Airport Cooperative Research Program Project 03-68

Integration of Contingency Planning for Small Airports

Conduct of Research Report

November 17, 2023

Table of Contents

List of Tables

Project Statement & Timeline

Project Definition Statement

The objective for ACRP 03-68 – Integration of Contingency Planning at Small Airports – was defined by the Panel in the initial RFP as follows:

"The objective of this research is to develop guidance to assist small airports to effectively integrate plans for operational and business continuity, emergency response, financial sustainability, and resiliency to respond to airport disruptions."

These minimum considerations for development of the guidance were defined:

- *"Identification of existing and available reports and resources that would assist in development of a reference library;*
- *A sampling of case studies at a variety of relevant types and sizes of small airports and other industry entities (e.g., rail, highways, ports, utilities) that reflect best practices of integration;*
- *Identification or development of tools (e.g., flow charts, checklists, decision trees) that will assist in the integration;*
- *Flexibility for integration with respect to event complexity, airport size, and its resources (internal and external); and*
- *A process for conducting a cost benefit analysis of integration."*

Timeline & Progress Schedule

ACRP 03-68 progressed largely on plan over the course of 17 months. For any setbacks we experienced, we were able to accelerate other tasks to catch up:

PROGRESS SCHEDULE

																									FY	2023	Month	October

ACRP Project No.	ACRP 03-68
Research Agency	B. Riley Advisory Services
Principal Investigator	Scott Corzine

RESEARCH TASK	2022 June	2022 July	2022 Aug	2022 Sept	2022 Oct	2022 Nov	2022 Dec	2023 Jan	2023 Feb	2023 Mar	2023 Apr	2023 May	2023 Jun	2023 Jul	2023 Aug	2023 Sept	2023 Oct	2023 Nov	2023 Dec						ESTIMATED % COMPLETION
Task 1 Kick-Off Teleconference	█																								4
Task 2 Amplified Research Plan	█																								4
Task 3 Literature Review		█	█	█	█																				11
Task 4 (A) Case Studies		█	█	█																					17
Task 4 (B) Status Report to Panel				█	█																				29
Task 5 Tool Analysis					█	█																			35
Task 6 Tool Development							█	█																	50
Task 7 Interim Report & Guidance Outline							█	█	█	█	█														63
Task 8 Pilot Testing												█	█												82
Task 9 Final Draft Deliverables for P. Review														█	█										88
Task 10 (A) Final Tools & Guidance for Review																█									92
Task 10 (B) Final Report with Required Memos																█	█	█							100
OVERALL % COMPLETED																									

Table 1: Final Progress Schedule

Research Approach & Methodology

Summary of the State of Practice

ACRP initiated ACRP 03-68 from this background frame of reference:

 "…*small airports (general aviation (GA), non-hub, and small-hub commercial service), which have limited resources and expertise, are often ill-prepared to address airport disruptions…that impact staffing, financial and information technology (IT) resources, infrastructure, facilities, and supply chain shortages…..these airports have challenges with effective coordination and integration of contingency planning (operational and business continuity, emergency response, financial sustainability and resiliency). Research is needed to help small airports benefit by integrating all aspects of contingency planning to sustain operations and build resiliency.*"

Research proved this premise to be inaccurate.

The literature review revealed a surprising absence of published material dealing with the integration of contingency plans, airport-focused or otherwise. It is a topic seemingly not addressed in the literature from an academic, regulatory, industrial, operational, or functional perspective.

Case study interviews likewise aligned with the implications of the literature review. No small airport respondent in our research universe identified contingency plan integration as an objective. None view plan integration as a consideration they have focused on. None saw immediate value in the proposition that integrating their contingency plans could be beneficial in their resource-constrained operating environment. Several airport staff we interviewed asked why contingency plan integration was viewed by the Transportation Research Board as an airport industry problem. They were ambivalent about the core proposition. Reasons included staffing and resource constraints that left them no time to consider or address plan integration. These sample airports are reactive in how they handle contingencies they face, lacking the staff and the luxury of enough time to think about how they might integrate their contingency plans, which came across for many as a "first-world problem" for large, better resourced airports which small airports lack the time to confront.

Research Philosophy

Our work plan assumed that small airports—general aviation (GA), secondary/commercial service (CS) airports, non-hub primary (NH-P) airports, and small-hub (SH) airports—are often ill-prepared to address airport disruptions, may have small staffs, limited financial resources, and limited access to planning expertise. Because any one of these airports, regardless of size, is a critical infrastructure/key resource (CI/KR), however, airport resiliency remains essential despite the hurdles that these small airports face.

Our objective was to develop guidance that is right sized for the realistic capacity and capabilities of small airports, benefitting them by integrating contingency planning to sustain operations and build resiliency with a goal of reducing the extent and duration of disruptions.

Our approach to this research was guided by these fundamental assumptions:

- Disruption and crisis have become a universally sustained operating condition ubiquitously facing every management team.
- Operational resilience and recovery are now governing board-level issues; management is increasingly expected to have well-practiced plans for operating during disruption.
- Since crises are inevitable, integrating plans will likely become more of an expectation than an option because the cost of NOT integrating resiliency plans may be unacceptable.
- "Simple," "understandable," and "easy-to-use" must characterize all of our deliverables in the small airport context.
- Because the tools produced from this research must work when electric power, internet, and cell service fail, they will be most useful in a non-electronic form.
- Everything should be premised on the likelihood that a small airport may have to be recovered, reopened, and run by persons without familiarity with that airport.

We initiated the research understanding that, because of airport survey fatigue and because the data set would be too small for any meaningful quantitative analysis of the problem environment, qualitative analytical methods – primarily thematic analysis – would be used.

We also kicked off the project believing that integration is possible and desirable, but intent on testing this belief rigorously with data from the literature review, case studies, and pilot testing to ensure that our findings would be empirically derived, and the resulting tools would be needs-based.

Research Methodology
ACRP 03-68

Task 1 – Kick-Off Teleconference
For scheduling reasons, we completed the Task 1 - Kick-Off Teleconference with panel members on June 30, 2022 - one day before the formal commencement of ACRP 03-68 on July 1, 2022. The teleconference among the entire panel and research team coincided with the site visit, which was held the same day and attended in person by Scott Corzine, the Principal Investigator, and Senior Program Officers Edward McDonald and Matthew Griffin. In that meeting we reviewed the overall process for conduct of the project. The Amplified Research Plan was approved by the Panel during this conference.

Task 2 - Amplified Research Plan (ARP)

The Amplified Research Plan reiterated that the research team would use qualitative analytical methods, primarily thematic analysis, because the data set would be too small for any meaningful quantitative analysis. The ARP also responded to Panel comments in several key areas:

- **Our decision to include in case studies the complex community of Washoe County, Nevada.** We noted that airports do not exist in a vacuum but operate in the context of their surrounding communities and that this is particularly true of contingency planning even beyond the links created by mutual aid agreements. We noted that mutual awareness and understanding of each other's contingency plans are a force multiplier for community and airport resiliency. We defended the selection of Nevada because of its approach to inter-agency and inter-facility coordination, planning and exercising in a "hyper-coordination" model among municipalities, tribal areas, airports, and counties in an area that is home to the bulk of its population and economic activity and includes several small airports.

- **The challenge of effective cost/benefit analysis.** We noted that the primary computation of a cost-benefit analysis for the highly qualitative type of research in ACRP 03-68 might be (the economic loss of having the airport closed due to an incident/operational downtime) / (the cost of integrating the airport's contingency plans), with an alternative formula measuring (cost per day the airport is closed) / (cost of integrating the airport's contingency plans). We noted that the denominator of these cost/benefit ratios may vary if the airport lacks one or more of the basic contingency plans so that the cost of developing such plan(s) needs to be added.

- **Contents of the Guide.** We wrote that the Guide would explain the advantages of integrating the various contingency plans, explain the use of a cost / benefit calculation tool, and give a strategy for implementing that integration. The document would explain the role of each plan and direct airports to existing resources to develop any missing plans; it would describe each tool and give complete instructions for its use; and it would describe how to evaluate the resulting integrated plan and to revise it when necessary. Finally, the research team noted that we would leave space in defining the Guide until we speak with the airports about what they would find most helpful, assuming early in the project that tool utility meant that instructions had to be part of each document, and that the value of a separate Guide would likely be anathema to small airports.

The Task 2 Amplified Research Plan was approved on July 1, 2022, during the Task 1 Kick-Off Teleconference.

Task 3 – Literature Review

The literature review and bibliography, completed on October 31, 2022, proved to be a difficult search process because of the dearth of informative data that the search revealed. The review was

challenging, producing an unexpected paucity of plan integration artifacts. One interpretation was that the limited finding of usable documents and literature, itself, was prima facie evidence that contingency plan integration is poorly understood, minimally practiced in the field, and a topic rarely appearing in the literature.

We saw more evidence of plan "overlapping" than we did plan "integration," perhaps because various contingency plans are triggered across the incident timeline at different times. It was an indicator that plan integration has not been widely considered, that it is not a topic of interest to small airports, or that it either may beg for additional analysis and evaluation through studies like ACRP 03-68 or may not be fruitful for further research.

While the research team performed a disciplined Boolean search to "throw the widest possible net," the final literature review includes only 28 sources, cut from over 200-250 that we originally consulted, due to their inapplicability to the project. Very few, even of these 28 sources, effectively informed our research. Contingency plan integration proved to not be a topic of many researchers or authors. **See Appendix A for a list of the search terms the team used and the complete literature review.**

Task 4(a) – Case Studies & Task 4(b) Case Studies Status Report

The research team conducted 10 case studies involving eight (8) airports, a maritime critical infrastructure facility, and a community complex containing several airports. (**See Table 1 below.**)

Originally, we had targeted seven airports and an additional critical infrastructure case – Missouri Southern State University (MSSU) - because of its integrated response to the Joplin tornado in 2011 with county, municipal and federal agencies, and stakeholders. Unfortunately, officials with institutional knowledge of that event separated from MSSU and could not be located for interviews. We added an eighth airport – Aspen Pitkin County Airport – with the approval of the Senior Program Officer. Because the case required contact with the ACRP 03-68 Panel Chair, we also received approval for this addition from the TRB. We determined that interviews with two non-airports would suffice for a representative sample.

CASE STUDIES			
Entity/Organization	Size	State	Completed

CASE STUDIES				
1	Cotulla – La Salle County Airport (COT)[1]	GA Basic	TX	August 9
2	Eugene Airport (EUG)	Small Hub	OR	August 10
3	Lakeland Linder Regional Airport (LAL)	GA Reliever Regional	FL	August 19
4	Lincoln Airport (LNK)	Non-hub Primary	NE	August 31
5	Range Regional Airport (HIB)	Commercial Service	MN	July 21
6	Tallahassee International Airport (TLH)	Non-hub Primary	FL	August 4
7	Tucson International Airport (TUS)	Small Hub	AZ	August 1
8	Aspen Pitkin County Airport (ASE)	Non-hub Primary	CO	August 17
9	Port of Vancouver	Maritime Port	WA	August 11
10	State of Nevada Emergency Management via Washoe County Office of Emergency Management	Complex community context for airports (LAS, RNO, CXP, HND, RTS)	NV	August 16

Table 2: Case Study Airports

Our process for the case studies was designed to ensure that the team carefully listened and broadly heard from the airports.

We provided a list of questions (**See Appendix B**) to the airport staff that would be participating so they were well oriented to the topic when the calls took place. At least two research team members participated on each call; sometimes as many as four team members participated. A lead questioner facilitated the discussion and took notes, while other team members took notes and interjected new derivative questions into the interview as each conversation unfolded. All ACRP 03-68 participants then submitted their notes to the team facilitator, who blended them into a final notes document which we provided to each airport interview leader for correction, edit and comment. This ensured that we validated what we heard with the airports and produced accurate findings and conclusions.

We supplemented these primary interviews with conversations with the Chief Financial Officers (CFO) of several airports to describe our misgivings about integrating airport financial resilience plans with operating resilience plans. We wanted to empirically either confirm our conclusion to

---

[1] The COT interview revealed integration by using an outside firm to foster joint consolidated preparedness activities.

leave out financial resilience plans in our integration considerations or be convinced otherwise. The research team interviewed five airport senior managers (four CFOs officers and one Chief Executive Officer [CEO]) to test our tentative finding that airport financial contingency plans are so different that they are inappropriate for integration with operational and emergency contingency plans. This included CFOs at CLT (large hub), ROA (non-hub), TUS (small hub), and TLH (non-hub), as well as the CEO at GSP (small hub).

All five agreed with the finding that, while financial contingency plans focus on risk and risk mitigation and thus should be a major influence on operational and emergency contingency plans, they have such different goals and time frames that they cannot productively be integrated into other types of contingency plans. Three of the CFOs noted that the COVID pandemic (an exceedingly rare event with catastrophic consequences) forced financial contingency planning and operational/emergency contingency planning to resemble each other far more than under normal circumstances.

ACRP 03-68 is about how to integrate contingency planning for small airports. In none of our case study interviews, however, did we hear that airport staff consider plan integration as important to them or that the absence of plan integration was considered a problem.

We realized that the absence of affirmation by the interviewees that contingency plan integration is seen as a problem, forced the research team to "work between the lines," draw some conclusions that may not have been proffered by our case study airports, take some guidance from non-airport organizations that have more fully considered the topic, and develop tools that can improve how small airports develop, implement, and integrate contingency plans in practice.

Key findings that most directly informed our approach to tool development included:

- Plan integration is not widely seen as beneficial; most interviewees openly questioned the value of integrating their contingency plans.
- "Recurring" contingency events become internalized and operationalized as institutional knowledge at small airports, whereas "standard expected" events may require tactical aids and "reminder" tools because staff experience with them is uncommon.
- Any tools the ACRP 03-68 team would develop would need to be:
  o easy to use, easy to learn, easy to implement,
  o accretive, not adding a burden,
  o de-conflicted with/referenced to other plans,
  o action-oriented, focused on integration at the operational level,
  o should consider city, county government partners and help improve communications,
  o be scalable for applicability from small to medium-sized airports,
  o be tangible and cost-free, not in electronic format that requires a subscription.
- The strong consensus that integrating "policy level" plans (long narratives in binders, e.g.) had less perceived value than integrating "action-level" plans meant that integration tools would have to realistically support the tactical response process, e.g., checklists, field operating guides, and standard operating procedures.

- Integration tools must consider the city/county government relationship many airports must deal with and be flexible enough to accommodate public and authority airports and the constraints imposed on them from that circumstance.
- Because few small airports do formal After-Action Reports (AAR) and Improvement Plans (IP) for incidents or exercises or to track IP item remediation, integration tools should somehow address the AAR/IP process.
- It is in the operationalization of plans that "integration" most clearly occurs, such as through training and exercises, so-called "tactical worksheets," FEMA courses, and NIMS/ICS training.
- Integration tools would have to provide some real and new insights and best practices for how response can be improved by approaching response integration more effectively.
- Because funding is always the issue for airports, the tools we develop in ACRP 03-68 would have to be free. The case studies revealed that the "cost" in cost/benefit analysis may essentially be the time airports do not have, so tools must cost neither time nor money. Quantitative metrics (such as time to restore normal operations, lost income, cost to recovery, or damage to or enhancement of the airport's reputation or brand based on the quality of response and recovery) were not seen as readily measurable.

On October 11, 2022, we submitted our case studies status report to the Panel. (**See Appendix C for the Case Study Report and Appendix D for the Summary of Detailed Interview Findings.)**

Task 5 – Tool Analysis & Technical Memo

The Tool Analysis & Technical Memo was submitted for Panel consideration on November 25, 2022. In it, we documented that the absence of in-market integration tools for review and analysis necessarily diverted our ACRP 03-68 research team from a mission of evaluating existing plan integration tools to one of determining which tools could be useful to a small airport marketplace that is not convinced it needs those tools.

The research indicated that, while a variety of contingency planning tools are in place and used at small airports, there is no evidence that integration among these plans has taken place. Airports' tools we were provided are all "stand-alone," purpose-built tools that cannot be considered "integrated" in any material way unless we consider the all-hazards Airport Emergency Plan (AEP) to be integrative under an ICS or NIMS-type construct that provides for a clear organization and set of responsibilities for every type of contingency.

The absence of recognition of, or demand for plan integration tools by airports and the use of purpose-specific tools by airports brought the research team to two essential questions – *What should plan integration mean? How can we develop integration tools, in this vacuum of demand, that can be effective and useful to small airports?*

One conclusion is that contingency plan integration could be as straightforward as plan deconfliction and cross referencing – both methods of simple integration. We also considered how might airports integrate contingency plans in a more complex, useful, and meaningful way. Our research identified that, to be effective, the integration tools that the ACRP 03-68 research team creates must meet these eight (8) criteria to be realistically considered, credibly trialed, operationally adopted, and regularly used by busy small-airport staff:

1. <u>Action-oriented</u>
    a. Tools must be focused more squarely on integration of the operational/behavioral dimensions rather than the planning or documentation dimension.
    b. They must be tactical, not strategic, and provide value in the confusion and uncertainty during actual events airport staffs face in real-world situations.
2. <u>Operational</u>
    a. Tools must not include financial resilience plans, which are a focus of CFOs, not contingency plan actors.
    b. They should omit facility security plans, due to the SSI often present in them.
3. <u>Flexible and Scalable</u> - Tools must be applicable from small to medium-sized airports.
4. <u>Focus on improving communication and coordination</u> - All interviewees confirmed the value of tools that help responders communicate among numerous involved agencies and roles.
5. <u>Easy to use, easy to learn, easy to implement, and accessible</u>.
    a. <u>Brief</u> – there was no interest in complex documented tools.
    b. <u>Hard copy</u> – during active contingency responses, only hard copy tools were shown to be of interest.
6. <u>Free</u>
    a. No subscription fee or cost.
    b. This eliminated technology subscription-based tools from our analysis.
7. <u>Tools must be accretive, not additive</u> to be valuable for time-constrained line response and recovery managers.
    a. Tools cannot add another burden or layer of documentation.
    b. They must be de-conflicted and reference other plans, where appropriate.
8. <u>Tools must consider and account for city, county government partners</u> which are especially important to the overburdened contingency response staffs of small airports.

Task 6 – Tool Development & Technical Memo

The research team then developed eight (8) integration tools sorted into three (3) categories:

- Plans and Planning Tools
- Action Tools
- Communications Tools

In the same way that a lack of market recognition for plan integration was an unexpected deviation in the premise behind ACRP 03-68, a second deviation was that the tools the research team originally developed in Task 6 intentionally did not include independent instructions for tool use in the form of a separate Guide. One of the consistent take-aways from our research was that tools will not be adopted, used, and successful if it is not obvious how to use them with minimal instruction. For that reason, the eight tools summarized below each have minimal instructions built into the tools themselves. **(See Appendix F for the Guide and complete final Toolset.)**

Plans and Planning Tools

The ACRP 03-68 team initially developed three (3) tools designed to address the types of plans needed at small airports and their utility across the contingency spectrum. They are meant to help airports consider the right mix of contingency plans to put in place from among the numerous types of plans they might consider.

1. ***Checklist of Contingency Plans***

    This simple checklist was developed to be used by small airports to inventory the contingency plans they have in place and to consider other plans that might well serve the airport. This tool answers the question "What tools do we have in place?" It is designed to define the universe of the airport's contingency plans, so further integration can be considered using additional tools. It is a columnar tool that lists plans by category, enables airports to note the nature of the plan and its "owner" to determine if the airport requires the plan:

    - Regulatory requirement?
    - Element of a City or County plan?
    - Stand-alone airport plan?
    - Annex?
    - Staff responsible?

    Finally, the Checklist of Contingency Plans lists the numerous plan types to aid airports in considering the breath of contingency plans they might consider.

2. ***Airport Contingency Plan Development and Integration Decision Tree***

    After considering the plans airports have in place, the Airport Contingency Plan Development and Integration Decision Tree was designed to route airport leaders through a decision process that provides a needs-based determination of what other types of tools might the airport need from among the many they might consider, based on user-airport characteristics. The tool answers the question "What other tools might we consider?" based on a set of airport-unique factors.

The decision tree forces a set of cumulative binary decisions, each of which is informed by a predecessor decision. The decision tree is a simple, disciplined method for deciding to develop a plan and deciding if plans should be integrated. The tool addresses decision drivers like regulatory obligations, airport vs. city/county responsibility, plan overlap and confliction.

3. ***Identifying Commonality & Conflicts Among Contingency Plans***

This tool was designed to help airports that are considering plan integration to first determine what their plans have in common, where they may overlap, and how they may need to be de-conflicted. It also helps answer the question, "Are all the contingency functions that are important to the airport present in our plans?" This tool helps airport staff determine which plans to integrate, what resources and procedures the plans have in common, conflicts among plans, and resources and gaps needed to improve plan operations. It is a columnar guide into which airports enter:

- their various contingency plans,
- consider "commonality" of features and resources, and
- identify resource needs and improvements.

The tool identifies functional considerations for airport analysis, designed to help airports think about how the functional areas that may overlap among plans. It also describes functions more specific to "specialty" plans such as Pandemic Response and Cybersecurity Incident Response.

Action Tools

We initially developed four (4) tools designed to meet small airports' needs around integration during the response and recovery phases of contingency events. They address how integration can be optimally executed during response behavior and best practices for updating plans, so they remain optimally integrated and de-conflicted.

4. ***FEMA Course Selection Guide***

This tool was designed to help small airport staff and management determine which FEMA Incident Command System (ICS) courses are best suited to various roles at the airport. Because the ICS is such a widely accepted and adopted construct under which all types of contingencies can be managed, assisting airports in assigning these courses will be valuable in helping staff consider the essential roles and responsibilities common to all contingencies, regardless of the type of plan they are part of. This tool demonstrates the essence of plan integration because these roles are common across all response scenarios.

The FEMA Course Selection Guide answers the question, "What's the right training approach to incident management, so our staff understands basic incident management and action plans?" It will direct small airport staff and management to the most popular ICS courses, addressing – in the small airport environment – roles that are often interchangeable.

The tool describes the seven (7) FEMA courses that are most applicable to airport contingency response, from basic to advanced and from day-to-day supervisors to airport management. It indicates which course(s) are most appropriate to airport roles, titles, and responsibilities.

5. ***Checklist & Calendar: Triggers for Plan Updates and Revisions***

This tool was designed to help airports schedule their contingency plans for review and revision, so they remain current, coordinated, and optimally actionable. It addresses updates after every contingency event that produces an After-Action Report (AAR), regulatory changes that may impact plans, or every material exercise that drives continuous improvement. This tool answers the question, "How often should we change our plans?"

The tool approaches plan updates for small airports in a way that spreads the update schedule across the year, so this activity does not overly burden staff in a single once-per-year process. The checklist includes space for each type of contingency plan airports have, binary requirements for updating, frequency and calendarization for updates, and recommended exercises to test plan revisions.

6. ***Checklist of Exercise Types***

This checklist was designed to help airports understand the range of exercises they might consider to rehearsal and exercise their contingency plans - since it is during exercises that airports can "practice" integrating the actions of many other contingency responders participating in the exercise. This tool answers the question, "How often should we conduct exercises and for what purposes?"

It utilizes FEMA's Homeland Security Exercise and Evaluation Program's (HSEEP) guiding principles and approach to planning, conducting, and evaluating both discussion-based and operations-based exercises. These four types of exercises familiarize players with plans, policies, procedures, and agreements:

- Seminars
- Workshops
- Tabletop exercises
- Games

These three types of exercises help to validate plans, clarify roles and responsibilities, and identify resource gaps:

- Drills
- Functional exercises
- Full-scale exercises

7. ***"EOC" Tool***

This tool was designed to help airports consider implementing either a tangible or virtual version of an Emergency Operations Center (EOC) scaled to their size, staff, and resources. Even more directly than multi-player exercises described in the tool above, assembling the response stakeholders in a single locus of communication, information sharing, coordination, and command during contingency incidents is an excellent example of real time integration among the numerous incident response stakeholder leaders, departments and agencies that should have a "seat at the table", either real or virtual.

This tool answers the question, "How can we best manage incident information, coordination, and action plans during the event itself?" The tool recognizes that "the EOC approach" is the best model for integrated incident management by involving the right mix of decision makers. It identifies the necessary EOC functions that should be addressed, based both on ICS structure and on the types of agencies present in the EOC, which will vary broadly among airports and types of events. The tool also speaks to the optimal configuration of EOCs and distinguishes between must-have functions and optional functions for the EOC.

Communication Tool

We developed one (1) Communication tool to help airports ensure that communications among all airport stakeholders and between them and external stakeholders are designed into each of their contingency plans, managing the art of messaging and assuring that disclosures meet regulatory and statutory requirements.

8. ***Crisis Communications Template for Contingency Plans***

This tool was designed to help airport management ensure that communications are built into each of their plans to meet regulatory, legal, operational, and public interest needs. It answers the question "How do we make sure we are communicating effectively and accurately to our constituencies throughout the incident action lifecycle?"

The template is designed to be used for each stage of a contingency response because communications focus, topics, and audience can change rapidly during the lifecycle of response stages and events. The tool forces airports to define:

- Message Development
- Message Approval
- Message Communication
- Co-communicators
- Method of Communication

The template will help airports determine if the right triggers for official communications are considered in their contingency plans. It addresses pre-drafted/pre-approved disclosures, communications, and messaging at the appropriate steps in each situation addressed by airport plans.

Task 7 – Interim Report & Interim Panel Meeting

The Interim Project Report was submitted in early April 2023, summarizing the completion of Tasks 1-6. After the Panel reviewed the Report, the Principal Investigator met at the National Academy of Sciences Keck Center on March 30, 2023, with the ACRP 03-68 Panel.

Meeting Summary

The core research finding that the small airport community perceived little value in integrating contingency plan was presented to the panel. As this was unexpected, we discussed methodology, process, documentation, and how we should interpret the message of the research results. By meeting's end, it was determined that:

- good research sometimes requires a pivot and produces unexpected results,
- small airports understand their contingency plans and the value in integrating them in an operationally usable and effective way,
- new elements are added to the deliverables and edits to others – as a result of panelists' suggestions - improved the ACRP 03-68 toolkit that we pilot tested in 2Q23, and
- adding a Guide enabled us to provide an effective frame of reference to the updated toolkit, provided an introductory coda on the value of plan integration, and described the tools and how they are meant to be used together by small airports.

Panel Comments and Research Team's Response

Panel feedback helped the research team develop valuable additions to the deliverables, which are reflected in the toolset shown in **Appendix F:**

- New vision for a more inclusive and advocacy-oriented Guide that addresses constructive suggestions made by the Panel

- A new Key Staff Turnover Tool which addresses contingency-related succession planning considerations to remediate the risk of a small airport losing important institutional knowledge with the departure of key personnel
- Additional edits to these tools:
  o Contingency Planning and Integration Decision Tree
  o Determining Appropriate Exercises
  o EOC Integration
  o Checklist & Calendar for Plan Updates and Revisions

Task 8 – Pilot Testing & Technical Memo

During May and June of 2023 we scheduled, planned and facilitated the tabletop exercises that comprised our field pilot testing. Some research team members facilitated these on-site, while others joined virtually. Facilitators conducted these during the second week of June for:

- Tampa Executive Airport (VDF, Tampa, FL), a general aviation airport that is part of the Hillsborough County Aviation Authority
- Eastern Iowa Regional Airport (CID, Cedar Rapids, IA), a small hub
- Des Moines International Airport (DSM, Des Moines, IA), a small hub

The objective was to test the updated nine (9) draft contingency plan integration tools that the research team created by discussing the perceived utility of the tools using a tabletop simulation of a disaster situation to evoke participants' reactions.

Each airport was provided the draft Guide and a copy of each of the nine tools in advance. We presented each tool and led a discussion of them with airport representatives, using this grading rubric to note their reactions:

1. Like it, will probably use
2. Like it
3. Like it but needs changes
4. Maybe OK for other airports
5. Not needed, delete

Following discussion of the individual tools, each group did a tabletop exercise based on the scenario of planning for a triennial exercise and then responding to an Alert III to see how each tool would function in this simulation. Each pilot test airport participant then gave us their overall assessment of the tools and the project. **(See the tabletop exercise slide deck in Appendix H.)**

All three airports indicated that they generally liked all nine tools. Doubts and objections that the research team described about tool utility and value in our initial research were not apparent during the sessions, indicating to the research team that evaluating a set of tangible tools in the

context of how usable they might be in practice, made it easier for airport participants determine value and usability.

Out of 27 possible marks (most optimal), 26 scored "Like it, will probably use" and one airport scored one tool as "Maybe OK for other airports." There was unanimous approval of the tools and statements from participants that they would achieve the stated goals of ACRP 03-68.

Each airport made (generally minor) suggestions for improving the usability of some of the tools, as we described in the Pilot Testing Technical Memo. The research team discussed the merit of the suggestions and determined that some merited changes to the Guide.

All participants suggested adding the location (electronic or hard copy files) of key documents to tool #4 (Succession Planning Tool) and tool #8 ("EOC" Tool), which we did in the draft final of the toolset. We received good suggestions for improving tool #4 (Succession Planning Tool), for reconsidering the use of red example text in some tools and adding minor features. There was disagreement about whether adding an index to the tools would be helpful or if the Guide's treatment of this was self-explanatory.

One airport suggested combining two tools into one, but others were evenly split on this suggestion. The research team determined that the complexity of combining them was not broadly warranted enough to contradict the fundamental objective to make sure the tools are all easy to understand and use. **(See Appendix I Pilot Testing Technical Memo.)**

Task 9 – Final Draft Deliverables for Panel Review.
The research team completed making changes and updates to the draft final toolset, based on feedback we received during field pilot testing, and uploaded them into the TRB portal for Panel review on August 31, 2023. We incorporated all the tools as interactive PRF files by embedding them into the Guide, so they would be easy to locate, read about, open, and use.

On October 16, 2023, we received panel comments on the draft final deliverables. The research team provided our response to panel comments during the week of October 16, 2023.

Task 10 (a) - Final Tools and Guidance for Review
On October 31 we provided the final deliverable to the TRB through the ACRP 03-68 Senior Program Director for formatting and hosting for download from the TRB portal, where it will be available for interested airports to use.

Task 10 (b) – Final Report with Required Memos
This final project report, required memos, the FD Transmittal form and the Certification of Compliance with Copyright form was submitted on October 31, 2023, completing ACRP 03-68.

Findings and Applications

Because ACRP 03-68 was a project designed to result in a contingency planning toolset, our key findings have been documented in the body of this report and certain appendices. This section summarizes those key findings:

1. **Small airports generally did not perceive the integration of their contingency plans as an urgent or useful exercise.**

   This finding caused a reckoning among the members of the research team and Panel because it so directly contradicted the problem statement and research premise. Research interviews showed that that managers and contingency response staff at small airports did not understand how integrating their plans and tools would add value or why it was a good use of their limited time to attempt to do so. They saw this as more of an academic exercise that larger airports have the time to address.

2. **The pervasive resource limitations – of staff, time, and funding – that small airports face force them to "make do" during contingencies with tactical, reactive tools that are situation-specific.**

   Research interviews showed that the operational realities at often under-resourced small airports compel managers and contingency response staff to use or develop tools, processes and procedures that work in their environments, and that the more formal approach large airports use is unsupportable in the small airport operating environment. This capacity and capability issue seems to be a pervasive reality at small airports, telling us that expectations of formal contingency planning in these environments is a unrealistic expectation. These airports have become remarkably adept at creative, site-specific solutions to how they handle contingencies.

3. **To be useful, accepted, and adopted by small airports, new contingency planning and integrations tools should:**
   a. add new value or insight,
   b. help airports better align with the municipal or county contingency planners,
   c. imply virtually no administrative load,
   d. be usable in the tactical, response-oriented context of "just -in-time" contingency response practiced at these airports,
   e. prove easy to understand and easy to use, and
   f. be made available for free in hard copy format.

   The message researchers received from small airport management and staff was about ensuring tools meet their "test" of applicability to their environment, value added to their tactical focus on contingencies, support of their communications with other organizations during response, and tool usability.

Conclusions and Suggested Research

The research completed under ACRP 03-68 opened an aperture into the operational realities in which small airports think about and manage operational contingencies. It tells us that their world can be quite different than the environment in which their larger airport colleagues operate from the perspective of how they deal with contingency planning, coordination, and response.

Research showed that resource constraints obligate us to develop contingency planning tools that are tactically useful and purpose-built for small airports that do not have the luxury of sophisticated integration of contingency planning systems. It told a "tale of two cities" story of how creative and resourceful small airports must be to manage contingencies, as compared to the more formal administration of this core capability present at many larger airports.

The nine contingency planning and integration tools that were developed under this research project appear, in the research context, to meet the requirements of small airports documented in the research.

The related topic that this research did not have the time to delve deeply into suggests a subject for additional research around how small airports can realistically optimize how they manage contingencies alongside the cities and countries in which they operate. Because these airports may be more dependent upon their host jurisdictions than larger, more self-capable airports, inter-agency communication and coordination seems a ripe topic for further research.

The qualitative research format used in ACRP 03-68 across a small sample size also suggests that further quantitative research with a larger sample size could be beneficial to small airports and the airport community writ large.

Appendices

Appendix A: Airport Questions

(1)　Is the notion of financial and operational resilience (the sustained internal capacity to recover from inevitable disruptions with the least damage to our mission….) something that is being talked about and addressed?

(2)　What disaster/disruption/crisis/resilience-relevant plans does the airport (or other case) have in place?
- a. Emergency Management Plan/Airport Emergency Plan (AEP)
- b. Business Continuity Plan (BCP)
- c. Continuity of Operations Plan (COOP)
- d. IT Disaster Recovery Plan
   - i. Do these plans (BCP, COOP, IT include an enterprise impact analysis that reasonable accurately measures the cost of process or functional downtime across measures like financial, reputational, service, legal/regulatory, and contractual impacts?
- e. Irregular Operations Plan (IROPS)
- f. Cooperative Plans
- g. Cyber Incident Response Plan
- h. Crisis Management Plan
- i. Crisis Communications Plan
- j. Recovery Plan
- k. Precontracting for goods and services for recovery
- l. Other types of contingency plans (Please specify: _____)
   Pandemic plans
   Evacuation plans
   Repopulation plans
   Mass casualty plans

(3)　How would you describe the state of these plans?
- a. Fully baked, tested regularly
- b. Fully baked on paper
- c. In process
- d. Just starting

(4)　What office(s)/department(s)/agency(ies) collaborated on the development of these plans?

(5)　What group owned ultimate responsibility for each plan?

(6)　Are these stand-alone plans for your facility/operation or are they part of the planning of the municipal/county/state jurisdiction in which it operates?

(7) How effective would you say the plans are at tangibly/practically helping/guiding the facility in its resilience?
  a. Do they get to the level of published SOPs, Checklists, Role-based crisis management, Field Officer Guides (FOGs)--i.e., in a form that is tactical, results-oriented, and role-based?
  b. Are they reviewed and updated regularly?
  c. How/if do you train on the plans?
  d. Do you exercise them with simulations, tabletop, functional or full-scale exercises on any regular basis?

(8) To what extent do your plans include interaction with/mutual aid agreements with security, law enforcement, emergency-related agencies in your area?

(9) What level of support and sponsorship would you say that senior management displays for the planning process?
  a. Our resilience-related plans are a strategic imperative, appropriately funded, and this is widely communicated.
  b. Management is interested but considers these contingency plans to be requirements they must meet at minimum cost.
  c. We assign these plans well down the organization to check the box.
  d. Other (Please specify: _____)

(10) Does the airport use some kind of synthesizing construct, model, or framework to integrate these plans in a high-level process?
  a. Does it view integration as a worthy objective or does it believe that these plans are fine as "stand-alone" programs managed by their "owners"?

(11) How do you define integration of these plans?
  a. They make reference to each other on paper—i.e., are internally cross-referenced.
  b. We rehearse them in combination.
  c. They are deeply connected at the role, process, funding, and operational levels.

(12) How does the organization operationalize these plans in relation to each other?
  a. Are they integrated using some kind of real-time collaborative crisis management technology?
  b. Please describe how this works and if it has been effective.

(13) What are the outcomes and benefits that the airport has seen from plan integration?

(14) What are the obstacles you face at addressing plan integration effectively?
  a. Budget
  b. Management support and recognition

   c. Disparate departments/agencies that don't play well with others
   d. A culture of independent agency operations
   e. Other (Please specify: _____)

(15) What tools would be most helpful to you from ACRP 03-68 in improving the airport's ability to more closely integrate its various plans and processes?

(16) Is there anything on this topic that we haven't asked that you wish to address?

Appendix B: Summary of Detailed Interview Findings
Detailed Interview Findings

Topic	Feedback and Interpretation	Tools Implications
Desirability of contingency plan integration	Airports value integration but in different ways. Full integration of all airport plans into one document or under existing AEP may not be practical or desirable. Airports are looking for ways to improve efficient response and recovery from disruptions. Almost universally, plans were not formally "integrated"; many questioned why they should be. Non-airports, however, demonstrated the breadth of local, state and federal regulatory obligations as sort of a "compelled or de facto integration." Most airports pointed at our obligation to describe the cost/benefit by calling into question the "benefit" part of the equation.	Action-level integration may be more beneficial and useable for many airports than integration at the plan-level. "Action-level" speaks to field-level tools such as SOPs, FOGs, and checklists. Action-level integration could include integration in training, exercise and EOC models.
Financial and operational resilience is a significant issue	A majority of our case studies confirmed that operational resilience is always front burner, well supported in their culture of preparedness, especially when response level departments keep senior management regularly apprised of how their activities and responsibilities impact airport resilience. All airports seem to understand the need for operational and financial resiliency, but financial resiliency was not on the agenda of interviewees. Post-pandemic, focus is on all forms of resilience including financial (but by senior airport management, rather than	Emergency/crisis type plans that are often activated may naturally integrate better than those only occasionally activated (IROPS, e.g.). Financial resiliency should not factor in our tools and deliverables unless we hear to the contrary from the new interviews that we are facilitating with airport financial executives.

Topic	Feedback and Interpretation	Tools Implications
	"front line response" managers). This has encouraged more focus on integration. Because airports are expanding, they recognize the importance of resilience and integrating plans with outside agencies.	
Senior management role including governing boards	Operational resilience was generally found to be well supported by senior management. It is important to have support from the top down. A culture of collaboration and resiliency is very helpful but may be hard to create and sustain. When airport directors provide an annual airport report to the board and city, it is good P.R. for response planning and training as an element of preparedness, paying dividends during budget time. "Educating up" is a common emphasis to secure and maintain senior management support. Funding is ALWAYS the issue. Non-airports were adept at identifying and exploiting funding grants for integrative activities; but this came at a "price" of their having to "live with the results", which entailed recognizing that the lead grant recipient agency might receive fewer funds, so the region, as a whole, won collectively more. Meeting often with senior management about resilience was the best way to be remembered during budgeting. Non airports' natural focus on regionalizing their approach felt that gave them "weight at the discussion table" with other agencies with which they integrated.	Useful integration tools must appeal to senior management as materially furthering contingency preparedness and response, as part of airport resilience. Tools must also appeal to front line response and recovery managers as useful, accessible, usable, and "accretive" to what they already have in place - so they will use them and defend them to senior management. Tools cannot cost much, if anything. In that context, there is no appetite for subscriptions to technology tools and applications.

Topic	Feedback and Interpretation	Tools Implications
Contingency plans beyond the AEP	Few airports have the full set of contingency plans. Most have only the required plans (AEP and IROPS) and typically are a node on the city or county COOP. Use of distinct, topic-specific contingency plans ranged from zero (a small GA airport) to more than 15 across our case studies. There was some support for using the AEP to generally cover all required functional areas, but to supplement it with stand-alone plans, SOPs & checklists. Emergency/crisis situations and associated plans may be the type of plans that lend themselves to effective integration, as there is a natural congruence of "tactical response" among them. To the extent that these are frequently activated, the culture is "burned in," thereby creating a "muscle memory" for integrated response. For the more frequent types of emergency/crisis situations, airports may need to rely less on FOGs, SOPs, checklists; however, such tactical-level tools are appropriate for less-often activated plans where there may not be staff "muscle memory." Non-airports do a lot of FEMA style and NIMS/ICS training sessions which are practice that help enculturate action, resulting in less need for the use of checklists, SOPs, and FOGs	It is essential that separate plans be deconflicted, cross-referenced, and coordinated. Tools should realistically support the tactical response process.
Integration of ASP	When coordinating contingency plans by whatever method, airports felt they should factor in their ASP and related	Do not integrate ASP content in any contingency plan integration tools.

Topic	Feedback and Interpretation	Tools Implications
	documents. However, contingency plans need to be non-SSI to the greatest extent possible, which limits extent of ASP integration. .	Building security elements robustly into emergency training and exercises can create de facto integration without triggering SSI concerns Make sure Airport Security is well represented in the EOC and in the ICS structure.
Development process for plans	It is beneficial to have a champion for airport contingency plan integration. Almost all airports have their formal "FAA AEP" and some type of "response AEP" (in the form of FOGs/SOPs/checklists). Although several airports put every contingency plan they have into their AEPs, most of the interviewed airports prefer to keep the contents of required AEP annexes very high level/generic and to put the details in other standalone plans or tools. Allowing customization of, and flexibility within tools and checklists is important. Collaboration during plan development is a recurring theme. Airports found results based collaborative effort between internal and external resources has been beneficial. Use of highly constrained staff time to just update, train, and de-conflict multiple plans is very time consuming. Complexity and time-constraints leads to poor input, participation, processes. Integration at the three stages of incidents – emergency, crisis management/communications, and recovery interjects too many moving	"Action-based integration" has a natural primacy in the airport community. Do not separate integration tools by the stages of incidents (emergency initial response, crisis management/communications, and recovery).

Topic	Feedback and Interpretation	Tools Implications
	parts across the incident timeline.	
Relationship of airport plans to broader government plans	Airports that are part of municipal/county government have the challenge of both being a "node" on the city's COOP or Mass Casualty or Pandemic Plan (thus constrained into that system), and having their own airport specific plans (AEP, FSP, IROPS, etc.). City/county affiliation both (a) adds to agencies' availability for collaboration, and (b) may constrain/define/expand the nature of that collaboration. Many airports stressed the importance of either staffing an internal Emergency Manager or working with an established external City/County Emergency Manager. Regional response to resiliency is only as effective as those who are incorporated into exercises and training. Plans that are "owned" by other entities might become the "problem children". Airports may lead the community planning (probably due to the Part 139 emergency response training requirements).	Tools must take into account the city/county government relationship many airports must deal with and be flexible enough to accommodate public and authority airports and the constraints imposed on them from that circumstance.
Role of mutual aid relationships	Regional response to resiliency is only as effective as those agencies that are incorporated into exercises and training. There is value in training and discussing scenarios to integrate response plans and ensure a coordinated response internally and with external partners.	Our tools portfolio should include best practices for seating players in the EOC, inviting broadly for participation in drills and exercises.
Tactical level plan formats	When coordinating contingency plans by whatever method, an airport should consider factoring in its FSP and related documents.	Tools must be accessible, easy to use, brief, directional, and action oriented.

Topic	Feedback and Interpretation	Tools Implications
	Many airports utilize self-developed tools such as tactical worksheets, SOP's, checklists, and other simple tools to facilitate response. These tools may be more operational than the higher-level AEP.	SSI present in FSPs argues for not integrating them.
Plan review and update practices	Plans need regular schedule for review and update and to exercise. Consider annual work plan for review and update of all contingency plans with staggered dates. It is beneficial to have broad involvement of stakeholders for each plan and to have a champion for airport contingency plan integration.	Consider a template for review and update schedule.
Training	There is value in training and discussing scenarios to integrate response plans and ensure a coordinated response internally and with external partners. Train often to remain proficient and promote integration.	Index to specific airport emergency training materials and general FEMA and ICS training resources. Consider a tool on best practices to invite all the partners, stakeholders, and agencies into the training process.
Exercises	Few airports do formal AAR/IP for incidents or exercises. Even fewer have formal tracking of action on IP items.	Template for AAR/IP Checklist for performing hotwash and AAR/IP. Template for IP action tracking of corrective actions. Best practices for broadly inclusive Simulations, Drills, TTXs, FXs, and FSX's.
Paper or electronic?	Few airports use subscription electronic tools beyond having plans available on	Do not develop any electronic tool.

Topic	Feedback and Interpretation	Tools Implications
	laptops and tablets. Electronic may be more expensive to acquire and maintain. Airports have no budget for eTools. The one airport that had WebEOC reported difficulty synchronizing issues among other county agencies because of lack of interoperability. Most airports don't want an additional electronic system they have to procure or subscribe to. Cost is the limiting factor. Some airports have adapted other online tools to integrate contingency responses (Everbridge, Microsoft Teams). Paper may be more labor-intensive to keep updated and synchronized/deconflicted. Combination of paper and electronic could be most useful as it gives maximum accessibility and flexibility.	
Integration activities in current practice	Airports use several processes that have the effect of integrating the various contingency plans: • Culture of collaboration. "Collaboration" (a behavioral notion that's built into the culture) is as important as "integration" (a technical concept); but a culture of collaboration and resiliency may be hard to create and sustain. • Training and joint training • Drills and exercises. Live annual full-scale drills used for "integration at work. • Joint planning. Airports may lead the community planning (probably due to the Part 139 emergency response training requirements). This often results in integration opportunities. • ICS • Crisis communications. Many airports	A checklist of the possible culture and/or operational tools for integrating contingency plans. A best practices crisis communications tool. Re-think the initial assumption and that of the problem statement away from "paper tool combination/coordination" toward operational, behavioral integration.

Topic	Feedback and Interpretation	Tools Implications
	struggle with crisis communications. • Mutual aid • Joint planning • Stakeholder engagement • Community engagement and outreach • Third party contractor to assist with planning or integration activities ICS as an integrating principle appeared to be a possibility. A best practice for smaller airports may be to train everyone in ICS. ICS can help resolve crisis communications problems. It seems to be in the operationalization of plans that "integration" occurs. This occurs through training and exercises: daily briefing, drills, snap drills, training, so-called "tactical worksheets," exercises (tabletop, functional, full-scale), FEMA courses, and NIMS/ICS training. It also occurs through experiencing large scale regional events that forced response integration by default. The benefits of operationalization are optimized by an active after-action review/improvement plan (AAR/IP) process with follow-up. Integration also naturally occurs at the crisis communications level where situational awareness, incident command, clear articulation of the facts for constituencies, and legal/regulatory/PR "care" has to be exhibited. If integration is informal, however, an airport can lose it with retirements, transfers, deaths, dismissals, which means it is tenuous and "institutional knowledge-based" unless somehow documented and inculcated into the airport's culture. "Action-based integration" has a natural	

Topic	Feedback and Interpretation	Tools Implications
	primacy in the airport community.	
Outcomes and benefits	Plans at small airports often are in the form of "institutional knowledge" – so there is a need to capture and formalize that knowledge. Documentation of all contingency plans is important for succession planning especially at small airports with small staffs and typically long tenures. Airports are looking for ways to improve efficient response and recovery from disruptions. Emphasis on quick reaction and returning to normal operations as quickly as possible: • Integration will increase speed and efficiency of response (once again, response oriented). • Integration will lead to clearer communication during events (ICS addresses the PIO function). • Integration can improve local/regional relationships, based on achieving "common ground." • Integration provides a more accurate, holistic picture across elements of airport operations. • Integration can justify budgeting priorities and decisions. Outstanding resiliency board awareness helps at budget and resource allocation time.	Tools must not just add more work or create the burden of another document to be responsible for, but instead must provide some real and new insights and best practices for how response can be improved by approaching response integration more effectively, in order to realize the integration benefits.
Costs	Funding is ALWAYS the issue; cost is a factor in tool development for use at smaller airports.	Tools must be free.
Cost-benefit analysis (CBA)	No interviewees reported any CBA attempts or results for plan integration. Cost-benefit analysis will be very difficult for this research.	We have identified the benefits, and we know the cost is essentially the time airports don't have, and the enthusiasm they will not

Topic	Feedback and Interpretation	Tools Implications
		display if the tools are not widely perceived as cleverly effective in airports' day to day preparation, response and recovery activities.
Non-financial constraints	Airport staffs may lack time to write and integrate plans. What is the appropriate role of consultants to do that? Use of staff time to just update, train, and de-conflict multiple plans is very time consuming. Regulations and politics were noted as contributing issues, resulting in not integrating well with other agencies. Legal constraints were mentioned as well. Small airports' staff limitations means that if a knowledgeable person separates or exits, lots of institutional knowledge goes with them.	Because small airports are highly constrained by staff time availability, and employees may resist learning a system that may be different from what's done today, tools developed in this project need to be simple, accessible, easy to learn, easy to implement, and capture/document personally held institutional knowledge.
Desired new tools	"We learn best from others' experience, successes and mistakes." One airport said this, but it was implied in every interview. Base tools on best practices. Don't create something new—don't reinvent the wheel. Prefers a single document for each type of incident, with that document being easily accessible. This is a common theme and may be the reason more airports prefer easy to use SOPs and checklists. FOGs for short term staff response and	Consider if the Aviation ISAC[2] as a cyber information sharing tool that could be used for non-cyber events or as a model for a new sharing tool. Tools need to be scalable for complexity of incidents, complexity of airports, and complexity of community contexts (including mutual aid). While this is an incomplete list, possible tools for our analysis phase might be ones that:

---

[2] (The Aviation ISAC provides an aviation-focused information sharing and analysis function to help protect global aviation businesses, operations and services. Our vision is a safe, secure, efficient, and resilient global air transportation system. The A-ISAC analyzes and shares timely, relevant and actionable cyber security information as it pertains to threats, vulnerabilities, and incidents. Also, the A-ISAC enables its members to share threats in real time, understand how to tactically combat threats and implement mitigation strategies, enhance collective sector knowledge and implement best practices. A non-profit organization, A-ISAC membership is open to trusted private sector global aviation companies.) - www.a-isac.com

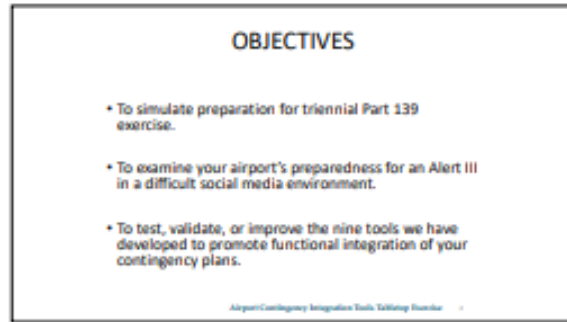| Topic	Feedback and Interpretation	Tools Implications
	separate integrated plan for longer term recovery. Airports desire tactical, how to, SOPs and FOGs, and templates that work during the first few minutes of an incident. This can be stretched to the first few hours as responses to rural airports will take time leaving the airport as the front line. Allowing customization of tools, checklists is important. Build flexibility into them. Consider tactical worksheets with specific benchmarks. Psychological effect on users is critical (e.g. - 14 10-page docs vs. a single 140-page doc) – short plans are perceived as more usable and more likely to be used. Avoid complicated, hard-to-learn tools. Checklist of "Questions I need to ask" = what am I forgetting to acknowledge/don't know/resources I lack? Tools with built-in scalability for development, planning, and training. Integration solutions need to address high airport turnover and may imply that they may not use complicated tools effectively. Lessons learned and solutions need to be shared freely among airports in near real time. Scalability is a key integration issue, so tools have to scale up/down based on size and complexity of the "player environment." Tools will be optimal if they are based on best practices and provided in template form; don't invent something brand new.	• Inventory airports' current contingency plans with a checklist of all possible plans, and crosswalk contingency plans • Enable plan gap analysis and deconfliction • Simplify developing an ICS structure, establishing EOC operations • Help guide crisis communications • Index to ACRP Synthesis 72 and other ACRP and PARAS reports with exercise tools • Guidance for essential FEMA and ICS courses • Guide the plan review and update schedule • Etc.

Topic	Feedback and Interpretation	Tools Implications

	Two levels/types of integration are needed that enculturate response and recovery across the community of collaborating agencies, departments, airport tenants:
	
	(1) Develop a tool(s) for cross-walking contingency plans, that
	    a. Cross-references plans where appropriate
	    b. Performs a gap analysis to:
	      • identify what plans or incident types are not addressed, and
	      • deconflict where incidents are at odds among the plans
	    c. Suggests how to close the gaps
	
	(2) Integrate at the action level (versus policy-based integration or plan integration) with tools that guide airports on best practices for:
	    a. How to use the ICS as the overriding construct that accommodates and scales to airports of all sizes, levels of staffing and complexity, whether independent or a city/county agency; addressing "all-hazards", including precontracting for emergency goods/services, and how to develop good Incident Action Plans that can be used for all hazards.
	      • Also integrate at the crisis communications level as an umbrella construct.
	    b. Setting up and running an EOC focusing on who has a seat there – airlines, tenants, agencies, etc. so that they "take their brand off" their response participation
	    c. Setting up an effective Local Emergency Planning Committee.
	    d. Training in-house, regional community and ICS courses 100, 200, 300, 700, 800	

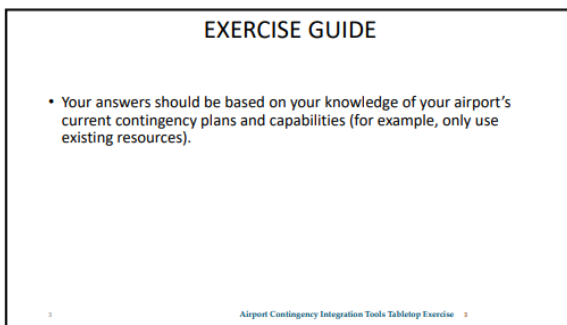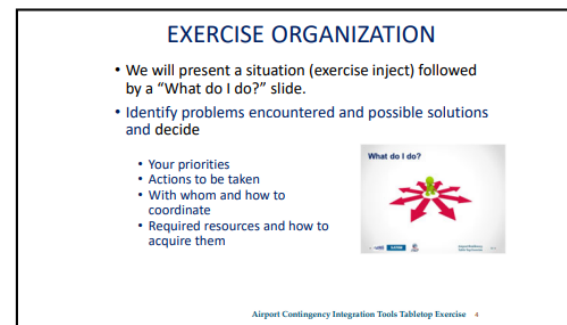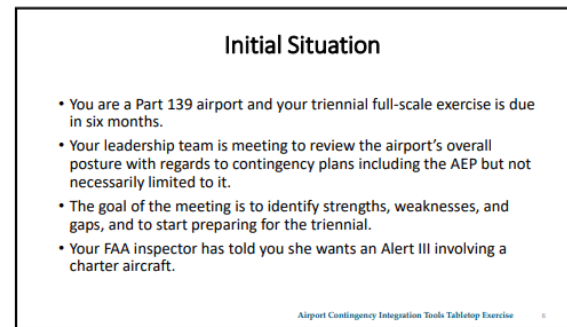| Topic	Feedback and Interpretation	Tools Implications
	e. Exercises – tools could be guides for developing and facilitating: • Drills/Snap Drills • Workshops • TTXs • FXs • FSXs f. Tactical guides – how to develop good SOPs, FOGs, Checklists, MOU and Mutual Aid templates (psychology of these "grab 'n go" tools much better than 5" thick binder). • It's more about collaboration (a behavioral construct) than integration (a technical construct), to promote airport self-sufficiency, accessibility, usability. • You get airports there by practicing so effectively with tools that response integration happens "automatically" – they get good at what they rehearse, and bad at what they let lie fallow. g. Establishing a regular schedule of plan review and update. h. Maintain and reward stakeholder engagement.	
Tracking resiliency	Quick reaction and returning to normal operations as quickly as possible. Cultural shift towards collaboration.	Quantitative metrics are unlikely to be developed or accepted. The main qualitative measure will be time to restore normal operations, lost income, or cost to recovery. An important but very difficult measure is damage to or enhancement of the airport's reputation or brand depending on the quality of response and recovery.

Appendix C: Tabletop Exercise Slide Deck

Slide 1:

ACRP 03-68
TABLETOP
EXERCISE

Slide 2:

OBJECTIVES

- To simulate preparation for triennial Part 139 exercise.
- To examine your airport's preparedness for an Alert III in a difficult social media environment.
- To test, validate, or improve the nine tools we have developed to promote functional integration of your contingency plans.

Slide 3:

EXERCISE GUIDE

- Your answers should be based on your knowledge of your airport's current contingency plans and capabilities (for example, only use existing resources).

Slide 4:

EXERCISE ORGANIZATION

- We will present a situation (exercise inject) followed by a "What do I do?" slide.
- Identify problems encountered and possible solutions and decide
  - Your priorities
  - Actions to be taken
  - With whom and how to coordinate
  - Required resources and how to acquire them

Slide 5:

Relax

Slide 6:

Initial Situation

- You are a Part 139 airport and your triennial full-scale exercise is due in six months.
- Your leadership team is meeting to review the airport's overall posture with regards to contingency plans including the AEP but not necessarily limited to it.
- The goal of the meeting is to identify strengths, weaknesses, and gaps, and to start preparing for the triennial.
- Your FAA inspector has told you she wants an Alert III involving a charter aircraft.

Slide 7:

New Toolkit Available to You

- **PREPAREDNESS**
  (1) Decision tree plan integration tool
  (2) Checklist of plans tool
  (3) Functional commonalities tool
  (4) Key staff turn-over tool
  (5) Plan review tool
  (6) Determining appropriate exercise tool
  (7) Airportized FEMA course selection guide
- **RESPONSE AND RECOVERY**
  (8) EOC tool
  (9) Crisis communications insert template

Slide 8:

What do I do?

- What contingency plans do we have?
- Do the plans work well together or do they contain conflicts?
- How recently were they reviewed?
- Are there any plans we don't have but should have?

Triennial Scenario Development

- Having reviewed your contingency plan(s),
  - What capabilities do you want to test in your triennial?
  - Which stakeholders do you want to involve?
  - Which mutual aid partners do you want to involve?
- Are you still satisfied with your contingency plan(s)?

9

Is Your Staff Prepared?

- Have they had the right training courses?

- Do you have a plan to use a series of smaller exercises such as seminars and tabletops to prepare for the triennial full-scale exercise?

- What do I do if a key employee is unavailable?

10

What do I do?

- How to identify relevant training resources?

- How to choose preparatory exercise types?

11

Six Months Later - The Triennial

- Smallish Charter Jets flight 3391 has a disturbance onboard among passengers. The nonscheduled, domestic passenger flight is operating under Part 135. An instrument flight rules flight plan had been filed and activated; however, it was canceled 15 minutes before the approach.
- The flight is on final approach to Runway 18.
- The cabin crew is unable to control the situation. Passengers are panicking and moving about the cabin to escape the fight.
- Due to the shifting weights the aircraft is harder to control and the pilots are losing control of the aircraft.

12

The Triennial (II)

- The pilot declares and emergency and requests ARFF support as well as security.
- ATCT communicates an Alert II to KNSM Operations.
- The aircraft will land on Runway 18 in less than 3 minutes with 60 passengers and crew on board and 3,000 pounds of fuel.

13

What do I do?

- Which contingency plans will you activate?
- Is your Emergency Operations Center ready?
- Do you need to issue any internal or external crisis communications?

14

The Triennial (III)

On March 1, 2023, about 0945 Central Standard Time, Smallish Charter Jets flight 3391, a CRJ700 airplane crashes after landing on runway 18 at Spruce Belt Regional Airport (KNSM), New Springs, Mississippi.

The two pilots and six passengers were killed, there were many critical to minor injuries to passengers, and the airplane was destroyed by impact forces.

15

The Triennial (IV)

- Aircraft has come to rest mid-runway of 18. All doors and chutes have deployed, and people are jumping out of the plane.
- The Incident Command Post receives numerous requests from outside agencies to assist. These outside agencies want to know the entry points and staging locations for fire and Law Enforcement.

16

What do I do?

- Is our Emergency Operations Center ready?
- Are you prepared to effectively communicate with on-site and outside agencies?
  - Initial notification?
  - Response coordination?
- Are you prepared for media and public reaction?
- **How is the integration of internal/outside plans working?**

17

The Triennial (V)

SOCIAL MEDIA
- Private groups have been promoting a gangster rock concert in town.
- Reports are that rival gangs have taken over the flight.
- Social Media is showing reports of the fight during flight and the subsequent emergency exits.

18

The Triennial (VI)

- The sixty people on board have been accounted for and are being treated for multiple injuries.

- Ten people have been arrested.

19

What do I do?

- Are your crisis communications working?
- How is your crisis communications plan being integrated with other (local/regional) agencies?

20

After the Response Phase

- This TTX terminates before the recovery phase. The best practice is to include the recovery phase.

- Tools for After Action Reviews and Improvement planning were included in ACRP Synthesis 72 Tabletop and Full-Scale Exercises for General Aviation, Non-Hub, and Small Hub Airports.

- The tool kit used in this TTX can be used in the continuous improvement cycle.

21

HOW DID WE DO?

- What do you think about the 9 tools overall?
- Which ones do you think you'd use?
- What changes do you recommend to any of the tools?
- Are there missing tools that you'd like to have to enable functional integration of your contingency plans?
- Should any of the 9 tools be deleted?
- Are the tools self-explanatory or would you like written instructions on using each tool?

22

Introduction

This memorandum describes the field testing facilitated by the ACRP 03-68 research team during the first two weeks of June 2023. It is submitted for the 30-day Panel consideration and review.

Procedures

On June 13 and 14, 2023, members of the research team conducted in-person pilot tests of the nine (9) draft contingency plan integration tools. Three airports participated in the pilot tests:

> Tampa Executive Airport (VDF, Tampa, FL), a general aviation airport belonging to Hillsborough County Aviation Authority

> Eastern Iowa Regional Airport (CID, Cedar Rapids, IA), a small hub

> Des Moines International Airport (DSM, Des Moines, IA), a small hub

The same procedure was followed at each pilot test site. Each airport had been provided with the draft Guide and a copy of each of the nine tools in advance, so they could familiarize themselves before the tabletop exercise. During the sessions, the research team members presented each tool and a discussion followed touching on the strengths observed by the airports or areas they suggested for improvement.

A grading rubric guided the discussion and was used to summarize the results. The rubric presented five options:

1. Like it, will probably use
2. Like it
3. Like it but needs changes
4. Maybe OK for other airports
5. Not needed, delete

Following the discussion of the individual tools, we facilitated a tabletop exercise for each airport group, based on the scenario of planning for a triennial exercise and then responding to an Alert III to see how each tool would function in a simulated disruptive emergency. Following the tabletop exercises, each pilot test airport provided its overall assessment of the tools and the project.

Results

In summary, all three airports liked all nine tools. The scorecard using the rubric showed—out of 27 possible marks (9 tools x 3 pilot test airports)—that 26 scored "Like it, will probably use" and one airport scored one tool as "Maybe OK for other airports." There was unanimous approval of the tools and statements that they would achieve the stated goals of ACRP 03-68.

Each airport offered suggestions for improving the usability of some of the tools:

1. VDF suggested using Threat and Risk Identification and Risk Assessment (THIRA) results to prioritize action on the plans and SOPs listed in tool #1.
   a. *We should consider adding a note to this effect to the narrative in the Guide. (Jim will send THIRA content, but can't cite it – paraphrase) Since most airports doen't have full THIRAs, say, "if you've not done one, start or use a basic assessment.*

2. VDF suggested combining tool #6 into tool #1 by adding columns for the review schedule and responsibility. CID and DSM were divided on this suggestion. The operations director at DSM felt strongly that they should be kept separate.
   a. *A follow-up request to VDF for more details resulting in them sending a revised tool #1 (Attached).*
   b. *Because the tests revealed a split on this, and because a core objective for the tools is simplicity and ease of use, the research team recommends keeping tools #1 and #6 separate.*
   c. *The simplicity and flexibility of the tools enables airports to customize them to fit local needs and preferences, including the kind of combination suggested by VDF. Airports can chose to combine.*

3. All three airports suggested adding the location (electronic or paper files) of key documents to tool #4 (Succession Planning Tool) and tool #8 ("EOC" Tool).
   a. *We should amend tool #4 and tool #8 to add a line for inserting this information.*

4. CID suggested adding recommended replacement or substitute personnel by name or by position title to tool #4 (Succession Planning Tool), with their identity being based on having the same qualifications and ideally experience as the primary person for that section of the tool. DSM concurred with this suggestion.
   a. *We should amend tool #4.If not A, then B, if not able, then C; 1st, 2nd ,3rd backup*

5. CID found tool #9 (Crisis Communications Template for Contingency Plans) to be confusing as different positions in their organization control external communications and internal communications. They suggested deleting the sample entries (red type) and adding a column for the various means of communication that identifies each as being for internal use or for an external audience.
   a. *We should further consider this recommendation.*

6. VDF suggested adding an index to the tools to the front of the final tool if the final product includes an electronic version (i.e., spreadsheet) but CID and DSM stated that the Guide introduced them sufficiently and that the tools were self-explanatory.
   a. *We might consider an index embedded into the Guide that works in the final format with which the TRB makes the toolset available.*

PARTICIPANTS

Airport	Airport Representatives	Research Team Members
Tampa Executive Airport (VDF)	• Senior Manager, General Aviation • Senior Manager, Business & Administration – General Aviation	Shaun Germolus Julie Quinn* Dave Beaver* Jim Smith*
Eastern Iowa Regional Airport (CID)	• Public Safety Commander\ Airport Security Coordinator	Dave Beaver Jim Smith
Des Moines International Airport (DSM)	• Director of Operations • Airport Police Chief • Emergency Operations Director	Dave Beaver Jim Smith

*Participated virtually

Research Team Comments

The tabletop exercises were quite well received as providing effective context to airport exercise participants with which to consider the value and usability of the ACRP 03-68 toolset and Guide. While earlier airport feedback clearly questioned the value of contingency tool integration, the majority positive comments and interaction we experienced in the pilot testing exercises suggests that ACRP 03-68 developed a set of tools that the small airport sector will find useful and usable in practice.