

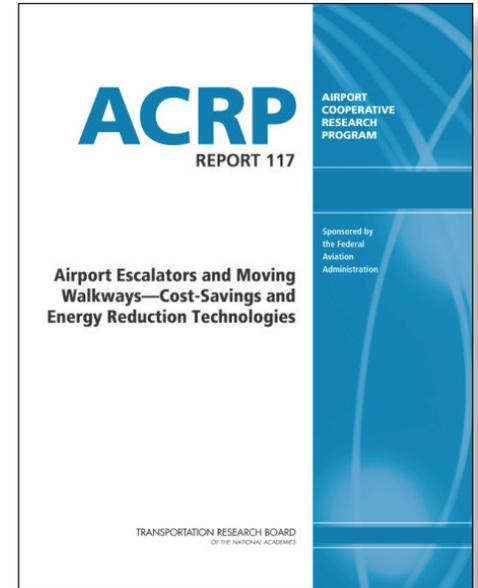
Moving Customers, Cost-Savings and Energy Reduction in the Right Direction

Airports use escalators and moving walkways to carry customers safely and efficiently between floors and over long walking distances. While these devices improve customer experience, they often can have significant maintenance and energy costs, accounting for up to five percent of electric energy use in airports.

New escalator and moving walkway technologies offer airports great potential for cost savings and reduced energy use. In addition, recent safety code changes for these devices allow for variation of their speed, expanding the options for airport operators for modernizing their equipment with more sustainable components.

ACRP Report 117: Airport Escalators and Moving Walkways—Cost-Savings and Energy Reduction Technologies is a comprehensive resource designed to help airport managers in identify energy savings technologies currently available for these devices. The report includes information on the selection, implementation, benefits, and limitations of each technology.

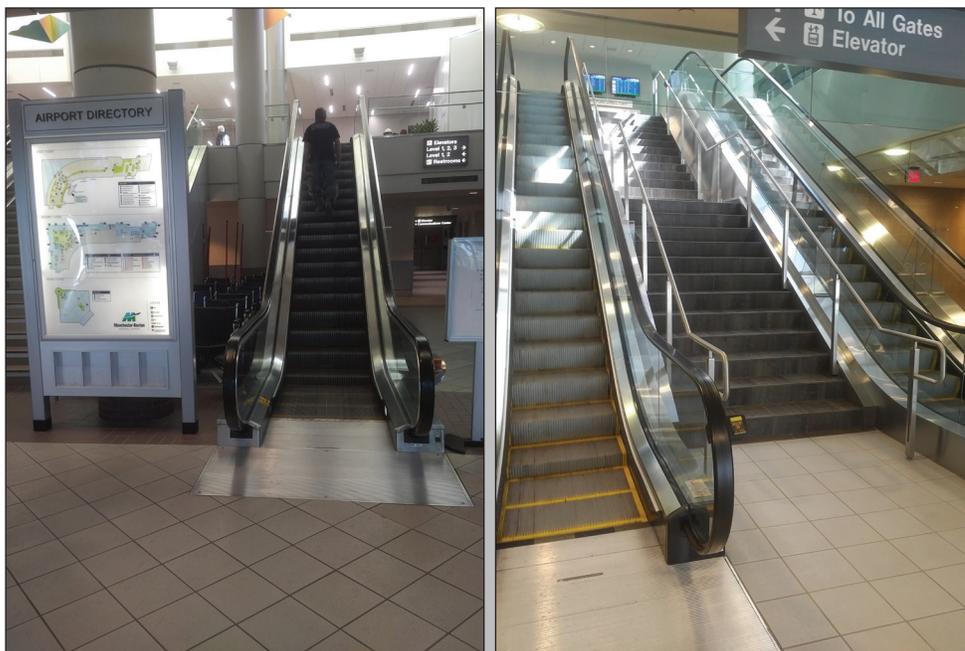
A spreadsheet-based financial tool accompanies the guidebook, enabling users to input their airports' particular requirements. The tool then provides a summary of each technology's potential energy savings and financial considerations to help determine which technologies are appropriate for the airport.



ACRP Report 117 notes that some states have yet to adopt the latest U.S. safety codes for energy saving technologies, such as those that would allow the use of escalators and moving walkways with variable-speed intermittent drives. The guidance recommends completion of a safety analysis and review of current codes prior to installing any of the technologies described in the report.

Carlton Braley is assistant airport director of operations and facilities at the Manchester-Boston Regional Airport (MHT). According to Braley, *ACRP Report 117* helped with the decision to install energy-saving variable demand/variable speed motors on the moving walkways and escalators at MHT.

“As a small hub airport we have just over two million passengers coming



Above: Escalators at the Manchester-Boston Regional Airport (MHT). *ACRP Report 117* helped inform the airport's decision to install variable speed / variable demand motors on its escalators to reduce energy use and operational costs. Photos courtesy of MHT.

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Airport Escalators and Moving Walkways—*continued*

in and out of our facility in a year,” noted Braley. “Within our building, we have nine escalators and four moving walkways. We installed new motors on them that operate at lower energy until there is a demand. The moving walkways and escalators run at the same speed but not as much torque is used until somebody steps on them, until it is required. So far we have had no issues with the new motors.”

MHT also used *ACRP Report 117* as a reference when deciding to install LED lighting and motion detection on moving walkways to reduce energy use. The report also provided MHT with information regarding best practices in the maintenance of escalators and moving walkways, such as cleaning escalator components regularly as well as lubricating components in order to reduce friction-related energy losses. Braley noted that these best practices had been in place at MHT prior to reading *ACRP Report 117*, but the report “drew attention to these practices so now we do it more often.”

Braley, who has worked at MHT for over 21 years, has used multiple ACRP reports to gather information on various operational, maintenance, and security topics. “I wish I could remember them all,” said Braley.

In addition to *ACRP Report 117*, for example, Braley has referenced *ACRP Report 67* to understand passenger flow as it relates to the locations of elevators and escalators. In his oversight of MHT’s snow removal and winter operations, Braley has relied on guidance in *ACRP Synthesis 12* to help prevent vehicle-aircraft incidents during winter and low-visibility weather. Braley also has studied *ACRP Report 1* on Safety Management Systems (SMS), which helps airports identify and address safety problems before aircraft accidents and incidents occur.

“I’ve referenced nearly every ACRP publication that deals with human factors, winter operations, and both

Manufacturers offer multiple energy saving technologies for escalators and moving walkways. This report and the accompanying financial tool provide a resource to help airport managers identify the right energy saving technology for a given airport and estimate the potential savings that would result from the installation of an energy saving technology.

— *ACRP Report 117: Airport Escalators and Moving Walkways—Cost-Savings and Energy Reduction Technologies*



Above: Moving walkways at Manchester-Boston Regional Airport (MHT). Staff at MHT referenced *ACRP Report 117* in the decision to install lower energy motors, LED lighting, and motion detection switches on moving walkways to reduce energy use at the airport. Photos courtesy of MHT.

of the SMS volumes,” Braley recalled. “There’s a ton of stuff, right down to shift scheduling. I have a couple of publications on my desk now. I’ll look for ACRP publications in the library if I’m having a unique issue.”

“We can reference information from the ACRP for justification for improvements related to new equipment, budget changes, or aiding and implementing a new regulation,” Braley added. “We don’t have to re-invent the wheel when we’re trying to solve a problem.”

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