

ACRP Problem Statement: 15-10-03

Best Practices for Airport Ramp Operations

Recommended Funding Amount: \$400,000

ACRP Staff Comments

The proposed research may build on ACRP Synthesis 29: Ramp Safety Practices and ACRP Report 62: Airport Apron Management and Control Programs, as noted in the problem statement. There may also be potential overlap with Problem Statement 15-10-13.

TRB Aviation Group Committee Comments

AIRCRAFT/AIRPORT COMPATIBILITY: This would produce a useful document. Emphasis should include avoiding collisions between aircraft and fixed or moveable objects, since this has been in the news and the risk has not been eliminated by the AC's.

Review Panel Comments

Recommended. The issues described in the problem statement are becoming more common at airports. There is value to the industry in providing more information in this area, but obtaining this information may be challenging. It is recommended that the funding be increased to \$400,000 to address ramp towers. (See Problem Statement 15-10-13.)

1. Problem Statement Title:

Best Practices for Airport Ramp Operations

2. Background:

Airport Ramp operations continue to evolve and become more complex. Airport operators, individual carriers, shared airline gate operators, and a combination of these have all developed independent methods, practices and responsibilities. Changing dynamics related to the Department of Transportation (DOT) "Enhanced Airline Passenger Protections," FAA Modernization and Reform Act of 2012 and FAR Part 117 (January 2014) Flight and Duty Time Limitations have all contributed to complexity of ramp operations and strained the system's ability to maintain efficiency during peak and irregular operations. Gate returns and cancelations often increase ramp congestion and gate issues. As we move toward the NextGen operations and data sharing, streamlined best practices are needed to maintain continuity among airports in the National Air Space system.

Today, a variety of methods are in place to manage airport ramp movements. Individual operators manage their gate(s) and push back; shared gates are managed by an entity (most often the airport operator); multiple gates are managed by a ramp facility/tower; taxiways and movement areas are delegated to a ramp tower operator(s); etc. All of these methods have evolved out of a need for safe and efficient ramp operations. However, a lack of standard practices, communication and real time information leads to individual confusion and excessive work during peak and complex times.

Research is needed to understand the purpose and airport tools in use, gate-sharing responsibilities, hardstand use, resources, communication and collaboration practices, all of which effectively manage the changing dynamics of the non-movement and movement ramp areas.

3. Objective:

The objective of this research is to develop guidelines to help airports, in collaboration with airlines and ramp operators to formalize standards for terminal ramp and hardstand operations.

4. Proposed Tasks:

The following tasks are recommended for this research:

- Investigate and analyze the airports that have a high number of gate returns, and specifically the tools and coordination processes they use.
- Research and identify analogies among other industry turn-around processes; for example manufacturing logistics. This would be processes such as Lean Manufacturing, Critical Path Analysis, and Impact Responsiveness.
- Survey commercial airports to determine what tools, applications and training are in place for optimizing gate management and best practices.

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- Investigate airport ramp operations predictive processes and procedures, such as real-time monitoring of the turnaround progress and the impact on throughput.
- Identify and recommend a common tool set and needed skills for shared situational awareness, focusing on alerts, airport throughput and training.
- Based on the project's research, the final recommended guidance report would develop an airport ramp operations' framework, including guidelines for methods and processes standard across all commercial service airports, independently of whoever is contracted to do the work.

5. Estimated Funding

This project is estimated to require \$350,000, which includes travel and data-gathering costs for meetings with:

- Airport Council International – North America & ACI World
- Association of American Airport Executives
- Airport Services Association (ASA)
- ICAO – International Civil Aviation Organization
- IATA – International Air Transport Association
- Airports selected and approved for review and test of Guidance Document
- Required meeting at the National Academies

6. Estimated Research Duration

This project is estimated to require 18 months to complete.

7. Related Research

- ACRP Synthesis 29: *Ramp Safety Practices*
- Airport Gate Scheduling for Passengers, Aircraft and Operations, Meta-CDM/ATM Paper 2013
- ACRP Report 62: *Airport Apron Management & Control Programs*
- ACRP Report 65: *Guidebook for Airport Irregular Operations (IROPS) Contingency Planning* (Feb. 2012)
- ACRP 10-23 IROPS Stakeholder Communication and Coordination – in progress

8. Process Used to Develop the Problem Statement

This problem statement was developed by Ed Masterson and Rose Agnew, members of the TRB AV 60 Capacity & Delay Committee in conjunction with:

- Frank Lopprano, retired Chief of Aeronautical Operations, PANYNJ Newark Liberty International Airport;
- Joe Collette, Director of Ground Operations – JFK, JetBlue Airlines; and
- Todd Tripp, Associate Director Apron Operations, Greater Toronto Airports Authority.

9. Person Submitting Problem Statement and Date

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