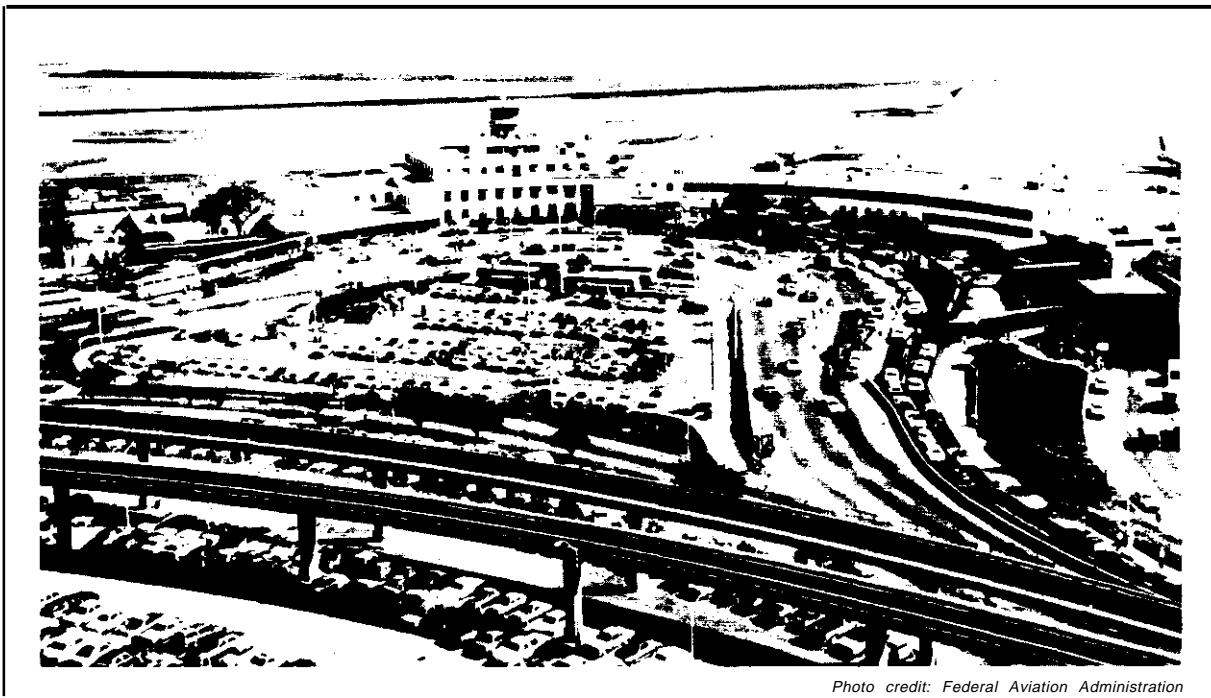


Chapter 6

# AIRPORT FINANCIAL MANAGEMENT AND PRICING



*Photo credit: Federal Aviation Administration*

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# AIRPORT FINANCIAL MANAGEMENT AND PRICING<sup>1</sup>

Unlike airports in other countries, many of which are owned and run by national governments, U.S. commercial airports are typically owned and managed by local governments or other non-Federal public authorities. Although the management approach varies, major U.S. commercial airports function as mature enterprises, applying up-to-date techniques of financial management and administration. These publicly owned and managed facilities are operated in conjunction with private industry—the commercial airlines, which are the airports’ link to their patrons. This peculiar public-private character distinguishes the financial operation of commercial airports from that of wholly public or private enterprises,

distinctly shaping airport management practices, the pricing of facilities and services, and the investment planning process.

On the basis of a survey conducted by the Congressional Budget Office (CBO) in **1983** (app. B), this chapter develops a profile of financial policies and practices now followed at 60 of the Nation’s larger commercial airports and assesses trends in airport financial management since Federal deregulation of the airline industry in 1978. Brief attention is also given to management and financing practices of smaller airports, including publicly owned general aviation (GA) airports.

## APPROACHES TO FINANCIAL MANAGEMENT

At most commercial airports, the financial and operational relationship between the airport operator and the airlines is defined in legally binding agreements that specify how the risks and responsibilities of running the airport are to be shared. These contracts, commonly termed “airport use agreements,” establish the terms and conditions governing the airlines’ *use* of the airport.<sup>2</sup> They also specify the methods for calculating rates airlines must pay for use of airport facilities and services; and they identify the airlines’ rights and privileges, sometimes including the right to approve or disapprove any major proposed airport capital development projects.

Although financial management practices differ greatly among commercial airports, the air-

port-airline relationship at major airports typically takes one of two very different forms, with important implications for airport pricing and investment:

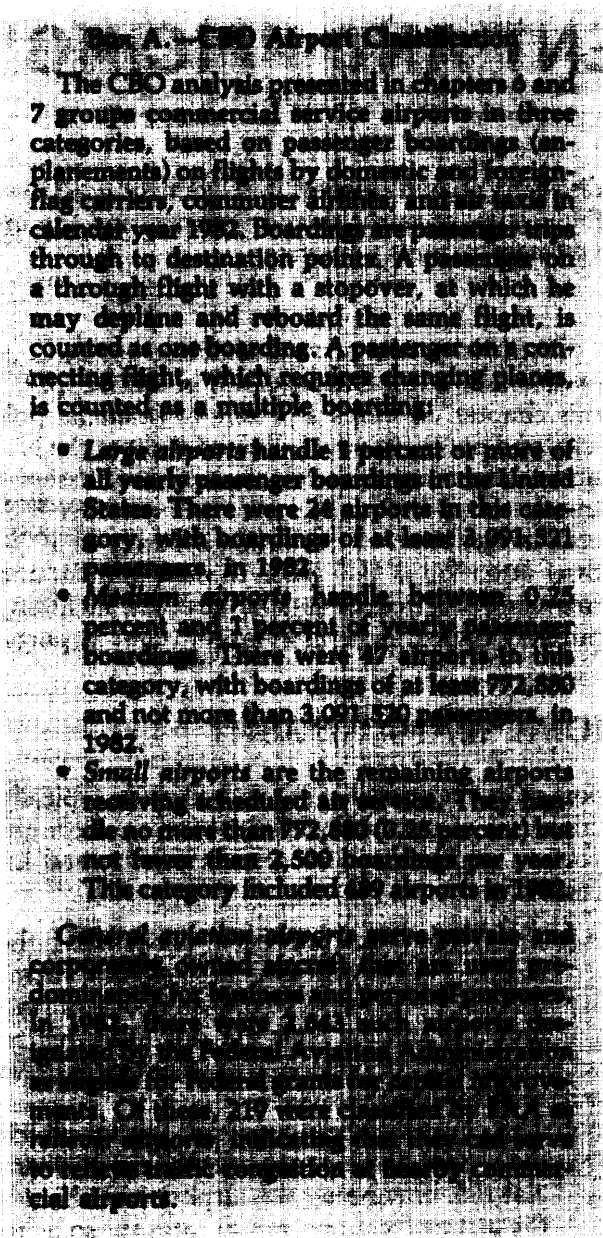
- The ***residual-cost approach***, under which the airlines collectively assume significant financial risk by agreeing to pay any costs of running the airport that are not allocated to other users or covered by nonairline sources of revenue.
- The ***compensatory approach***, under which the airport operator assumes the major financial risk of running the airport and charges the airlines fees and rental rates set so as to recover the actual costs of the facilities and services that they use.

### The Residual-Cost Approach

A majority of the Nation’s major commercial airports surveyed by CBO—14 out of **24** large airports and **21** of **36** medium airports—have some form of residual-cost approach to financial management (see box A and table **18**). Under this approach, the airlines collectively assume significant

<sup>1</sup>This chapter was prepared by the Congressional Budget Office and appears in unabridged form in *Financing U.S. Airports in the 1980s*, April 1984. The version here has been condensed and edited to conform to the OTA report format.

<sup>2</sup>“Airport use agreement” is used generically hereto include both legal contracts for the airlines’ use of airfield facilities and leases for use of terminal facilities. At many airports, both are combined in a single document. A few commercial airports do not negotiate airport use agreements with the airlines, but instead charge rates and fees set by local ordinance.



**Table 18.—Financial Management of Commercial Airports, 1983**

| Approach                             | Large     |            | Medium    |            |
|--------------------------------------|-----------|------------|-----------|------------|
|                                      | Number    | Percent    | Number    | Percent    |
| Residual cost <sup>a</sup> . . . . . | 14        | 58         | 21        | 58         |
| Compensatory <sup>b</sup> . . . . .  | 10        | 42         | 15        | 42         |
| <b>Total</b> . . . . .               | <b>24</b> | <b>100</b> | <b>36</b> | <b>100</b> |

Note: Data include all large airports and 77 percent of medium commercial airports. Data for small airports were not available.

<sup>a</sup>Includes one airport using a noncompensatory approach but which does not calculate airline fees and charges on a residual-cost basis.

<sup>b</sup>Includes airports that use a "cost of services" approach, which is sometimes classified as a third approach because of differences in the way airport terminal rental rates are calculated.

SOURCE: Congressional Budget Office, 1983 Survey.

illustrate the basic approach (see table 19). Most airports have a number of different cost centers, such as terminal buildings, the airfield, roads and grounds, and the air freight area. At a residual-cost airport, the total annual costs—including administration, maintenance, operations, and debt service (including coverage)—could be calculated for each cost center, and offset by all nonairline revenues anticipated for that center.<sup>3</sup> The residual between costs and revenues would then provide the basis for calculating the rates charged the airlines for their use of facilities within the cost center. Any surplus revenues would be credited to the airlines and any deficit charged to them in calculating airline landing fees or other rates for the following year.<sup>4</sup>

### The Compensatory Approach

Under a compensatory approach, the airport operator assumes the financial risk of airport operation, and airlines pay rates and charges equal to the costs of the facilities they use as determined by cost accounting. In contrast to the situation at residual-cost airports, the airlines at a compensatory airport provide no guarantee that fees and

financial risk. They agree to keep the airport financially self-sustaining by making up any deficit—the residual cost—remaining after the costs identified for all airport users have been offset by nonairline sources of revenue (automobile parking and terminal concessions such as restaurants, newsstands, snack bars, and the like).

Although applications of the residual-cost approach vary widely, a simplified example can il-

<sup>3</sup>Debt service coverage is the requirement that the airport's revenues, net of operating and maintenance expenses, be equal to a specified percentage in excess of the annual debt service (principal and interest payments) for revenue bond issues. The coverage required is generally from 1.25 to 1.40 times debt service, thereby providing a substantial cushion that enhances the security of the bonds. This is discussed further in ch. 7.

<sup>4</sup>Harold B. Kluckhohn, "Security for Tax-Exempt Airport Revenue Bonds," summary of remarks presented at the New York *Law Journal* Seminar on Tax-exempt Financing for Airports, 1980.

rents will suffice to allow the airport to meet its annual operating and debt service requirements. A compensatory approach is currently in use at 10 of the 24 large commercial airports and 15 of the 36 medium airports surveyed by CBO.

Although individual airports have adopted many versions of the compensatory approach, the simplified example set out in table 19 illustrates the basics. First, for each cost center a calculation would be made of the total annual expense of running the center, including administration, maintenance, operations, and debt service (with coverage). The airlines' shares of these costs would then be based on the extent of their actual use of facilities within each cost center. The airlines would not be charged for the costs of public space, such as terminal lobbies. Nor would they receive any credit for nonairline revenues, which offset expenses in the residual-cost approach but are disregarded under a compensatory approach in calculating rates and charges to the airlines.

### Comparison of Residual-Cost and Compensatory Approaches

These two major approaches to financial management of major commercial airports have sig-

nificantly different implications for pricing and investment practices. In particular, they help determine:

- an airport's potential for accumulating *retained earnings* usable for capital development;
- the nature and extent of the airlines' role in making airport capital investment decisions, which may be formally defined in *majority-in-interest* clauses included in airport use agreements with the airlines; and
- the length of *term* of the use agreement between the airlines and the airport operator.

These differences, examined below, can have an important bearing on an airport's performance in the municipal bond market, as will be discussed in chapter 7.

### Retention of Earnings

Although large and medium commercial airports generally must rely on the issuance of debt to finance major capital development projects, the availability of substantial revenues generated in excess of costs can strengthen the performance of an airport in the municipal bond market. It can also provide an alternative to issuing debt for the

**Table 19.—Comparison of Residual-Cost and Compensatory Methods of Calculating Airport Fees<sup>a</sup>**

| Requirement  | Residual cost         |                                | Compensatory          |                                |
|--|-----------------------|--------------------------------|-----------------------|--------------------------------|
|  | Terminal              | Airfield                       | Terminal              | Airfield                       |
| Maintenance, operations, and administration . . . . .          | \$ 40,000             | \$ 40,000                      | \$ 40,000             | \$ 40,000                      |
| Debt service . . . . .   | 40,000                | 20,000                         | 40,000                | 20,000                         |
| Debt service coverage . . . . .                                | 10,000                | 5,000                          | 10,000                | 5,000                          |
| Deposits to special funds . . . . .                            | 5,000                 | 20,000                         | 5,000                 | 20,000                         |
| Other . . . . .  | 5,000                 | 15,000                         | 5,000                 | 15,000                         |
| <b>Total requirement . . . . .</b>                             | <b>\$ 100,000</b>     | <b>\$ 100,000</b>              | <b>\$100,000</b>      | <b>\$100,000</b>               |
| Cost center revenue from nonairline sources . . . . .          | -\$50,000             | -\$50,000                      | NA <sup>b</sup>       | NA                             |
| Airline share (percent) . . . . .                              | NA                    | NA                             | 65                    | 75                             |
| <b>Residual cost . . . . .</b>                                 | <b>\$ 50,000</b>      | <b>\$ 50,000</b>               | <b>NA</b>             | <b>NA</b>                      |
| Activity level . . . . .                                       | 6,500 ft <sup>2</sup> | 100,000lb gross landing weight | 6,500 ft <sup>2</sup> | 100,000lb gross landing weight |
| Rental rate (per square foot) . . . . .                        | \$ 7.69               | NA                             | \$10.00               | NA                             |
| Landing fee rate (per 1,000 lb gross landing weight) . . . . . | NA                    | \$ 0.50                        | NA                    | \$ 0.75                        |

<sup>a</sup>This is not a comparison of actual rate calculations but a simplified illustration. Rates are not necessarily higher under either approach but differ according to the volume of traffic, amount of debt, and other factors.

<sup>b</sup>NA = Not applicable.

SOURCE: Congressional Budget Office, adapted from Kluckhohn, "Security for Tax-Exempt Airport Revenue Bonds."

financing of some portion of capital development. Residual-cost financing guarantees that an airport will always break even—thereby assuring service without resort to supplemental local tax support—but it precludes the airport from generating earnings substantially in excess of costs.<sup>5</sup>

By contrast, an airport using a compensatory approach lacks the built-in security afforded by the airlines' guarantee that the airport will break even every year. The public operator undertakes the risk that revenues generated by airport fees and charges may not be adequate to allow the airport to meet its annual operating costs and debt service obligations. On the other hand, because total revenues are not constrained to the amount needed to break even, and because surplus revenues are not used to reduce airline rates and charges, compensatory airports may earn and retain a substantial surplus, which can later be used for capital development. Since the pricing of airport concessions and consumer services need not be limited to the recovery of actual costs, the extent of such retained earnings generally depends on the magnitude of the airport's nonairline revenues.<sup>b</sup>

Because the residual-cost approach is not designed to yield substantial revenues in excess of

costs, residual-cost airports, as a group, tend to retain considerably smaller percentages of their gross revenues than do compensatory airports. A few residual-cost airports, however, have modified the approach to permit accumulation of sizable retained earnings for use in capital projects. At Miami and Reno International Airports, for example, certain airport-generated revenues are excluded from the revenue base used in calculating the residual cost payable by the airlines; the revenues flow instead into a discretionary fund that can finance capital development projects.

### Majority-in-interest

In exchange for the guarantee of solvency, airlines that are signatory to a residual-cost use agreement often exercise a significant measure of control over airport investment decisions and related pricing policy. These powers are embodied in so-called majority-in-interest clauses, which are a much more common feature of airport use agreements at residual-cost airports than at airports using a compensatory approach (see table 20). At present, more than three-quarters of the large commercial airports using a residual cost approach have some form of majority-in-interest clause in their use agreements with the airlines, and two-thirds of the medium residual-cost airports have such clauses. Of the airports surveyed, only one-tenth of the large and one-third of medium commercial airports that use a compensatory approach to financial management have majority-in-interest clauses in their use agreements.

<sup>a</sup>Peat, Marwick, Mitchell & Co., "Comparative Rate Analysis: Dade County Aviation and Seaport Departments," August 1982, p. 3.

<sup>b</sup>Market pricing of concessions and other nonairline sources of revenue is a feature of both residual-cost and compensatory airports.

**Table 20.—Role of Airlines in Approving Capital Projects at Commercial Airports, 1983<sup>a</sup>**

| Airline role   | Large  |         | Medium |         |
|--|--------|---------|--------|---------|
|  | Number | Percent | Number | Percent |
| <b>Residual cost</b>                                   |        |         |        |         |
| Majority-in-Interest clause . . . . .                  | 11     | 79      | 14     | 67      |
| No formal requirement of<br>airline approval . . . . . | 3      | 21      | 7      | 33      |
| Total . . . . .  | 14     | 100     | 21     | 100     |
| <b>Compensatory</b>                                    |        |         |        |         |
| Majority-in-Interest clause . . . . .                  | 1      | 10      | 5      | 33      |
| No formal requirement of<br>airline approval . . . . . | 9      | 90      | 10     | 67      |
| Total . . . . .  | 10     | 100     | 15     | 100     |
| Grand total . . . . .                                  | 24     | —       | 36     | —       |

<sup>a</sup>Data include all large commercial airports and 77 percent of medium airports. Data for small airports were not available.  
SOURCE: Congressional Budget Office, 1983 Survey.

Majority-in-interest clauses give the airlines accounting for a majority of traffic at an airport the opportunity to review and approve or veto capital projects that would entail significant increases in the rates and fees they pay for the use of airport facilities.<sup>7</sup> This arrangement provides protection for the airlines that have assumed financial risk under a residual-cost agreement by guaranteeing payment of all airport costs not covered by nonairline sources of revenue. For instance, without some form of majority-in-interest clause, the airlines at a residual-cost airport could be obligating themselves to pay the costs of as-yet-undefined facilities that might be proposed in the 15th or 20th year of a 30-year use agreement. Under a compensatory approach, where the airport operator assumes the major financial risk of running the facility, the operator is generally freer to undertake capital development projects without consent of the airlines that account for a majority of the traffic. Even so, airport operators rarely embark on major projects without consulting the airlines that serve the airport. Potential investors in airport revenue bonds would be wary of a bond issue for a project lacking the airlines' approval.

Specific provisions of majority-in-interest clauses vary considerably. At some airports, the airlines that account for a majority of traffic can approve or disapprove all major capital development projects—e.g., any project costing more than \$100,000. At others, projects can only be deferred for a certain period of time (generally 6 months to 2 years). Although most airports have at least a small discretionary fund for capital improvements that is not subject to majority-in-interest approval, the general effect of majority-in-interest provisions is to limit the ability of the public airport owner to proceed with any major project opposed by the airlines. Sometimes, a group of just two or three major carriers can exercise such control.

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<sup>7</sup>The combination of airlines that can exercise majority-in-interest powers varies. A typical formulation would give majority-in-interest powers to a combination of "more than so percent of the scheduled airlines that landed more than 50 percent of the aggregate revenue aircraft weight during the preceding fiscal year" (standard document wording).

## Term of Use Agreement

At the airports examined in the CBO study, residual-cost airports typically have longer term use agreements than do compensatory airports. This is because residual-cost agreements historically have been drawn up to provide security for long-term airport revenue bond issues; and the term of the use agreement, with its airline guarantee of debt service, has generally coincided with the term of the revenue bonds. More than 90 percent of the large and 75 percent of the medium residual-cost airports surveyed by CBO have use agreements with terms of 20 or more years (see table 21). Terms of 30 years or longer are not uncommon.

By contrast, about 60 percent of the large and 40 percent of the medium compensatory airports surveyed have use agreements running for 20 years *or more*. Four of the compensatory airports surveyed have no contractual agreements whatever with the airlines. At these airports, rates and charges are established by local ordinance or resolution. This arrangement gives airport operators maximum flexibility to adjust their pricing and investment practices unilaterally, without the constraints imposed by a formal agreement negotiated with the airlines, but it lacks the security provided by contractual agreements.

## Pricing of Airport Facilities and Services

Major commercial airports are diversified enterprises that provide a wide range of facilities and services for which fees, rents, or other user charges are assessed. Most commercial airports, regardless of size, type, or locale, offer four major types of facilities and services:

- **airfield facilities**, made up of runways, taxiways, aprons, and parking ramps for use by commercial and general aviation;
- **terminal area facilities and services** provided to concessionaires and consumers, including auto parking and ground transportation, restaurants and snack bars, specialty stores (e.g., newsstands and duty-free shops), car rental companies, passenger convenience facilities (e.g., porter service, restrooms, telephones, and vending machines), personal

Table 21.—Term of Airport Use Agreements at Commercial Airports, 1983

| Length of term                    | Large           |         | Medium          |         |
|-----------------------------------|-----------------|---------|-----------------|---------|
|                                   | Number          | Percent | Number          | Percent |
| <b>Residual cost</b>              |                 |         |                 |         |
| 20 years or more . . . . .        | 13              | 93      | 16              | 76      |
| 11-19 years . . . . .             | 0               | 0       | 2               | 10      |
| 6-10 years . . . . .              | 0               | 0       |                 | 5       |
| 5 years or less . . . . .         | 1               | 7       | :               | 0       |
| Negotiations in process . . . . . | 0               | 0       | 2               | 10      |
| Total . . . . .                   | 14              | 100     | 21              | 100     |
| compensatory                      |                 |         |                 |         |
| 20 years or more . . . . .        | 6               | 60      | 6               | 40      |
| 11-19 years . . . . .             | 0               | 0       | 2               | 13      |
| 6-10 years . . . . .              | 1               | 10      | 2               | 13      |
| 5 years or less . . . . .         | 0               | 0       | 3               | 20      |
| No use agreements . . . . .       | 3               | 30      | 1               | 7       |
| Negotiations in process . . . . . | 0               | 0       | 1               | 7       |
| Total . . . . .                   | 10              | 100     | 15              | 100     |
| Grand total . . . . .             | 24 <sup>a</sup> | —       | 36 <sup>b</sup> | —       |

<sup>a</sup>All large commercial airports.<sup>b</sup>77 percent of medium commercial airports.

SOURCE: Congressional Budget Office, 1983 Survey.

services (e.g., barbershops and valet services), game rooms and amusement facilities, office space, and hotels;

- *airline leased areas* in the terminal and elsewhere, including ticket counters, gate space, passenger waiting rooms, baggage handling areas, office space, operations and maintenance areas, hangars, cargo terminals and aprons, ground rentals;<sup>8</sup> and
- *other airport facilities* leased to nonairline tenants and related services, including cargo terminals, ground rentals, fixed base operations,<sup>9</sup> industrial areas, fuel and servicing of aircraft, agricultural land, warehouses, and other buildings and grounds.

At major commercial airports, the facilities and services provided to users generate the revenues necessary to operate the airport and to support the financing of capital development. Smaller commercial airports and GA airports typically offer a much narrower range of facilities and services, for which only minimal fees and charges often are assessed. Revenue bases shrink as air-

ports decrease in size, and many of the smallest do not generate sufficient revenue to cover their operating costs, much less capital investment. Among GA airports, those that lease land or facilities for industrial use generally have a better chance of covering their costs of operation than do those providing only aviation-related services and facilities.<sup>1</sup>

The combination of public management and private enterprise uniquely characteristic of the financial operation of commercial airports is reflected in the divergent pricing of airport facilities and services. The private enterprise aspects of airport operation—the services and facilities furnished for nonaeronautical use—generally are priced on a market pricing basis. On the other hand, the pricing of facilities and services for airlines and other aeronautical users is on a cost-recovery basis, either recovery of the actual costs of the facilities and services provided (the compensatory approach) or recovery of the residual costs of airport operation not covered by nonairline sources of revenue. This mix of market pric-

<sup>8</sup>Ground rentals are leases of land in which the lessee pays the cost of constructing any facilities, such as terminals, upon it.

<sup>9</sup>Fixed base operators are private concerns that lease aircraft and offer aviation services, such as fuel sale, flight instruction, and aircraft maintenance.

<sup>1</sup>See Joel Crenshaw and Edmund Dickinson, "Investment Needs and Self-Financing Capabilities: U.S. Airports, Fiscal Years 1981-1990," report prepared for the U.S. Department of Transportation, July 1978, pp. 12, 45; and Laurence E. Gesell, *The Administration of Public Airports*, Coast Aire Publications, 1981, pp. VI 6-13.



ing and cost-recovery pricing has important implications for airport financing, especially with regard to the structure and control of airport charges and the distribution of operating revenues,

### Structure and Control of Airport Charges

At major commercial airports, the structure and control of fees, rents, and other charges for facilities and services are governed largely by a variety of long- and short-term contracts, including airport use agreements with the airlines, leases, and concession and management contracts. For each of the four major groups of facilities and services outlined above, the basic kinds of charges assessed at residual-cost and compensatory airports can be compared in terms of:

- method of calculation,
- term of agreement, and
- frequency of adjustment.

#### Airfield Area

The major fees assessed for use of airfield facilities are landing or flight fees for commercial airlines and GA aircraft. Some airports also levy other airfield fees such as charges for the use of aircraft parking ramps or aprons. In lieu of landing fees, many smaller airports, especially GA airports, collect fuel “flowage” fees, which are levied per gallon of aviation gasoline and jet fuel sold at the airport.

At residual-cost airports, the landing fee for airlines is typically the item that balances the budget, making up the projected difference between all other anticipated revenues and the total annual costs of administration, operations and maintenance, and debt service (including coverage). Landing fees differ widely among residual-cost airports, depending on the extent of the revenues derived from airline terminal rentals and concessions such as restaurants, car rental companies, and automobile parking lots. If the nonairline revenues are high in a given year, the landing fee for the airlines may be quite low. In recent years, several airports—including Los Angeles and Honolulu International—have approached a “negative” landing fee. At some residual-cost airports,

the landing fee is the budget-balancing item for the airfield cost center only. At such airports, the surplus or deficit in the terminal cost center has no influence on airline landing fees, and terminal rental rates for the airlines may be set on a residual-cost or a compensatory basis.

The method of calculating landing fees at residual-cost airports is established in the airport use agreement and continues for the full term of the agreement. To reflect changes in operating costs or revenues, landing fees are typically adjusted at specified intervals ranging from 6 months to 3 years. At some airports, fees maybe adjusted more often if revenues are significantly lower or higher than anticipated. Often, the nonsignatory airlines (those not party to the basic use agreement) pay higher landing fees than the signatory carriers. General aviation landing fees vary greatly from airport to airport, ranging from charges equal to those paid by the commercial airlines to none at all. Most landing fees are assessed on the basis of certificated gross landing weight.”

At compensatory airports, airline landing fees are based on calculation of the average actual costs of airfield facilities used by the airlines (see table 22). As in the case of residual-cost airports, each airline’s share of these costs is based on its share of total projected airline *gross* landing weights (or, in a few cases, gross takeoff weight). In addition to fees determined by this weight-based measure, three compensatory airports—Boston Logan International and John F. Kennedy and La Guardia airports in New York—assess a surcharge on GA aircraft during hours of peak demand. At present, however, no major airports

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“This practice of basing landing fees on aircraft weight tends to promote use of commercial airports by general aviation. Since most GA aircraft are relatively light (under 10,000 lb), they pay very low landing fees at most commercial airports—typically \$10 or less. The smallest GA aircraft (under 2,500 lb) often pay no fee. Among the airports surveyed by CBO there is no clear indication that landing fees for GA differ systematically as a function of pricing policy. Residual-cost and compensatory airports alike have landing fees for GA that are so small as to be a negligible, either as a source of revenue to the airport or as a deterrent to use of congested facilities.

Table 22.—Profile of Landing Fees at Four Major Airports, 1982

| Airline landing fee  |  | Fee <sup>a</sup>    | General aviation landing fee   |
|--|--|---------------------|--|
| Basis of fee   | Method of calculation  |                     |  |
| <b>Boston Logan International</b><br>Compensatory; based on recovery of all costs of providing and operating "public aircraft facilities" <sup>b</sup>                     | Fee = public aircraft facilities costs divided by total projected scheduled airline landing weights; adjusted annually | \$1.24              | \$1.24 per 1,000 lb of maximum gross landing weight, subject to \$50 minimum during peak periods and \$20 in offpeak periods                                     |
| <b>Denver Stapleton International</b><br>Compensatory; based on recovery of maintenance, operations, and debt service costs for airfield area                              | Fee = airfield cost center expenses divided by total projected airline landing weights; adjusted annually              | \$0.34              | \$0.34 per 1,000 lb of maximum gross landing weight, subject to \$3 minimum with fuel flowage fees credited against minimum                                      |
| <b>Los Angeles International</b><br>Residual cost; based on recovery of all costs (maintenance, operations, and debt service), net of all revenues other than landing fees | Fee = residual cost divided by estimated total landing weights of all airlines; adjusted semiannually                  | \$0.75 <sup>c</sup> | \$0.80 per 1,000 lb of maximum gross landing weight, subject to \$10 minimum for aircraft under 12,500 lb and \$15 minimum for aircraft from 12,500 to 25,000 lb |
| <b>New Orleans International</b><br>Residual cost; based on recovery of all costs (maintenance, operations, and debt service), net of all revenues other than landing fees | Fee = residual cost divided by estimated total landing weights of all airlines; adjusted every 3 years                 | \$0.23              | \$0.40 per 1,000 lb of maximum gross landing weight  |

<sup>a</sup>Fee per 1,000 lb of maximum gross landing weight. A typical commercial jet airliner (727-200) weighs about 200,000 lb; a typical general aviation jet (Lear 25D) weighs 15,000 lb.

<sup>b</sup>Defined as including the capital costs of public aircraft facilities; cost of equipment; replenishment of Maintenance Reserve Fund; administration, operations, and maintenance costs; and allocated portions of payments in lieu of taxes.

<sup>c</sup>\$0.80 for nonsignatory carriers.

SOURCE: Congressional Budget Office, updated and adapted from Peat, Marwick, Mitchell & Co., *Comparative Rate Analysis: Dade County Aviation and Seaport Departments*, August 1982.

impose such peak-hour surcharges on commercial airlines to help ease congestion problems.<sup>12</sup>

Landing fees at compensatory airports are established either in airport use agreements with the airlines or by local ordinance or resolution. The frequency of adjustment of the fees is comparable to that at residual-cost airports.

### Terminal Area

The structure of terminal concession and service contract fees is similar under both pricing approaches. Concession contracts typically provide the airport operator with a guaranteed annual minimum payment or a specified percentage of

the concessionaire's gross revenues, whichever is greater. Restaurants, snack bars, gift shops, newsstands, duty-free shops, hotels, and rental car operations usually have contracts of this type. Terminal concession contracts are often bid competitively, and they range in term from month-to-month agreements to contracts of 10 to 15 years' duration. (Hotel agreements generally have much longer terms, often running for 40 years or more.) Airport parking facilities may be operated as concessions; they may be run by the airport directly; or they may be managed by a contractor for either a flat fee or a percentage of revenues.

### Airline Leased Areas

At both residual-cost and compensatory airports, airlines pay rent to the airport operator for the right to occupy various facilities (terminal space, hangars, cargo terminals, and land). Rental rates are established in the airport use agreements, in separate leases, or by local ordinance or resolution. Terminal space may be assigned on an exclusive-use basis (to a single airline), a preferential-

<sup>12</sup>Peak-hour surcharges could reduce congestion by giving airlines and other providers of air transportation services the opportunity to save money (and offer lower fares) by flying during uncongested periods. If peak-period demand continued to cause congestion, the increased revenue generated by the surcharges could help finance the expansion necessary to accommodate peak-hour traffic. See Congressional Budget Office, *Public Works Infrastructure*, April 1983, ch. VII, and *Charging for Federal Services*, ch. V. See also ch. 5 of this report.

use basis (if a certain level of activity is not maintained, the airline must share the space), or on a joint-use basis (space used in common by several airlines). Most major commercial airports use a combination of these methods. In addition, airports may charge the airlines a fee for use of any airport-controlled gate space and for the provision of Federal inspection facilities required at airports serving international traffic. Some airports have long-term ground leases with individual airlines that allow the airlines to finance and construct their own passenger terminal facilities on land leased from the airport.

Among residual-cost airports, the method of calculating airline terminal rental rates varies considerably. If airline fees and charges are calculated on a residual-cost basis within each cost center, the method of calculating rental rates resembles that of the simplified example shown in table 19. To arrive at the airline fee, total nonairline revenues generated within the terminal cost center are subtracted from the total costs of the center (administration, operations and maintenance, and debt service). Each airline's share is based on the square footage it occupies, with proration of jointly used space.

On the other hand, at residual-cost airports where receipts from airline landing fees alone are used to balance the airport budget, the terminal rental rates for the airlines may be set in various ways—on a compensatory basis (recovering the average actual costs of the facilities used), by an outside appraisal of the property value, or by negotiation with the airlines. In all cases, each airline's share of costs is based on its proportionate use of the facilities. Rental rates may be uniform for all types of space leased to the airlines, or they may differ according to the type of space provided—for example, they may be significantly higher for leases of ticket counters or office space than for rental of gate or baggage claim areas.

At residual-cost airports, the rental term for airline leased areas generally coincides with the term of the airport use agreement with the airlines. The frequency of adjustment of terminal rental rates ranges considerably—annually at many airports, but up to 3 to 5 years at others.

At compensatory airports, the method of calculating terminal rental rates for the airlines is based on recovery of the average actual costs of the space occupied. Each airline's share of the total costs is based on the square footage leased. Typically, rates differ according to the type of space and whether it is leased on an exclusive, preferential, or joint-use basis. The rental term for airline leased areas often coincides with that of the airport use agreement. (It is set by ordinance at airports that operate without agreements.) Rates are typically adjusted annually at compensatory airports.

### **Other Leased Areas**

A wide variety of arrangements are employed for other leased areas at an airport, which may include agricultural land, fixed base operations, cargo terminals, and industrial parks. The methods of calculating rental rates and the frequency of adjustment differ according to the type of facility and the nature of use. What these disparate rentals have in common is that, like terminal concessions and services, they are generally priced on a market basis; and the airport managers have considerable flexibility in setting rates and charges in the context of market constraints and their own policy objectives.

### **Variation in the Source of Operating Revenues**

In general, revenue diversification enhances the financial stability of an airport. In addition, the specific mix of revenues may influence year-to-year financial performance. Some of the major sources of airport revenue (notably landing fees and terminal concessions) are affected by changes in the volume of air passenger traffic, while others (e.g., airline terminal rentals and ground leases) are essentially immune to fluctuations in air traffic.

The distribution of operating revenues differs widely according to factors such as passenger enplanements, the nature of the market served, and the specific objectives and features of the airport's approach to pricing and financial management. Airport size generally has a strong influence on the distribution of revenues. The larger

commercial airports typically have a more diversified revenue base than smaller airports. For example, they tend to have a wider array of income-producing facilities and services in the passenger terminal complex. In general, terminal concessions can be expected to generate a greater percentage of total operating revenues as passenger enplanements increase. On average, concessions account for at least one-third of total operating revenues at large, medium, and small commercial airports, compared to about one-fifth at very small (nonhub) commercial airports and a smaller fraction still at GA airports (see table 23).

Factors other than airport size also affect distribution of operating revenues. At commercial airports, for example, parking facilities generally provide the largest single source of nonairline revenues in the terminal area. Airports that have a high proportion of connecting traffic may, however, derive a smaller percentage of their operating income from parking revenues than do so-called "origin and destination" airports. Other factors that may affect parking revenues include availability of space for parking, the volume of air passenger traffic, the airport pricing policy, availability and cost of alternatives to driving to the airport (e.g., mass transit and taxicab serv-

ice), and the presence of private competitors providing parking facilities at nearby locations off the airport property.

The approach to financial management, because it governs the pricing of facilities and services provided to airlines, significantly affects the distribution of operating revenues. Since so many other factors play an important role in determining revenue distribution, however, the mix of operating revenues at an airport cannot be predicted on the basis of whether the airport employs a residual-cost or a compensatory approach. The mix of revenues varies widely among residual-cost airports. With airline landing fees characteristically picking up the difference between airport costs and other revenues at residual-cost airports, airfield area income differs markedly according to the extent of the airport's financial obligations, the magnitude of terminal concession income and other nonairline revenues, and the volume of air traffic. In 1982, for example, airfield area revenues provided anywhere from 10 percent (Tampa International) to more than 50 percent (Chicago O'Hare International) of total operating revenues at residual-cost airports. By contrast, compensatory airports show a considerably smaller range of variation in the distribution of revenues.

Table 23.—Average Operating Revenue by Revenue Source, Commercial and General Aviation Airports, 1975-76

| Airport size                 | Source of revenue (percent) |  |  |                                       |                    | Total |
|------------------------------|-----------------------------|--|--|---------------------------------------|--------------------|-------|
|                              | Airfield area <sup>a</sup>  | Terminal area concessions <sup>b</sup> | Airline terminal leased areas <sup>c</sup> | Hangar and building area <sup>d</sup> | Other <sup>e</sup> |       |
| <b>Commercial</b>            |                             |  |  |                                       |                    |       |
| Large . . . . .              | 36                          | 33                                     | 16   | 11                                    | 4                  | 100   |
| Medium . . . . .             | 33                          | 38                                     | 14   | 11                                    | 4                  | 100   |
| Small <sup>f</sup> . . . . . | 30                          | 36                                     | 15   | 12                                    | 8                  | 100   |
| Nonhub . . . . .             | 37                          | 21                                     | 10   | 26                                    | 8                  | 100   |
| <b>General aviation</b>      |                             |  |  |                                       |                    |       |
| Large . . . . .              | 23                          | 12                                     | 5  | 47                                    | 13                 | 100   |
| Medium . . . . .             | 22                          | 9                                      | 9  | 57                                    | 4                  | 100   |
| Small . . . . .              | 28                          | 4                                      | —  | 60                                    | 8                  | 100   |

<sup>a</sup>Includes fees for landing, fuel and oil flowage, airline catering, and aircraft parking.

<sup>b</sup>Includes auto parking income, auto rental fees, restaurant and lounge fees, shop lease income, advertising, hotel and motel revenues, ground transportation, and miscellaneous concession revenues.

<sup>c</sup>Includes airline terminal rentals, government leases, and miscellaneous terminal rental income.

<sup>d</sup>Includes hangar rentals, ground leases, commercial and industrial leases, government leases, and airport revenue from fixed base operations.

<sup>e</sup>Includes utility fees and other systems and services revenues.

<sup>f</sup>Excludes nonhub and commuter airports.

SOURCE: Congressional Budget Office from survey data provided by Aerospace Systems, Inc., *Terminal Area Financial Data Study*, prepared by U.S. Department of Transportation, January 1978.

## TRENDS IN AIRPORT MANAGEMENT SINCE DEREGULATION

Federal deregulation of the airline industry has radically changed the market in which airlines—and airports—operate. Once subject to strict regulation of routes and fares, commercial air carriers are now free to revise routes, adjust fares, and introduce or terminate service to particular airports as market conditions seem to warrant. This new freedom from Federal intervention has had pronounced effects on the airline industry. It has spurred intense competition and even price wars among the airlines, led to reconfiguration of the route system, and encouraged the startup of new carriers. For some of the established airlines, serious financial difficulties have ensued. Although deregulation has not caused radical changes in the financial management of airports, recent trends do reflect the uncertainties of a new, open market. Deregulation also appears to have accelerated certain shifts in management policy and practice that were under way before deregulation.

Since the early days of commercial air travel, would-be investors in airport revenue bonds have held long-term use agreements in high regard, considering them evidence of the airlines' commitment to serve an airport for long periods—spans usually coincident with the terms of bond issues. As the industry has matured, however, investors and analysts have increasingly recognized that an airport's financial stability—hence its capacity to generate a stream of revenue adequate to secure revenue bond issues—depends more on the underlying strength of the local air travel market than on long-term use agreements.

Deregulation has reinforced this shift, as the strength of the airlines' financial commitment to an airport is significantly diluted by their new flexibility to withdraw from a market virtually at will. Confidence has also been shaken by the financial problems now plaguing many airlines. Although changes in airport financial management occur very slowly (many standing use agreements run through the 1990s or later), three important trends in financial management are now emerging at major commercial airports:

- shorter *term* contracts—shorter terms for airport use agreements, nonairline leases, and

concessionaires' contracts, and more frequent adjustment of rates and charges;

- *modification of residual-cost approach*—modification of residual-cost ratemaking and majority-in-interest provisions, with movement in the direction of more compensatory forms of financial management; and
- *maximization* of revenues—concerted effort by airport managers to maximize revenues by means of a variety of strategies intended to strengthen and diversify the revenue base of the airport.

### Shorter Term Contracts

Deregulation appears to have hastened a trend toward shorter term airport use agreements that was already under way prior to 1978. Shorter term contracts give airport operators greater flexibility to adjust pricing, investment policies, and space allocation to meet shifting needs in a deregulated environment. For example, several airports with long-term use agreements in force have given much shorter term agreements to air carriers that have begun serving the airport since 1978. Contracts for such recent entrants often run for 5 years or less, and they may take the form of yearly or even month-to-month operating agreements (similar to those used for air taxi and commuter operators). At least 15 percent of the large and medium airports surveyed by CBO have granted new carriers such relatively short-term terminal leases and/or use agreements. Moreover, as existing long-term use agreements expire, many airport operators indicate an intention to negotiate shorter term use agreements with all carriers serving the airport. At least a dozen of the airports surveyed by CBO either have recently concluded shorter term agreements or anticipate that new use agreements (planned or in negotiation) will be significantly shorter than ones now standing. In part, this reflects the fact that many post-deregulation agreements have not involved major capital development programs requiring long-term bond financing.

Many airports also report that, as old contracts expire, they are routinely shortening the terms of nonairline leases and contracts with concession-

aires. Some are also moving to more frequent adjustment of rates and charges under existing agreements to meet the escalating costs of airport operation.

### **Modifications of Residual-Cost Approach**

Some residual-cost airports appear to be modifying their approach to financial management. In recent years, some airports have introduced changes to the residual-cost approach, such as more compensatory methods of calculating airline fees and charges, weakening or elimination of majority-in-interest clauses, and provisions allowing for greater retention of earnings usable for capital development.<sup>13</sup> Many more airports with use agreements expiring over the next several years have indicated a desire or intent to move towards a more compensatory approach to financial management. In general, the compensatory approach becomes attractive as airports develop strong markets and thus increase their revenue-generating potential. Such airports are

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<sup>13</sup>See J. J. Corbett, "Analysis of Trends in Airport Lease/Use Agreements Executed With Airlines Since Deregulation," presentation before the Joint Meeting of the Airport Operators Council International Legal Standing and Economic Standing Committees, Vancouver, B.C., Canada, Oct. 17, 1983.

better able to assume the financial risks of airport operation without relying on "break-even" guarantees by the airlines, and they may maximize revenues by adopting a compensatory approach.

### **Maximization of Revenues**

No matter how they approach financial management, many commercial airports are now seeking to increase and diversify their revenues by a variety of strategies. These include raising existing fees and rental rates, seeking more frequent adjustment of charges, using competitive bidding for concessionaires' contracts, increasing the airport's percentage of gross profits, and exploiting new or untapped sources of revenue—e.g., videogame rooms, industrial park development, and leasing of unused airport property. Some airports are looking to future possibilities, as well. For example, two large airports that recently renegotiated airport use agreements—Chicago O'Hare and Greater Pittsburgh International—included clauses in the new contracts protecting the airport's right to levy a passenger facility charge (or head tax) if and when Federal law permits. In general, this effort to diversify and expand revenue sources reflects the paramount importance of a guaranteed stream of income to assure an airport's financial success.