
Chapter 5

AIR CARGO OPERATING RESTRICTIONS

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With passage of air cargo deregulation in 1977, most of the controls governing the air side of domestic freight movements were lifted, including tariff controls, market entry restrictions, and limitations on the payload of aircraft flown by the express package delivery carriers.

Not until passage of the Motor Carrier Act of 1980, however, were air cargo carriers and forwarders allowed the unrestricted right to perform their own pickup and delivery services. In the past, they were only allowed to operate their trucks for collection and distribution within 35 miles of the airport. As a direct consequence of this restriction, air cargo carriers were forced to use air links in short hauls where trucks would have been more efficient. Air carrier-owned trucks are now allowed to operate anywhere, as long as the movement of goods on the ground is

incidental to their shipment by air. Several air carriers are already taking advantage of this new intermodal flexibility to provide the shipper single carrier integrated service.

Air cargo carriers continue to be adversely affected by airport curfews and other operating restrictions imposed by some airports in this country and by governments abroad. However, the only Federal regulations of major consequence still in place following air cargo deregulation concerned aircraft safety and noise standards, both promulgated by the Federal Aviation Administration (FAA). While regulation of aircraft safety is a widely accepted practice, aircraft noise standards have been far more controversial. As discussed below, these noise standards have led to major, costly changes in the air cargo fleet.

FEDERAL NOISE REGULATION

At the Federal level, the Environmental Protection Agency (EPA) is responsible for developing transportation noise programs. EPA recommends noise standards to the FAA, which can either adopt them or develop its own. In 1969, the FAA promulgated part 36 of the Federal Aviation Regulations (FAR 36), stating Federal aircraft noise regulations. These regulations originally set noise limits for newly designed civil turbojet aircraft over 75,000 lb which first went into production after 1969 (these included the DC-10, L 1011, B-747-200, and A-300, among others). In 1973, the FAA extended FAR 36 to include new production units of older aircraft such as the 707, 727, 737, DC-8, DC-9, and most business jets.

In December 1976, the FAA promulgated FAR 91 which required virtually the whole fleet of jets over 75,000 lb (including previously exempt aircraft) to meet FAR 36 noise standards by 1985. Airlines were given the option of retrofit-

ting their noncomplying aircraft with sound-absorbing materials, replacing the engines, or replacing the aircraft.

Amendments to FAR 36 in March 1977 and April 1978 require that the next generation of aircraft meet more stringent noise standards (stage 3 noise limits). These new standards are not presently retroactive to the types of aircraft already certificated.

Aircraft noise regulations are controversial, because the measurement of actual noise impacts is highly subjective and because the cost of compliance will be high. The airlines do not want to spend an estimated \$400 million to retrofit and reengine the 1,600 noncomplying aircraft now in service in order to meet the 1985 deadline. They would prefer to gradually replace these with new-technology aircraft that would not only be

"Airlines Face Huge Bills for Controlling Noise, Pollution," *Air Transport World*, July 1978, p. 16.

quieter, but would also be more fuel efficient and would comply with pollutant emissions standards. Because an airplane's operating lifetime is at least 10 to 15 years, and in some cases up to 30 years, most of the noncomplying aircraft would not be subject to normal replacement before the 1985 deadline. In fact, some observers estimate that if it *were* not for the provisions of FAR 36 standards, 60 percent of the present noncomplying fleet could still be in operation in 1990. The costs for accelerated replacement of these aircraft have been estimated as high as \$8 billion.²

There have been attempts in Congress to delay the existing compliance deadline and to

²Ibid.

prevent the FAA from imposing more stringent noise standards. These have been offset by a strong DOT stance favoring current noise rules. The final noise control bill,³ however, was a compromise. For example, it requires that all four-engine aircraft comply with FAA FAR 36, but it allows operations of noncomplying two-engine jets for an additional year if a contract for a stage 3 replacement has been signed by January 1, 1983. At least one major carrier has indicated it may discontinue its all-cargo service rather than undertake the expense of retrofitting its existing fleet or purchasing new aircraft.

³Aviation Safety and Aircraft Noise Abatement Act of 1979, Public Law 96-193.

AIRPORT OPERATING RESTRICTIONS

Airport operators, under the FAA's "Aviation Noise Abatement Policy,"⁴ have a responsibility to help manage noise through proper location and design of airports, cooperation with local authorities to insure that surrounding land is reserved for compatible uses, and construction of noise-reducing barriers.

In various locations, flight operation procedures have been modified to reduce noise. Some airports impose limits on ground operations, for example designating permissible areas and times for engine runups of jet planes. Another alternative is to require minimum altitudes or use of stepped approaches and steep climbouts. Another strategy is to prescribe preferred runways and approach paths which will minimize the impacts of noise on populated

areas, or rotational runway programs which disperse the noise equally over several populated areas,

A substantial number of airports throughout the world have imposed some kind of restrictions on airport operations in order to reduce noise. As can be seen in table 3, of the 140 respondents to a survey by the Airport Operators' Council International, 85 reported having some sort of noise abatement program.

Table 3.—Airport Operating Restrictions, 1979

| Type of airport | Total airports responding | Number with noise abatement programs |
|-----------------------------------|---------------------------|--------------------------------------|
| Large U.S. hubs | 24 | 15 |
| All other U.S. airports | 76 | 35 |
| Large foreign hubs | 40 | 35 |

SOURCE: *Report on Aircraft Noise Reduction Operating Procedures* (Washington, D. C.: Airport Operators Council International, 1979).

⁴"Aviation Noise Abatement Policy" (Washington, D. C.: U.S. Department of Transportation, Office of the Secretary, 1976).

NIGHT CURFEWS

The most drastic airport operating restriction is prohibiting the operation of jet aircraft during certain hours of the night. Although an aircraft is no noisier at night than it is during the day, the

noise is considered more annoying during these quiet hours. Thus, at first glance, a night curfew seems a logical way to greatly improve the noise environment around an airport. Only three U.S.

airports in the top 25 by air cargo tonnage have imposed curfews: Minneapolis/St. Paul (Number 18), Washington National (Number 21), and Baltimore-Washington International (Number 23). Internationally, 15 major airports have curfews.

The right of a U.S. community to curfew air operations has often been contested in the courts. Although some local ordinances controlling aircraft have been upheld, many have been declared unconstitutional because they posed a threat to interstate commerce and infringed on the Federal Government's ability to regulate the airways. Many of the existing curfews are, in fact, voluntary agreements between the airport authority and the carriers, arrived at in an effort to avoid litigation or bad publicity.

Night curfews actually disrupt only a small amount of an airport's total daily activity—from 5 to 10 percent of takeoffs and landings for most airports (Honolulu is exceptional in that 16 to 24 percent of its traffic is during late night hours).⁵ However, in the case of air cargo, night curfews are of particular concern because so much cargo is moved at night; the hours of 11 p.m. and 6 a.m. are often referred to as "prime-time lift." About 41 percent of San Francisco's all-cargo operations take place between 10 p.m. and 6 a.m.⁶ At JFK and Newark Airports in 1977, 35 percent of all freight moved between 10 p.m. and 7 a.m.; 94 percent of this was on all-cargo flights.⁷

Many shippers have come to depend on nighttime air cargo service for movement of high-value or perishable goods. Shippers tender goods to the forwarder or carrier toward the close of the business day so that they can be shipped at night and be available at their destination in time for the next day's market. From the shipper's point of view, the later the plane departs, the better. A study by the

Massachusetts Port Authority found that the later night flights were more economically successful than earlier ones. An experiment to induce shippers to use earlier flights by offering them lower rates was not successful.⁸

An airport curfew could result in delays of 12 to 36 hours for some of these perishable or high-value goods. Shipments arriving at the airport after curfew would be held overnight and sent off the next morning. In many cases they would arrive too late for that day's market and would remain in storage until the following morning. Such a delay would eliminate air express services almost totally, and severely cut the demand for air movements of produce, such as cut flowers, which are not refrigerated when sent by air. The U.S. Government is a major user of nighttime air cargo service with about 60 percent of inter-city mail planned for overnight delivery by air.⁹ A study for the Massachusetts Port Authority found that even with optimum rescheduling, 6 to 8 percent of the mail handled in Boston would be subject to delays if an 11 p.m. to 7 a.m. curfew were imposed.¹⁰

Curfews at a major airport could have a significant effect because of the highly concentrated nature of the air freight industry. Only 23 U.S. cities have daily scheduled freighter service (not counting express service), and of these, five major airports handled more than half of the total cargo tons.¹¹ Closing even one major airport at night would greatly affect the others. For example a 10 p.m. to 7 a.m. curfew in New York would impose an unintentional 2:30 p.m. to 10:30 p.m. curfew on takeoffs of New York-bound aircraft in Los Angeles. In international travel, because of the Hong Kong and Tokyo curfews, around the world flight beginning in New York takes 45 hours. A curfew added at one other stop—say Karachi or Delhi—adds 21 more hours to the trip.¹² Although the latter ex-

⁵Douglas A. Fisher, *An Analysis of Airport Curfews and Their Impact on Airline and Air Cargo Operations*, dissertation, Graduate School of Business, Indiana University, 1977, p. 1.

⁶Ibid.

⁷John E. Wesler, "Keynote Speech," in Raymond A. Ausrotas and Nawald K. Taneja (eds.), *Air Freight: The Problems of Airport Restrictions*, FTL report No. R79-1 (Cambridge, Mass: Flight Transportation Laboratory, Massachusetts Institute of Technology, 1979), p. 42.

⁸Fisher, op. cit., p. 113.

⁹U.S. Postal Service, Air Transportation Division, telephone interview, Jan. 14, 1980.

¹⁰Guy Goodman, *Potential Effects of Curfews on Scheduling and Delays*, SAE Technical Paper Series No. 780545 (Warrendale, Pa.: Society of Automotive Engineers, 1978), p. 6.

¹¹*Air Cargo Statistics, U.S. Scheduled Airlines, Total Industry, 1978* (Washington, D. C.: Air Transport Association, 1978), p. 2.

¹²Goodman, op. cit., p. 6.

ample is a passenger flight, the effect on cargo flights, which tend to originate or end at night, would be more severe.

Economic Impacts of Curfews

Night curfews can have adverse economic impacts on shippers, freight forwarders, airlines, the airport itself, and the local economy. Table 4 summarizes estimated impacts for 1975 when an 11 p.m. to 7 a.m. curfew was proposed for Boston's Logan Field. As can be seen in the table, shippers would pay up to an additional \$23 million annually due to increased transportation and warehousing costs.

The types of shippers most affected by the curfew would be those specializing in perishable or high-value goods. Some firms have centralized their manufacturing and warehousing facilities near a good airport and rely on air freight to make overnight delivery of their products to customers or branch offices throughout the country. Delays resulting from curfews would cause severe disruption in these distribution patterns, and might make it difficult for these firms to remain competitive with regional firms whose factories are located close to retail markets.

Freight forwarding companies, which account for over 40 percent of domestic air freight revenues, make extensive use of night flights. Emery Air Freight, the largest forwarder in the busi-

ness, moves almost two-thirds of its traffic between 11 p.m. and 3 a.m. Many consider overnight delivery to be a key selling point of air freight forwarder's service.³

Boeing has estimated that in a "typical" industrial city like Philadelphia, Cleveland, or Minneapolis-St. Paul about 17 percent of air freight is curfew sensitive and that 10 percent of curfew-sensitive cargo would be lost totally if a curfew were imposed; that is, the goods would not be manufactured because they could not be distributed at a reasonable price. Assuming traffic of 50,000 tons of air cargo per year at a value of \$10/lb, this could mean a total of \$17 million in goods might not be made or sold because of the curfew.¹⁴

The elimination of airport activity at night would result in a loss of jobs in the airlines, freight forwarders, and the various airport concessions. According to a study by Guy Goodman, an estimated 1,114 jobs would be lost in Boston as a direct result of curfew, as shown in table 4.

In addition to these direct effects, indirect costs and multiplier effects are anticipated. The Boeing study, using a regional multiplier of 1.8,

³Fisher, op. cit., p. 121.

¹⁴Raymond A. Ausrotas, and Nawal K. Taneja (eds.), *Air-Freight: The Problems of Airport Restrictions*, FTL report No. R79-1 (Cambridge, Mass: Flight Transportation Laboratory, Massachusetts Institute of Technology, 1979), pp. 32-35.

Table 4.—Annual Direct Effects on the New England Economy of an 11 p.m. to 7 a.m. Curfew at Boston, Mass.

| | With minimum rescheduling | With schedules reoptimized |
|---|------------------------------|-------------------------------|
| Shippers | | |
| Transportation, freight penalty (000) | \$20,100 | \$18,600 |
| Increased warehousing (000). | \$2,930 | \$2,620 |
| Transferred warehouse jobs | 440 | 280 |
| Airlines | | |
| Job loss | 468 | 244 |
| Payroll loss (000). | \$8,882 | \$4,687 |
| Freight forwarders | | |
| Job loss | 125 | 53 |
| Payroll loss (000). | \$1,584 | \$672 |
| Concessionaires | | |
| Job loss | | |
| Payroll loss (000). | \$589 | \$336 |
| Passengers | | |
| Increased fares (000) | \$1,966 | \$1,966 |

SOURCE Guy Goodman, *Potential Effects of Curfews on Scheduling and Delays*, Technical paper series no 78045 (Warrendale, Pa Society of Automotive Engineers. 1978), p 6

estimated that \$30.6 million worth of business would fail to be generated in the “typical” city because of a curfew.¹⁵ The Massachusetts study estimated that \$373 million in lost sales potential and 13,058 jobs would ultimately be lost in New England in the event of an 8-hour curfew.¹⁶

Benefits of Curfews

Little research has been done on the benefits of curfews for people living near airports. Studies of noise annoyance have found that interference with listening and speaking is the most annoying aspect of aircraft noise, while interference with sleep and rest is second. It is generally assumed that this annoyance would be greater at night when ambient noise levels are lower and aircraft noise is more noticeable.

On April 29, 1973, landing patterns at Los Angeles International Airport were reversed between 11 p.m. and 6 a.m. so that planes approached over Santa Monica Bay rather than over populated areas to the east. This procedure was followed for a year before further modifications were made. The change reduced noise exposure east of the airport by about 50 flights per night out of an average 657 landings per 24-hour day. Surveys were conducted in the high and moderate noise exposure zones immediately before, immediately after, and about one month after the change in operations.¹⁷ Before the change, 92 percent of the respondents in the high-exposure area reported some annoyance with aircraft noise: 90 percent of these said it interfered with listening to radio, TV, or hi-fi and 20 percent said it interfered with their sleep.

Although the objectively measured change in noise exposure seemed large—averaging around 50 dB(A) at night as compared to around 70 dB(A) before the change—little or no consistent change in response was found in the Los Angeles interviews. In the medium-exposure area, there were slight decreases in reported annoyance levels. In the high-exposure area, the number of persons claiming that aircraft noise interfered

with their sleep actually went up. The third round of interviews, conducted between a month and 6 weeks after the change, showed no significant changes compared with the first round. Overall, almost 56 percent of respondents replied they had not noticed a change in the number of flights; 20 percent noticed fewer; and 20 percent said they noticed more. Many of those who reported noticing fewer flights were aware of the new flight restrictions from newspapers or other sources.

The perceived benefit of reduced noise levels in this experiment was minimal. However, the temporary discontinuation of *all* nighttime flights at airports in Hong Kong and San Diego to permit runway resurfacing was so popular with the public that they were turned into permanent curfews when the airports attempted to resume around-the-clock operations after the work was completed.

The Federal Role

The FAA has the responsibility for regulating noise levels at their source—the aircraft themselves. The local authorities at a particular airport have the responsibility for controlling the noise levels at their airport.

The appropriate Federal role in the curfew issue is not clearly defined. On the one hand, the issue appears to be a local one—a conflict between local home owners and their airport. On the other hand, if local citizens are able to establish night curfews in one or more major air freight cities, they could essentially shut down night cargo flights and create a massive change in modal choices.

In 1977 the Air Transport Association of America (ATA) petitioned the FAA to adopt regulations governing airport noise abatement plans. Essentially, the ATA petition called on the FAA to utilize the provisions of the Federal Aviation Act of 1958, as amended, to disapprove local noise abatement rules related to air transportation, which were claimed to be:

1. inconsistent with the highest degree of safety in air commerce and air transportation;
2. inconsistent with the efficient utilization of navigable airspace;

¹⁵ Ibid.

¹⁶ Goodman, op. cit., p. 6.

¹⁷ All survey results reported in S. Fidell and G. Jones, “Effects of Cessation of Late-Night Flights on an Airport Community,” *Journal of Sound and Vibration* vol 42, 1975, pp. 411-427.

3. unduly burdensome to interstate or foreign commerce or unduly interfering with the national transportation system;
4. unjustly discriminatory. For example, a ban on jet aircraft only would be discriminatory, since some jets are quieter than some propeller aircraft; and
5. in conflict with the Federal Aviation Administration's statutory regulatory authority.¹⁸

The FAA has not taken the actions suggested by ATA, but it has challenged proposed airport plans through advisory opinions and statements in local public hearings. The FAA contends that the field of airport noise abatement has not been totally preempted, and that the Federal Government shares responsibility to some degree with State and local authorities. How these various responsibilities will be sorted out is still unresolved.

Operating Restrictions Overseas

The airport curfew is only one of several types of operating restrictions imposed on U.S. car-

¹⁸Clifton F. Von Kann, "Keynote Speech," in Ausrotas and Taneja, *Air Flight: The Problems*, p. 52.

riers by foreign governments. Some of the restrictions are regarded by U.S. carriers as clear-cut attempts by foreign countries to inhibit competition with their own national airlines. For example, U.S. carriers report that one European country, which owned no 747 freighters, refused landing rights to foreign 747 freighters until an arrangement was worked out to lease them a 747 for part of the week. Another European nation insisted that an airline could only provide pickup and delivery service in towns where it also offered passenger service. Since the local carrier served many more cities than the U.S. carrier, competition for cargo business was decidedly one-sided. In this particular instance, the problem was overcome with U.S. Government assistance. In another example, one Asian country requires elaborate cargo clearance procedures for foreign carriers only that are both costly and time-consuming. In another instance, the national carrier is allotted prime terminal space and is the only carrier allowed full control of its freight from terminal to warehouse. These constraints seriously jeopardize the economic viability of U.S. carriers in international service. Continuing U.S. Government efforts appear needed in order to address such restrictions.