



## Synthesis of Information Related to Airport Practices: 2012

### DETAILS

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### AUTHORS

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# AIRPORT COOPERATIVE RESEARCH PROGRAM

Sponsored by the Federal Aviation Administration

Responsible Senior Program Officer: Michael R. Salamone

# Research Results Digest 13

## SYNTHESIS OF INFORMATION RELATED TO AIRPORT PRACTICES

This is a staff digest of the progress and status of ACRP Project A11-03, "Synthesis of Information Related to Airport Practices," for which the Transportation Research Board is the agency conducting the research. Individual studies for the project are managed by Gail R. Staba, Senior Program Officer, and Jon M. Williams, Program Director, Synthesis Studies, serving under the Studies and Special Programs Division of the Transportation Research Board, Stephen R. Godwin, Director.

## INTRODUCTION

Airport administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to the airport industry. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and making it available to the entire airport community, the Airport Cooperative Research Program authorized the Transportation Research Board to undertake a continuing study. This study, ACRP Project A11-03, "Synthesis of Information Related to Airport Practices," searches out and synthesizes useful knowledge from all available sources and prepares

You can submit your recommendation at: <http://www.trb.org/ACRP/Public/ACRP.aspx> "Submit an ACRP Topic." Topics suggested must be accompanied by a brief (one or two paragraphs) scope statement, including a discussion of the problem. A title (preferably 10 words or less) and the name and affiliation of the submitter are also necessary. Suggestions for updates of published syntheses are also welcome. The ACRP Project Panel meets once each year to make the final selections. To be considered at the next annual meeting, all submissions should be received by October 2012. If a topic is not selected, the problem statement must be resubmitted the following year to be reconsidered.

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Interested in writing a synthesis? For details, see the Synthesis homepage (<http://www.trb.org/SynthesisPrograms/Public/ACRPSynthesisNewStudies.aspx>) under "New Topics."

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concise, documented reports on specific topics. Reports from this endeavor constitute an ACRP report series, *Synthesis of Airport Practice*.

### THE SYNTHESIS PROGRAM

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be most successful in resolving specific problems.

To develop these syntheses in a comprehensive manner and to ensure inclusion of significant knowledge, TRB employs a consultant to gather and analyze available information from numerous sources, including airport operations agencies. A panel of experts in the subject area is established to guide the consultant in organizing and evaluating the data collected on each topic and to review the synthesis report.

For each topic the project objectives are (1) to locate and assemble documented information; (2) to learn what practice has been used for solving or alleviating the problems; (3) to identify all ongoing research; (4) to learn what problems remain largely unsolved; (5) to organize, evaluate, and document the useful information that is acquired; and (6) to disseminate the synthesis information to all who might benefit from it.

Each synthesis is an immediately useful document that records practices that were acceptable within the limitations of the knowledge available at the time of its preparation. New knowledge can be expected to be added to that which is now at hand and eventually the synthesis may need to be updated or redone. The readers and users of the syntheses are in the best position to know when this has occurred. Whenever you believe that a synthesis should be updated, it would be appreciated if you would contact TRB and propose a synthesis update by contacting the ACRP Manager, Transportation Research Board, 500 Fifth Street, NW, Washington D.C. 20001.

### Studies in Progress and Planned for 2012

Work is currently under way on the topics listed in Table 1. Topics selected for the 2012 program are listed in Table 2. Questions on these topics should be addressed to the project study manager, Gail R. Staba, by e-mail at [gstaba@nas.edu](mailto:gstaba@nas.edu), or by phone at 202-334-2442, or the Synthesis Study Manager, Jon

**Table 1** ACRP SYNTHESIS STUDIES—In Progress as of December 2011

No.	Title
S02-06	Airport Climate Change Adaptation and Resilience
S04-07	Lessons Learned from Airport Safety Management Systems Pilot Study
S04-08	Managing Aerial Firefighting Activities on Airports
S06-03	Exploring Airport Employee Commuting and Parking Strategies
S09-03	Subsurface Utility Engineering Information Management for Airports
S09-04	Issues with Use of Airfield LED Light Fixtures
S10-07	Expediting Aircraft Recovery at Airports

**Table 2** ACRP SYNTHESIS STUDIES—2012 Projects

No.	Title
S01-05	Airport Organization Alignment
S01-06	Airport Customer Service Performance Metrics
S01-07	Conducting Airport Peer Reviews
S02-07	Using Airport Contracts as Environmental Performance Tools
S02-08	Environmental Assessment of High-Speed Rail vs. Air Transport
S02-09	Airport Environmental Management System Development Processes and Knowledge Gaps
S04-09	Model Mutual Aid Agreements for Airports
S06-04	Adapting New Maintenance Hires to the Airport Environment
S09-05	Repairing and Maintaining Airport Parking Structure While in Use
S10-08	Conducting Aeronautical Events at Airports
S10-09	Wildlife Deterrents Using Population Management at Airports

M. Williams, by e-mail at [jwilliams@nas.edu](mailto:jwilliams@nas.edu), or by phone at 202-334-3245.

### Available Publications

The syntheses of airport practice that have been completed under this project are listed in Table 3.

**Table 3** PUBLISHED ACRP SYNTHESSES

No.	Title/Pages
1	Innovative Finance and Alternative Sources of Revenue for Airports (2007) 43 pp., \$34 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_001.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_001.pdf</a>
2	Airport Aviation Activity Forecasting (2007) 32 pp., \$34 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_002.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_002.pdf</a>
3	General Aviation Safety and Security Practices (2007) 44 pp., \$44 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_003.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_003.pdf</a>
4	Counting Aircraft Operations at Small and Non-towered Airports (2007) 33 pp., \$44 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_004.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_004.pdf</a>
5	Airport Ground Access Mode Choice Models (2008) 104 pp., \$39 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_005.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_005.pdf</a>
6	Impact of Airport Pavement Deicing Products on Aircraft and Airfield Infrastructure (2008) 58 pp., \$42 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_006.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_006.pdf</a>
7	Airport Economic Impact Methods and Models (2008) 67 pp., \$45 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_007.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_007.pdf</a>
8	Common Use Facilities and Equipment at Airports (2008) 121 pp., \$52 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_008.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_008.pdf</a>
9	Effects of Aircraft Noise: Research Update on Select Topics (2008) 90 pp., \$50 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_009.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_009.pdf</a>
10	Airport Sustainability Practices (2008) 112 pp., \$52 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_010.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_010.pdf</a>
11	Impact of Airport Rubber Removal Techniques on Runways (2008) 108 pp., \$52 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_011.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_011.pdf</a>
12	Preventing Aircraft–Vehicle Incidents During Winter Operations and Periods of Low Visibility (2008) 70 pp., \$45 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_012.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_012.pdf</a>
13	Effective Practices for Preparing Airport Improvement Program Benefit-Cost Analysis (2009) 65 pp., \$43 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_013.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_013.pdf</a>
14	Airport System Planning Practices (2009) 71 pp., \$41 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_014.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_014.pdf</a>
15	Identification of the Requirements and Training to Obtain Driving Privileges on Airfields (2009) 43 pp., \$48 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_015.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_015.pdf</a>
16	Compilation of Noise Programs in Areas Outside DNL 65 (2009) 104 pp., \$51 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_016.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_016.pdf</a>
17	Approaches to Integrating Airport Development and Federal Environmental Review Processes (2009) 34 pp., \$38 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_017.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_017.pdf</a>
18	Aviation Workforce Development Practices (2010) 36 pp., \$39 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_018.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_018.pdf</a>
19	Airport Revenue Diversification (2010) 55 pp., \$41 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_019.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_019.pdf</a>
20	Airport Terminal Facility Activation Techniques (2010) 127 pp., \$58 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_020.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_020.pdf</a>
21	Airport Energy Efficiency and Cost Reduction (2010) 73 pp., \$47 <a href="http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_021.pdf">http://onlinepubs.trb.org/onlinepubs/acrp/acrp_syn_021.pdf</a>
22	Common Airport Pavement Maintenance Practices (2011) 103 pp., \$54 <a href="http://www.trb.org/Publications/Blurbs/165167.aspx">http://www.trb.org/Publications/Blurbs/165167.aspx</a>
23	Bird Harassment, Repellent, and Deterrent Techniques for Use on and Near Airports (2011) 32 pp., \$41 <a href="http://www.trb.org/Publications/Blurbs/165829.aspx">http://www.trb.org/Publications/Blurbs/165829.aspx</a>
24	Strategies and Financing Opportunities for Airport Environmental Programs (2011) 218 pp., \$70 <a href="http://www.trb.org/Publications/Blurbs/165852.aspx">http://www.trb.org/Publications/Blurbs/165852.aspx</a>
25	Strategies for Reuse of Underutilized or Vacant Airport Facilities (2011) 62 pp., \$46 <a href="http://www.trb.org/Publications/Blurbs/166101.aspx">http://www.trb.org/Publications/Blurbs/166101.aspx</a>
26	Current Airport Inspection Practices Regarding FOD (Foreign Object Debris/Damage) (2011) 86 pp., \$54 <a href="http://www.trb.org/Publications/Blurbs/165911.aspx">http://www.trb.org/Publications/Blurbs/165911.aspx</a>

*(continued)*

**Table 3** (Continued)

No.	Title/Pages
27	Airport Self-Inspection Practices (2011) 111 pp., \$54 <a href="http://www.trb.org/Publications/Blurbs/166012.aspx">http://www.trb.org/Publications/Blurbs/166012.aspx</a>
28	Investigating Safety Impacts of Energy Technologies on Airports and Aviation (2011) 39 pp., \$41 <a href="http://www.trb.org/Publications/Blurbs/166099.aspx">http://www.trb.org/Publications/Blurbs/166099.aspx</a>
29	Ramp Safety Practices (2011) 59 pp., \$46 <a href="http://www.trb.org/Publications/Blurbs/166314.aspx">http://www.trb.org/Publications/Blurbs/166314.aspx</a>
30	Airport Insurance Coverage and Risk Management Practices (2011) 51 pp., \$43 <a href="http://www.trb.org/Publications/Blurbs/166472.aspx">http://www.trb.org/Publications/Blurbs/166472.aspx</a>
31	Airline and Airline–Airport Consortiums to Manage Terminals and Equipment (2011) 596 pp., \$98 <a href="http://www.trb.org/Publications/Blurbs/166364.aspx">http://www.trb.org/Publications/Blurbs/166364.aspx</a>

Copies of these syntheses can be obtained from the Publications Office, Transportation Research Board, 500 Fifth Street, N.W., Washington, D.C., 20001; by calling 202/334-3213; and through the Internet at: <http://www.trb.org/bookstore>. Please send check orders to: TRB, Dept. 289, Washington, DC 20055 or fax to: 202/334-2519. All ACRP reports are available as online publications (<http://www.trb.org/Publications/Public/PubsACRPSynthesisReports.aspx>) and may be downloaded free of charge.

**Selection of Topics**

ACRP Project Panel A11-03 meets each year to select topics for study using funds from the upcoming fiscal year. The membership of this committee is given in Table 4. Current funding allows for initiation of about seven syntheses per year. These, plus some alternate topics, are selected by the committee at its annual project meeting.

The schedule for ACRP Syntheses is as follows:

- Solicitation for synthesis topics—July–August
- Topic selection—October
- Topic panel formation—December–January
- Solicit letters of interest for authors—February
- Topic panel meetings—February–March
- Research Contract Start—April–May
- Draft Synthesis Reports—September–November
- Final Synthesis Reports—March–May
- Publication—Summer

The following factors are considered in the selection process for synthesis topics:

- The topic should address a problem that is widespread enough to generate broad interest in the synthesis.
- The topic should be timely and critical with respect to safety, economic, or social impact.

**Table 4** ACRP PROJECT PANEL A11-03

	Name	Affiliation
Chair	Julie Kenfield	Jacobs Engineering, Inc.
Member	Randall P. Burdette	Virginia Department of Aviation
Member	Kevin C. Dolliole	Unison Consulting, Inc.
Member	Linda Howard	Independent Aviation Consultant
Member	Arlyn Purcell	Port Authority of New York & New Jersey
Member	Burr Stewart	Burrst, Seattle, Washington
Liaison	Paul Devoti	Federal Aviation Administration
Liaison	John L. Collins	Aircraft Owners and Pilots Association
Liaison	A.J. Muldoon	ACI–North America
TRB Liaison	Christine Gerencher	Transportation Research Board
ACRP Synthesis Staff	Gail R. Staba	Transportation Research Board
ACRP Staff	Michael R. Salamone	Transportation Research Board

- The topic is appropriate if current practice is nonuniform or inconsistent from agency to agency, or if the validity of some practices appears to be questionable.
- The quality and quantity of useful available information should indicate a need to organize and compress that which has already been learned and written on the topic.
- The topic should not be one where ongoing research or other activities in progress might be expected to render the synthesis obsolete shortly after completion.

Each year more topics are suggested for the committee’s consideration than can be programmed for study in Project A11-03. Nevertheless, the continued success of this project depends on a constant supply of worthy synthesis topics. The interest of those who have recommended topics is sincerely appreciated, and they are urged to continue. Candidate topics are suggested by members of the panel and by a variety of other sources, including airport, airline, and state aviation personnel; FAA and TRB committees; aviation organizations; and other practitioners and researchers.

### Conduct of the Studies

Following the project panel’s selection of topics, studies are initiated in the order of priority

assigned by the panel. A topic panel consisting of practitioners and researchers is formed for each topic. At its first meeting, this topic panel thoroughly discusses the topic, refines the scope, suggests sources of information, and identifies and selects potential topic consultants based on expressions of interest received in response to an industry-wide solicitation.

Following this meeting, a consultant is hired to gather information on the topic, synthesize it, and draft a report. Typically, the agreement covers a period of six to seven months. Information gathering and preparation of the first draft of the synthesis report takes about four months. This draft is reviewed by the topic panel with the consultant, often at the second panel meeting. A revised draft is then prepared by the consultant. Subsequent drafts and meetings are scheduled, if needed, although this rarely occurs.

After the staff is substantially satisfied with the report, a final draft is sent to members of the topic panel for their last chance to review the report and then ACRP Project Committee A11-03 for final approval. The report is subsequently published as an *ACRP Synthesis of Airport Practice*.

### Index of Topic Studies

Table 5 is a key word index of published syntheses.

**Table 5** INDEX TO SYNTHESSES AND STUDIES (2011)

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**Table 5** (Continued)

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