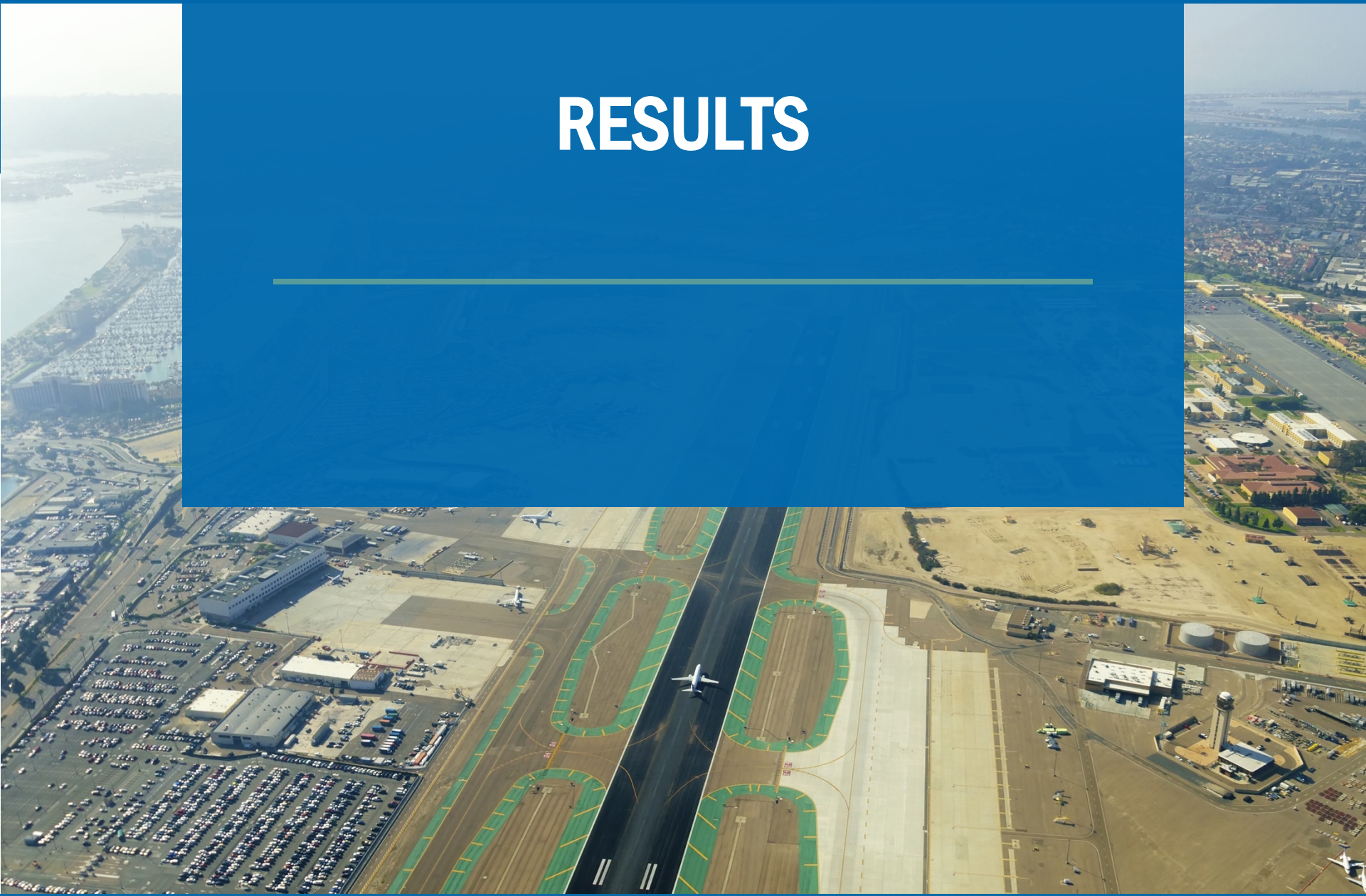
Generation Z (born after 2000)

Train:

- **Benefit from taking part in the training process, to include role playing, creating videos, and integrating social media. Short attention spans ad very accustomed to digital exploration and training methods.**

Examples:

- **Computer-based training**
- **Online courses**
- **Opportunity to search intent for answers**

RESULTS

Average Airport Training Budget

NPIAS Category	Low	Average	High
Large hub	$9,000	$220,583	$1,500,000
Medium Hub	$3,000	$26,700	$60,000
Small hub	$2,500	$20,926	$70,000
Nonhub	$500	$13,168	$150,000
Nonprimary	0	$833	$1,500
Reliever	0	$4,000	$12,500
GA	0	$13,278	$200,000

Training Methods - Small Airports

Training Method	Percentage
Local university	
Games	2.50%
Simulation	7.50%
Consultant-led	8.75%
Other (please specify)	8.75%
Internship	11.25%
Lecture	17.50%
Team training with state/region	16.25%
Workshop	17.50%
Case studies	22.50%
Seminar	25.00%
Purchased training	30.00%
Job shadowing	32.50%
Training with municipal fire/police	
Peer-assisted learning	35.00%
Designated in-house trainer	37.50%
Coaching	42.50%
Quizzes/Tests	48.75%
Cross Training	50.00%
Discussion	50.00%
Airport library/references	55.00%
Video	55.00%
Computer-based training (CBT)	57.50%
PowerPoint presentation	58.75%
Conference(s)	65.00%
On-the-job	85.00%

Number of Responses

Sources of Initial Training - Small Airports
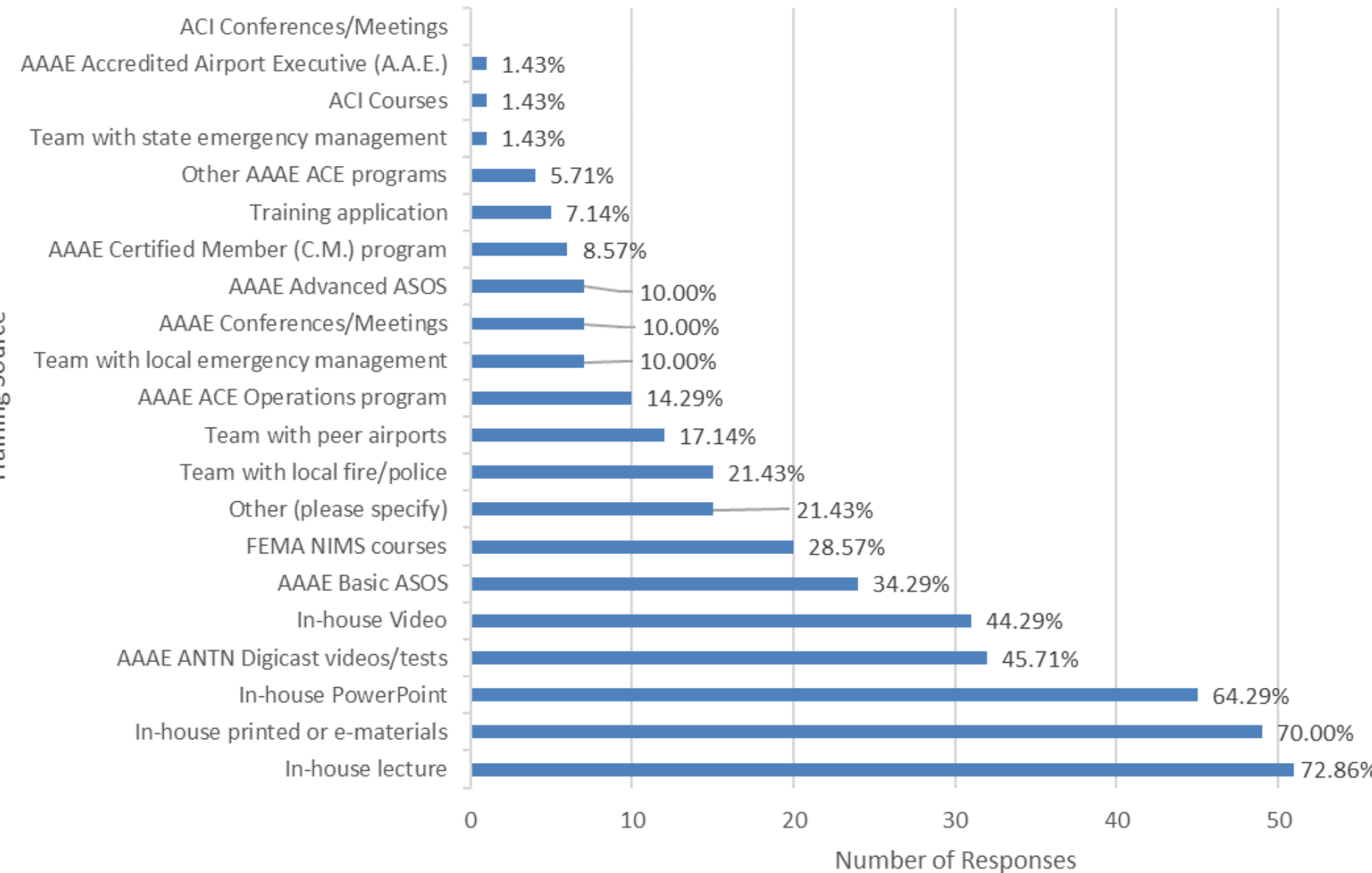
Sources of Recurrent Training - Small Airports

Source	Percentage
ACI Conferences/Meetings	
Team with state emergency management	1.43%
ACI Courses	2.86%
AAAE Accredited Airport Executive (A.A.E.)	7.14%
Other AAAE ACE programs	8.57%
Team with local emergency management	12.86%
AAAE Advanced ASOS	14.29%
Training application	14.29%
AAAE Certified Member (C.M.) program	15.71%
AAAE ACE Operations program	15.71%
FEMA NIMS courses	15.71%
Other (please specify)	15.71%
Team with peer airports	17.14%
AAAE Basic ASOS	18.57%
AAAE Conferences/Meetings	24.29%
Team with local fire/police	34.29%
AAAE ANTN Digicast videos/tests	48.57%
In-house Video	50.00%
In-house printed or e-materials	61.43%
In-house PowerPoint	65.71%
In-house lecture	71.43%

Number of Responses

Training Topics

1. Airfield self-inspections
2. Airfield familiarization
3. Wildlife hazard management
4. Airport emergency plan
5. Movement area
6. Airfield nightly inspections
7. Aeronautical radio procedures
8. Airport rules or regulations
9. NOTAMs
10. Airport standard operating procedures

Training those without experience

Training those with experience

CASE EXAMPLES

Case	Airport	Location	Airport Size	Practice
1	Columbus International Airport	Columbus, OH	Med hub	6-week training program
2	Wichita National Airport	Wichita, KS	Small hub	Interactive courses
3	Fort-Lauderdale Hollywood Intl	Ft. Lauderdale, FL	Large hub	Computer-based learning

Case	Airport	Location	Airport Size	Practice
4	Greenville-Spartanburg International Airport	Greer, SC	Small hub	Proprietary learning mgt system
5	Gainesville Regional Airport	Gainesville, FL	Nonhub	Visit to peer airports
6	Dallas-Fort Worth Intl Airport	DFW Airport, TX	Large hub	Live ATC and driver simulator

Case	Airport	Location	Airport Size	Practice
7	Charles B. Wheeler Downtown Airport	Kansas City, MO	Reliever	Ops presentations, identify animal remains, Part 139 quiz show
8	Oregon Dept of Aviation	Salem, OR	GA	Challenges and need for training tools

Case	Airport	Location	Airport Size	Practice
9	Brooksville-Tampa Bay Regional Airport	Brooksville, FL	GA	Free FDOT Training and webinars
10	South Bend Intl Airport	South Bend, IN	Nonhub	Airport exchange program

Case	Airport	Location	Airport Size	Practice
11	Aspen-Pitkin County Airport	Aspen, CO	Nonhub	Departmental cross-training program
12	Green Bay Intl Airport	Green Bay, WI	Nonhub	Learning-styles based adaptive training
13	Ohio State University Airport	Columbus, OH	Reliever	UAS use

Alternate Methods for Completing Recurrent Training

➢ **What are we trying to accomplish?**

   ➢ Engaging all learning styles (auditory, visual, kinesthetic)

   ➢ Making repetitive training fun

   ➢ Retention of learned material

   ➢ Proof of training's effectiveness

   ➢ Not just another slideshow

➢ **Alternate methods**

   ➢ Jeopardy

   ➢ Scavenger Hunt

   ➢ Training Worksheets/Quizzes

   ➢ Incentives

Runways & Taxiways	Airside & Landside	Air National Guard	Airport Boundaries	Corporate and G.A.
10	**10**	**10**	**10**	**10**
20	**20**	**20**	**20**	**20**
30	**30**	**30**	**30**	**30**
40	**40**	**40**	**40**	**40**
50	**50**	**50**	**50**	**50**

CRATER LAKE
KLAMATH
REGIONAL AIRPORT

Question 3 - 30

- What type of aircraft arresting systems are installed on RWY 14/32 and how far down the runway are they located?

Question 4 - 10

- The easiest way to find the boundaries for airport property would be to look at this.

CRATER LAKE
KLAMATH
REGIONAL AIRPORT

#2

You visit me often in fall and spring

To pursue those on the wing

But right now my level is on the downswing

Airport Familiarization Scavenger Hunt

Location 2 Questions

1. What is the full name of the organization that owns this property?

2. What is the specific purpose the organization uses this property for?

3. Please describe any tasks that airport personnel may undertake on or adjacent to this property.

Training Worksheets

NOTAM TRAINING
December 18, 2019

NOTAM Keywords

OBST _____   SVC _____

APRON _____   COM _____

RWY _____   O _____

TWY _____   NAV _____

AD _____

NOTAM Contractions Quiz

AMGR _____   LIH _____

ALS _____   LNDG _____

APL _____   MALSR _____

AWOS _____   MALSF _____

Training Worksheets

ARFF TRAINING

AIRPORT ARFF INDEX TRAINING SHEET

March 27, 2019

Name: _____

McDonnel Douglas MD-11   _____

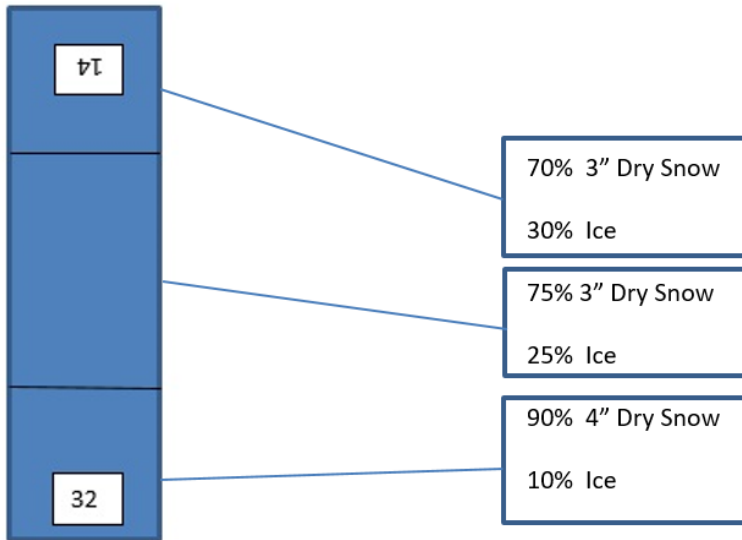Bombardier CRJ 200   _____

Saab 340   _____

If the Airport is served by an average of 4 Boeing 767-300 aircraft each day and 20 Bombardier CRJ 200 aircraft what is the ARFF Index level required?

_____

TALPA/RCAM TRAINING

October 22, 2019

14

70% 3" Dry Snow

30% Ice

75% 3" Dry Snow

25% Ice

90% 4" Dry Snow

10% Ice

32

Temperature: -10 Degree F

January 2018
Airport Familiarization Training
Airport Public Roadway Identification

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

Actionable Findings

Actionable Findings

1. The development of training curricula, methods, timelines, etc. is best accomplished from the employees' perspective.

2. Employees benefit from receiving a certain minimum duration of training and then receiving additional training time as necessary to build required proficiency and knowledge levels.

Actionable Findings

3. Conduct a training needs assessment for both employees and the airport.

4. Airport trainers benefit from a knowledge of individual learning styles and adult teaching methods.

5. Asking employees to complete a learning styles inventory or assessment will enlighten trainers as to the preferred learning styles of employees.

Actionable Findings

6. Employees benefit most when presented with engaging content that is easily accessible and meets all three learning styles (visual, auditory, and kinesthetic).

7. Prioritize training with a sufficient budget.

8. Having dedicated resources in the form of a dedicated training department, even if staffed by only one individual, is an option to be considered.

Actionable Findings

9. Airports may consider additional sources of training, to include products offered by AAAE and ACI–NA, as well as team teaching with peer airports and mutual aid agencies.

10. Although a significant portion of current operations training is conducted on the job, combining other methods can result in better employee learning and engagement.

Actionable Findings

11. PowerPoint presentations are not innovative: they generally do not engage learners, and they tend to be viewed unfavorably by students.

12. Consider the learner and develop a training program based on a needs assessment.

Appendices Included in Report

A.   Several Sample Operations Employee Training Checklists

B.   Sample Airport Operations Center Training Checklist

C.   Sample Badging Training Checklist

Conclusion

➢ **Each airport must determine training approaches that work well, considering training environment, budget, employee experience, and training objectives. There is no "one best way."**

➢ **Innovative training approaches are just that – innovative. But employees deserve innovative training!**

➢ **Focus on your most important resource!**

FOR ADDITIONAL INFORMATION

Dr. Daniel Prather, A.A.E., CAM

daniel@dprather.com

Mr. Joseph Goetz C.M., A.C.E.

jgoetz@qcairport.com
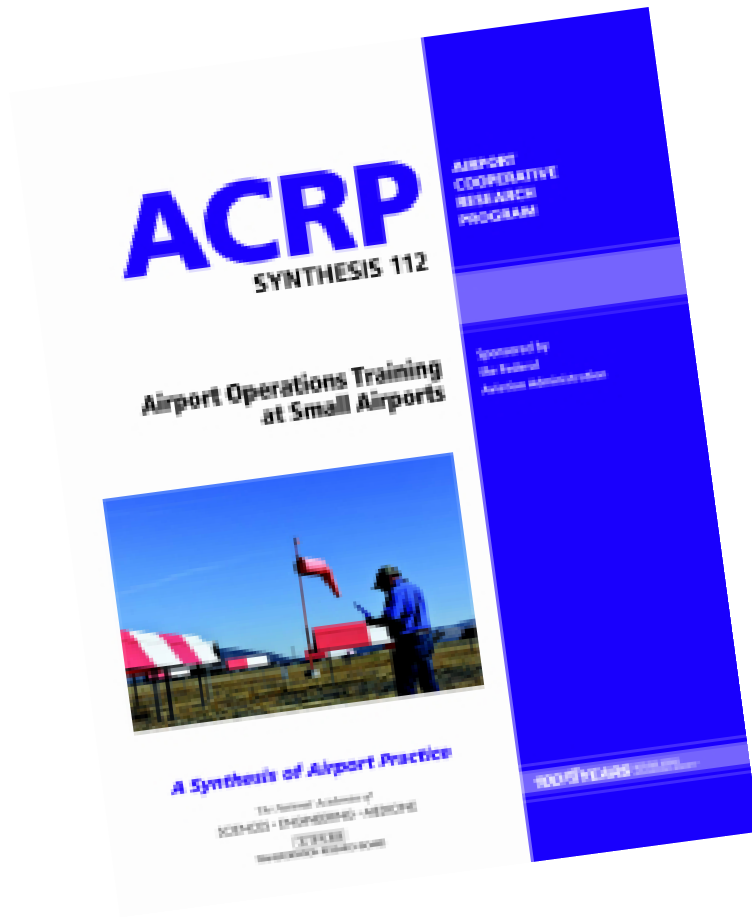
ACRP is an Industry–Driven Program

→ 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.
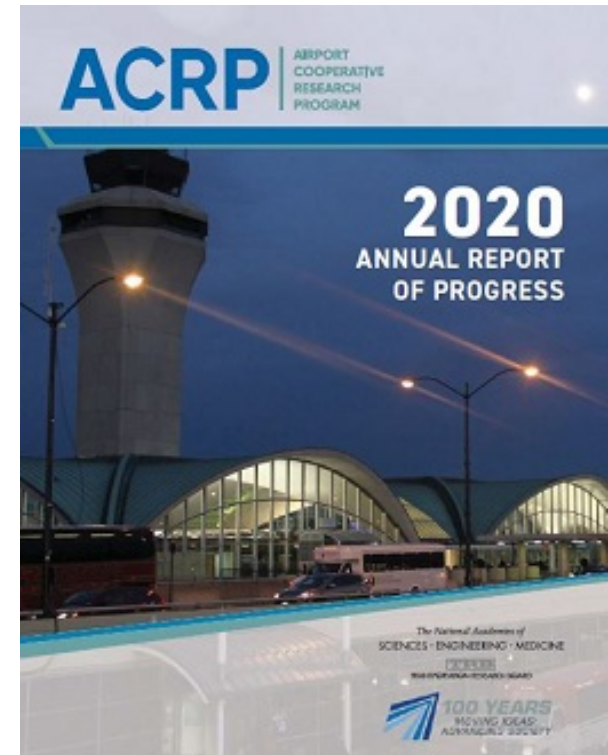
Other Ways to Participate

Become an Ambassador. Ambassadors represent ACRP at events and conferences across the country!

Sponsor or become an ACRP Champion. The champion program is designed to help early- to mid-career, young professionals grow and excel within the airport industry.

Visit ACRP's Impacts on Practice webpage to submit leads on how ACRP's research is being applied at any airport.

Visit us online:
www.trb.org/ACRP

Other ACRP Research on Today's Topic

Research Report 16: *Guidebook for Managing Small Airports–*
Second Edition

Research Report 103: *A Guidebook for Integrating NIMS for Personnel and Resources*
at Airports

Synthesis 78: *Continuity of Operations Planning for Small Airports*

Synthesis 94: *Attracting Investment at General Aviation Airports Through Public–Private*
Partnerships

Web-Only Document 28: *Identifying and Evaluating Airport Workforce Requirements*

Visit us online:
www.trb.org/ACRP

ACRP Seeking Synthesis Topics

Have an important topic you'd like to see addressed in an ACRP Synthesis?

Submission of potential topics through IdeaHub are due by

Monday, September 27, 2021

https://ideahub.trb.org/

ACRP Photo Contest:
Is your airport photogenic?

Submit a photo for the ACRP Annual Report!
Due September 22, 2021
https://bit.ly/ACRPPhotoContest

Photo courtesy of David Rosenblum, Philadelphia International Airport

TRB Weekly

Coming soon:
A new look for a classic newsletter!

- Subscribe to the newsletter for the most recent TRB news & research!
- Even previous subscribers must resubscribe!

https://www.mytrb.org/Profile/MyAccount/TRBWeekly

Get Involved with TRB
#TRBwebinar

🐦 @NASEMTRB
f @NASEMTRB
in Transportation Research Board

Getting involved is free!

Be a Friend of a Committee bit.ly/TRBcommittees
– Networking opportunities
– May provide a path to Standing Committee membership

Join a Standing Committee bit.ly/TRBstandingcommittee

Work with CRP https://bit.ly/TRB-crp

Update your information www.mytrb.org