

Problem Statement No.: 24-1026

Understanding Implications of Regional Curfews and Night Flight Bans on US Airport Operations

Recommended Allocation: \$350,000

Tags: Air Service, Environment, Noise, Operations, Terminal

Staff Comments: ACRP has undertaken extensive noise-related research; however, the topic of curfews and bans has not been extensively covered. The proposed budget appears low relative to other ACRP projects with similar levels of effort. Recommend \$350,000.

Average Airport Employee Review Rating (out of 5): 4.67

ACRP Oversight Committee (AOC) Disposition: This problem statement received an average rating of 2.55 on a scale of 1 to 5 among voting AOC members. There was no discussion. Not funded.

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Topic Areas

Air Service
Environment
Noise
Operations
Terminal

Background

In the US and around the world, the impacts of aircraft noise are a primary concern to communities in the vicinity of airports. The most sensitive times are at night, because of the potential for sleep disturbance.

There are a number of elements in noise mitigation strategies. The first is compatible land use planning directly under approach and departure runway flight paths to protect the airport operations and the community. A last resort is operational restrictions. This can be in the form of changes to flight paths, preferential runways with reduced capacity or imposition of scheduling restrictions, which in its most stringent form can be a night curfew (e.g. no air traffic operations between say 11pm and 6am).

In the US there are a limited number of airports that have curfews or similar operational restrictions on flights. However, curfews at airports outside of the US, for example in Europe, directly impact the times when flights can leave or arrive in the US. For example, London Heathrow Airport has night flight quotas imposed from 2330 to 0600. This means that flights from New York should not leave between about 1230 and 1900 to arrive in London outside of the quota period. Conversely flights from London are compressed into the following hours when landing into the New York area. Similarly, other European airports have night restrictions between 2300 and 0600, so flights from west coast airports can often not depart between about 1100 and 1900. Complications can arise if a tail wind makes a flight arrive too early in the morning, or a head wind causes a late night arrival.

Curfews at overseas originating or destination airports appear to be increasing in numbers and will exacerbate existing issues at US airports in the following ways:

- Cause peaks at US airports which in turn create congestion for airside, terminal and landside facilities or the requirement for inefficient investment of capital to meet peak demand
- Limit the choices of airlines and their travelers for convenient arrival or departure times between continents
- Flight time between intercontinental airports is very much influenced by en-route weather. Favorable winds may mean a flight arrives early than scheduled at a curfew airport and must circle until the runways are open. This is inefficient and inconvenient. On the other hand, a flight delayed by en-route weather may arrive at a curfewed airport after the runways close, requiring a diversion to a nearby non-curfewed airport. This causes multiple knock-on effects for passenger, crew and aircraft which must be

accommodated at the non-curfewed airport and arrangements made for the onward journey at great disruption, inconvenience and expense.

The new generation of aircraft capable of ultra-long haul non-stop travel between continents has the potential to provide more efficient travel for the public and opening up of new city-pairs. Strict curfews at origin or destination airports outside the US could scuttle some of these opportunities or benefits.

Further, some communities have proposed curfews as a means to address issues related to implementation Performance Based Navigation. While unlikely to be implemented in the US (because of constraints imposed by Part 161), nevertheless, it would be useful to have some analysis of implications.

Objective

Research is needed to help airports:

- Better define the extent of the problem;
- Better define the potential direct impacts of restricted scheduling windows;
- Identify unintended consequences at both originating and destination airports from restricted scheduling windows on intercontinental routes;
- Propose alternative noise mitigation strategies to achieve similar or better outcomes for communities in the vicinity of origin or destination airports, which maximizing flexible, efficient and effective scheduling for airlines to meet the needs of the traveling public;

Having this guidance will help airports develop strategies and implementation of transcontinental route development, while potentially providing more efficient use of facilities with depeaking and better noise outcomes.

Research Approach

The following tasks are proposed:

- Summarize existing and proposed international curfews;
- Evaluate impacts on airport operations, including congestion for airside, terminal and landside facilities or the requirement for inefficient investment of capital to meet peak demand;
- Evaluate environmental impacts, including noise (from re-scheduling to shoulder or night hours in US).

Cost Estimate and Backup

\$300,000.

Related Research

The Economic Impact of Night Flying in the UK¹ provided an overview of the need for night flights and anticipated economic consequences of night flight bans in the UK. Chapman² (2021) rebutted much of the assumptions of that work in a consultation submission in New Economic Foundation. No work has been done in the US to evaluate the impact of European restrictions on US operations.

Author

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Airport Employee Comments

I would rate this high in Applicability if the research is not limited to international airports, but also encompasses regional airports including GAs. This, because some smaller airports have closed/are under threat of closure, or loss of economic viability, due to imposed or proposed curfews and night flight bans. Research Approach is highly Achievable/Implementable/Understandable. Increased customer service and business for airports are the ultimate objectives.
Many regional airports are dependent as cargo and pax feeders and connectors for respective airline hubs. Any curfews will hurt them.

TRB Committee Comments

AV030	ENVIRONMENTAL ISSUES IN AVIATION (AV030): Because of the limited number of airports and related applicability, this problem statement might not be as widespread in its applicability, but it will be very useful so those airports with international flights. It is important to understand the implications of changing the noise curfew policies.
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