radar reflectors along the Great Lakes and seacoasts. About 98 percent of recoverable program costs in this area goes for aids to commercial users, primarily fishing and other vessels operating in coastal waters. The Coast Guard considers recreational boaters the lowest category of navigational aid users and assigns them only 2 percent of recoverable costs for the following reasons: ". . .(1) for the most part, the recreational boater is a fair weather sailor who sails familiar waters; and (2) statistics indicate the recreational boater on the average actually uses his boat only a day or two per year. . . ." 3/ **Radionavigational aids** serve long-range navigational needs. These were originally developed to serve the U.S. military, and they include LORAN-C and marine radiobeacon services, which provide an accurate, continuous all-weather position-fixing capability and now serve large numbers of commercial vessels (coastal, Great Lakes, and international). 4/ **Domestic ice-breakers** operate on the Great Lakes and in coastal waters. Since 1936, the Coast Guard has operated a fleet of ice-breakers to facilitate winter passage of commercial vessels over ice-covered domestic waters. In addition, since 1967, the Coast Guard has had responsibility for administering bridges over navigable U.S. waters, to ensure safe, unobstructed ship navigation. A major part of this assignment entails removing or rebuilding bridges that hinder commercial vessels operating on inland waters.

Marine Safety

In 1984, the Coast Guard will spend about $152 million for marine safety programs benefiting both commercial and recreational users. Roughly 70 percent of this spending benefits commercial vessels. Major activities fall into three categories. **Commercial vessel safety** assures safe operation for merchant ships. Accordingly, the Coast Guard approves plans for commercial vessels and monitors their construction, conducts safety inspections of merchant marine vessels and offshore oil platforms for certification, and licenses seamen. Vessel documentation and admeasurement support the program's secondary objective, facilitation of waterborne commerce. Approximately 1 percent of costs is assignable to recreational boaters for yacht documentation. This service functions essentially ". . . as a convenience for those few yacht owners who sail internationally and seek

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3. See U.S. Coast Guard Cost Distribution System (September 1981), p. 12.

4. The Coast Guard also operates certain long-range aids, such as the LORAN radionavigation system, that benefit ships in international waters and thus are not good candidates for user fee financing.

preferred mortgages," and fees are charged--such as $100 for initial yacht documentation, and $50 for any change thereafter. **The recreational boating safety** program, authorized by the Federal Boating Safety Act of 1971, sets safety standards for recreational boat manufacture, administers the Volunteer Coast Guard Auxiliary, educates the boating public, and provides support for state boating safety programs and law enforcement activities. Finally, in providing **port safety and security,** the Coast Guard enforces regulations governing waterfront facility safety, the movement and anchorage of vessels, and the transport and stowage of dangerous cargo.

Marine Environmental Protection

The Coast Guard's environmental protection responsibilities grew out of national concern about potential dangers to the marine ecology posed by waterborne transportation. The Coast Guard's activities in this area include investigation and clean-up of pollution discharges, inspection and monitoring of liquid bulk transfers and facilities, and surface and aerial surveillance activities. These activities result largely from commercial shipping movements and related onshore facilities. Total spending is estimated at $215 million for 1984, of which $166 million potentially is recoverable, since it relates directly to marine pollution (though not all of it from identifiable sources).

THE PROSPECT FOR FULL-COST RECOVERY

As the Coast Guard's peacetime responsibilities have grown, its resources have been stretched thin. In recent years, many new regulatory functions, notably in drug law enforcement and marine environmental protection, have supplemented its older missions of search and rescue and aids to navigation. With this expanding array of missions, the Coast Guard has faced increasing budgetary pressures. User fees could help in two ways: by financing existing programs of benefit to marine users, and by promoting the efficient use of Coast Guard resources. The user fees considered here would not be so large as to jeopardize existing programs or to weaken any Coast Guard operations significantly.

The Pros and Cons of User Fees

As with the other user fees analyzed in this study, Coast Guard fees could give rise to two types of controversy--on grounds of tradition and on economic grounds. The first, looking to the Coast Guard's 200-year tradition of "free" (that is, taxpayer-supported) service, would oppose any institution of fees as an unwarranted departure from historical precedent.

In response, one could argue that Coast Guard services are not qualitatively different from other, user-supported federal services (aviation services and highways, for example). Indeed, when the Congress imposed inland waterway charges in 1978, it reversed a tradition of more than a century of free service. 5/ Further, equity concerns would also argue in favor of such a break with tradition. Imposition of Coast Guard user fees would correct the now inequitable system of all taxpayers' supporting services that benefit only finite groups of maritime users, including many commercial concerns. Thus Coast Guard user fees could improve the equity of cost allocations for Coast Guard services and facilities, while also producing the revenues to pay for these services. Improved economic efficiency could also result from a system of Coast Guard user fees, as parties paying for services would have compelling reasons to insist--through the efforts of representative organizations--on cost-effective services of high quality and elimination of operations that are too costly or of only marginal use.

Finally, with regard to the Coast Guard's life-saving functions, opponents of user fees could argue that these are in the public interest and are therefore indispensable and priceless. To counter this view, advocates of user fees would point to firefighting and police services--both as humanitarian as the Coast Guard's rescue services but effectively financed by tax levies.

Recovering Coast Guard Costs

User fees would be appropriate for those Coast Guard programs that help specific groups operating commercial and recreational vessels. The wide variety of Coast Guard activities--a hallmark of the multimission Coast Guard--means that a fee schedule would have to isolate recoverable costs on a program-by-program basis and then to allocate these costs as accurately as possible among the particular user groups affected. 6/

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5. In the Inland Waterway Revenue Act of 1978.

6. Not considered in this study as entailing recoverable costs are activities that serve the general public interest (such as drug enforcement, interdiction of illegal aliens, and marine science activities), activities that benefit nonmarine users (search and rescue over land or for missing aircraft, pollution clean-up of spills from pipelines and other nonmarine sources), operations conducted for the Department of Defense or in support of the Coast Guard's military readiness (for example, portions of the radionavigational aids and domestic ice-breaking programs), and pension payments to retired Coast Guard employees.

The Coast Guard has already estimated the level of recoverable costs by program and by user group. 7/ Its analysis only includes operating expenses, because these form the bulk of the Coast Guard's spending, and because of the desire to avoid the technical problems of setting and collecting fees for capital spending that has multiyear lives. Nonetheless, the Coast Guard's cost allocations appear reliable enough to be applied to the capital account (acquisition, construction, and improvements), and to research and development costs as well. Adding these latter two categories to operations and maintenance would increase the estimate of recoverable costs by about 15 percent. Some of the practical administrative problems of paying for capital programs are discussed below as well as in Chapter I.

On the basis of Coast Guard determinations adjusted by the Congressional Budget Office, recoverable costs--including operation, capital costs, and research and development--would total approximately $1.1 billion, or about 42 percent of all 1984 Coast Guard outlays. Most of these costs could be recovered from annual fees exacted from three groups of users: recreational boaters ($287 million), commercial fishermen ($300 million), and commercial coastal and international ship operators ($282 million). Table 10 displays the composition of these collections. Inland barge operators make much more limited use of Coast Guard services, and they would pay annual fees amounting to $48 million. 8/ An additional $134 million would be recovered in direct fees for various Coast Guard services to maritime personnel, vessels, and facilities.

Types of User Fees

Two types of Coast Guard user fees could be imposed--project-specific and uniform systemwide fees--aimed at recovering about 13 percent and 87 percent, respectively, of total recoverable costs.

Project- or service-specific fees would be applied to particular services or facilities, assessed each time the service is furnished or the facility used. These are classic user fees, like the toll on a toll road or the charge for using the Panama or Erie canals. Vessel documentation and admeasurement, inspection of vessels and other regulated facilities for conformance to safety and environmental protection standards, and licensing of merchant seamen all lend themselves to direct fees. The

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7. In U.S. Coast Guard Cost Distribution System (September 1981).

8. See Chapter III for a discussion of user fees for the Corps of Engineers' services for the barge industry.

TABLE 10. POTENTIAL USER FEE COLLECTIONS FOR COAST GUARD SERVICES, BY USER GROUP, IN 1984
(In millions of dollars)

User Group	Search and Rescue	Aids to Navigation a/	Marine Safety	Marine Environmental Protection	Total Fee Payments
		SYSTEMWIDE FEES			
Recreational Boating	227	7	43	10	287
Commercial Fishing	139	161	None	None	300
Inland Shipping	None	37	1	10	48
Coastal and International Shipping	32	130	25	95	282
		SPECIFIC FEES			
Personnel and Vessel Services	None	None	70	None	70
Facilities Services	None	None	13	51	64
Total Collections	398	335	152	166	1,051

SOURCE: Congressional Budget Office from data prepared by the Coast Guard for 1982.

a. Includes domestic ice-breaking costs for commercial vessels.

charges would be based on the actual costs to the Coast Guard to perform these services and could be collected directly by the person or office performing the service.

Systemwide fees would be best suited to services for which no charge for each use is practicable. For example, to charge for each rescue mission would be dangerous, since this would encourage boaters to wait until the last possible minute before calling for help from the Coast Guard. Most proposals have been for an annual fee per vessel, similar to existing state registration fees for boats and automobiles. Indeed, indirect fees have a close parallel in the existing federal user fees for highways and airports and airways, for which taxes are levied based on the types and amounts of federal services consumed by each major user group.

Each of the four major groups of private marine users--recreational boats, fishing fleets, commercial inland vessels, and commercial vessels engaged in coastal or international trade--uses a peculiar mix of Coast Guard services and facilities. Thus, the overall level of the charge would vary according to the combination and level of Coast Guard resources needed and the costs of providing those services. An annual fee appears a logical choice, with the fee schedules prorated to reflect different vessel lengths, gross tonnages, or other measures that represent the costs of providing Coast Guard services (see Table 11). 9/ When appropriate, the annual fee might be supplemented in a two-tier fee system by a surcharge for especially expensive services affecting small groups of users (winter ice-breaking on the Great Lakes, for example).

The fees need not be collected by a single agency, but rather could be handled by agencies that already have existing fee-collecting mechanisms or that have working relationships with the marine user group concerned--such as the U.S. Customs Service for vessels engaged in international trade, and the National Marine Fisheries Service for the foreign fishing fleet. Because of the large numbers of recreational boaters in the United States, annual registration fees for recreational boating might best be handled by the U.S. Postal Service. Since most states already have existing boat-numbering

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9. In some cases, a combination of such indicators might more accurately predict level of cost. Also, adjustments should be possible for subgroups within each user category whose level of use of Coast Guard services differs markedly from that of the group as a whole. For example, recreational boaters using inland waters are much less likely to need Coast Guard search and rescue services than are salt-water sailors.

systems and recreational boating-safety programs, user fees might also be administered by the states with federal supervision and financial assistance.

RECENT PROPOSALS

The Administration has proposed user fees for selected Coast Guard services for 1983 and 1984. The original proposal, submitted in February 1982, called for $800 million in user fee collections to recover operating costs. This plan was quite similar to the full-cost recovery approach analyzed here, though in excluding capital costs and research and development work, it would have recovered about $250 million a year less. Later in 1982, the Coast Guard proposed a less ambitious plan that lowered the costs to be recovered from recreational boaters. The lack of Congressional response to these initial proposals resulted in a still further scaled-down plan for the 1984 budget. 10/ This revised plan is quite different in that it proposes fees only for particular Coast Guard services provided to commercial mariners--safety inspections and the like. As a result, it dropped fees for recreational boaters and for fishermen and called for initial fees of only about $50 million. The Congress has not yet acted on this plan.

ISSUES IN APPLICATION

Two administrative objectives would be of major concern in implementing Coast Guard user fees:

- Identification of feasible, cost-effective ways to administer the different fees; and
- Establishment of an equitable allocation of costs among the various groups of marine users.

Collection of Fees. No major difficulties in administering and enforcing user fees appear likely for the three categories of commercial users: fishing fleets, domestic inland vessels, and domestic coastal and international vessels (see Table 11). Collection of fees might prove trickier for the approximately 8-9 million recreational boats sailing on inland and coastal waters under Coast Guard jurisdiction. One way to handle this large group of boaters would be to use the U.S. Postal Service as a collection agency in a manner analogous to the annual issuance of duck-hunting stamps to renew duck hunters' licenses. This appears to be a simple, relatively

10. The Administration's proposals for fiscal year 1983 failed to find a sponsor in either house of the Congress.

TABLE 11. POSSIBLE COAST GUARD USER FEES, 1984

User Category	Type of Fee	Size of Fee (In dollars per vessel) Average	Size of Fee (In dollars per vessel) Range	Annual Receipts (In millions of dollars)
	ANNUAL SYSTEMWIDE FEES			
Recreational Boats	Prorated for vessel size	18	4-600	287
Fishing Fleets (Foreign and Domestic)	Prorated for tonnage capacity 40,000	1,488 a/	1,350-	300
Commercial, Domestic Inland Shipping	Prorated for horsepower (tugs/towboats) or gross cargo tonnage	1,300	800-10,000	48
Commercial, Domestic Coastal and Shipping	Prorated for horsepower (tugs/towboats) or gross cargo tonnage	3,817	800-40,000	282
	SPECIFIC FEES			
Personnel and Vessel Services b/	At each use of service	—	77,000-210,000 c/	70
Facilities Services	Annual and one-time	—	1,000-14,400 c/	64
Total	—	--	--	1,051

SOURCE: Congressional Budget Office from data prepared by the Coast Guard for 1982.

a. Domestic fishing vessels only.

b. Documentation, licensing, and inspection.

c. Dollars per transaction.

economical means of collecting an annual recreational boating fee. Another approach would be to let the states handle the job. All but three states currently have numbering systems for vessels not documented by the federal government, and the states have primary responsibility for on-the-water enforcement of recreational boating safety laws and regulations. 11/

For power boats, a tax on motor boat fuel is, of course, an option for part of the fees. By itself, however, such a tax presents some problems: it represents only a fraction of the needed revenues, it excludes sailboats, and evasion would be encouraged so long as automotive fuel was taxed at a lower rate. Recreational boaters already pay the 9 cents per gallon federal tax on motor fuel, with payments made to the existing National Recreational Boating Safety and Facilities Improvement Fund. Under current law, these funds are restricted to the states, once they have satisfied certain minimum requirements. 12/ The revenues from the existing tax are not large (projected to produce receipts of $67 million in 1984), and the potential for any increase is limited by the ease of obtaining automotive gasoline. Such funds could be used, however, to defray the state costs of collecting annual fees.

Equitable Allocation of Costs. A second administrative objective is to achieve an equitable allocation of costs among user groups. The variety of Coast Guard functions and the multimission use of individual resources complicate this task, but improved Coast Guard information systems have made available a quantity of resource- and client-specific data concerning use of Coast Guard services and facilities by marine user groups. 13/ Phasing in full user fees over several years would permit evaluation of public comments and appeals, correction of any inequities, and assessment of any unanticipated adverse effects.

Capital Costs. Recovery of the Coast Guard's capital expenditures could be handled in one of two ways:

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11. See Coast Guard Roles and Missions, Report (March 1982), pp. 28-31.

12. These requirements include establishment of a state vessel numbering system (federally approved or administered), operation of a cooperative boating safety assistance program with the Coast Guard, existence of a state boating safety education program, and existence of adequate patrols and safety activities to ensure enforcement of state boating safety laws.

13. See U. S. Coast Guard Cost Distribution System (September 1981).

- o On a pay-as-you-go cash financing basis, just as federal highway and airport costs are treated; or

- o Amortized over the expected life of the equipment, as the Administration has proposed for ports and harbors (see Chapter II).

A pay-as-you-go approach, with income and outgo to occur in the same year, is clearly easier to administer. Since capital spending is a relatively small portion of the recoverable part of Coast Guard spending (about 20 percent), including these expenditures along with the operations subsidies might be appropriate for practical reasons. Also, to assign equipment such as planes or cutters to a single function is very difficult. The second approach, amortizing capital costs, would be most useful for capital-intensive projects with long economic lives, such as locks and dams and irrigation systems, and for facilities that are used by a geographically concentrated group of users. Most of the capital spending by the Coast Guard, however, goes for cutters and planes that are used for a wide variety of purposes over all the territory served by the Coast Guard.

ECONOMIC EFFECTS

Recreational boaters and fishermen have been particularly concerned about the economic impacts of these user fees. Recreational boaters, for example, point out that the average American boat-owner is not a "wealthy yachtsman" but rather a person with an income between $15,000 and $20,000 a year who operates a small craft not 16 feet long. 14/ On the other hand, the fees as proposed originally by the Coast Guard would be quite small for the majority of recreational boaters--on average, only $6 per boat for the ten million boats used on inland waters. (These represent almost 75 percent of all recreational boats.) Overall, the fees would be small relative to total spending on boating. The National Marine Manufacturers Association estimates total 1982 retail expenditures on boating of $8.1 billion. 15/ With user fees set to recover full federal costs, all recreational boaters together would pay approximately $287 million in user fees in 1984, or about 3.3 percent of estimated total retail expenditures. The increase in total

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14. Testimony of Michael Sciulla, Government Affairs Director, Boat Owners Association of the U.S., before the House Subcommittee on Coast Guard and Navigation (May 19, 1981), p. 72.

15. See "Boating 1982: A Statistical Report on America's Top Family Sport," prepared by MAREX for the National Marine Manufacturers Association.

costs suggests that any dislocations felt by recreational boaters would be trivial. Thus, in contrast to many other user fee proposals considered in this study, phasing in these Coast Guard user fees over time seems an unwarranted caution.

Commercial mariners and fishermen, unlike recreational boaters, depend on the sea for their livelihoods, and thus for them, any negative economic impacts from fees could be more serious. In recent years, the U.S. fishing industry has not fared well, owing in large part to an overexpansion of fleets and harvesting capacity, with an accompanying trend of declining productivity. 16/ Accordingly, the Administration originally proposed to recover less than one-third its estimate of costs related to the fishing industry--only $50.5 million of the $165 million in costs allocated to the fishing fleets. This reduction elicited protests from other commercial mariners, who felt that such favored treatment of the fishing industry was inequitable.

Although statistics for the fishing industry may not be reliable, the National Marine Fisheries Service estimates that total 1982 commercial landings by U.S. fishermen yielded $2.4 billion worth of fish. 17/ Thus, under full-cost recovery, fees on domestic fishing vessels would represent about 10 percent of the value of total domestic landings, but a much higher percentage of total earnings for the industry--especially in light of the decline in productivity, increases in repair costs and fuel prices, and recent weak markets for fish. Though no industrywide data are available, an example to consider is that of the New England groundfish industry, which showed a profit margin of only 4 percent in 1980. 18/ To avoid imposing too sudden a financial burden on this sagging industry, the related portion of Coast Guard fees could be phased in over several years.

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16. See National Marine Fisheries Service, Fisheries Economic Task Force Report (August 25, 1980), p. 62.

17. See National Marine Fisheries Service, Fisheries of the United States, 1982 (April 1983), p. iv. There was an additional $176 million in landings by U.S. fishermen in ports outside the U.S. or transferred (through joint ventures) to foreign vessels in the Fishery Conservation Zone. Foreign catches in the zone totaled 3.1 billion pounds.

18. See National Marine Fisheries Service, "Productivity Trends in the New England Fish Otter Trawl Fleet" (April 1982), p. 46.

CHAPTER V. AVIATION SERVICES

Realignment of current systemwide user fees, already adequate to finance most of the 85 percent of federal aviation outlays considered recoverable ($3.2 billion of $4.1 billion in 1984), would correct the cross-subsidy to general aviation business planes now coming mainly from commercial airline passengers. With fee differentials adjusted to reflect the actual costs imposed by different classes of aviation service users, the burden of cost recovery would shift significantly. Current levels of recovery could be sustained and taxes on airline tickets, international departures, and freight lowered if taxes on general aviation jet fuel and gasoline were increased roughly ten-fold. Similar adjustments could be effected by sales taxes to general aviation on new aircraft or avionics equipment purchases.

Although air transportation accounts for a small share of all domestic U.S. travel--about 14 percent of all intercity passenger miles--it nonetheless draws heavily on the nation's economic resources. In 1982 alone, the public and private sectors together spent $49 billion and employed 1.1 million workers in the manufacture and delivery of air transportation goods and services.

User fees to pay for federal aviation-related expenses are already in effect. These are collected as taxes and other charges levied on users of commercial airlines and general aviation (planes owned by firms and individuals for business and recreation). Channeled into the Airport and Airway Trust Fund, receipts help to finance federal investments in airports and in the air traffic control system, which is equipped and run entirely by the federal government. User fee collections of some $3.2 billion in 1984 will go far toward covering federal aviation outlays of $4.1 billion. Of the remaining $0.9 billion, roughly $0.6 billion is attributed to military aviation; this latter expenditure is regarded by many analysts as inappropriate for recovery from users.

Although recovery of nearly four-fifths of civilian aviation costs means that the level of federal receipts is quite well matched to outlays, a

misalignment of fees to different classes of users has given rise to a problematic cross-subsidy. Though travelers on commercial airlines and many general aviation flyers pay large shares of the costs they incur, some users--principally, business jets--do not. Thus, an inequitable situation leads in turn to inefficiency, taking the form of wasted capital, labor, and energy. Were this imbalance righted, conservation of these resources, hence improved economic efficiency, would follow.

THE CURRENT FEDERAL AVIATION PROGRAM

To help accommodate growth in air travel, the Federal Aviation Administration (FAA) of the U.S. Department of Transportation provides funds for the construction and rehabilitation of the nation's airports and for the construction and operation of the air traffic control system. 1/ Since 1970, FAA spending has totaled just less than 40 percent of the $15 billion in total nationwide airport spending. Capital investment in air traffic control since 1970 has come to $8.5 billion, almost all of it federally funded.

The Cross-Subsidy to General Aviation

While commercial airlines carry the bulk of passenger traffic (about 94 percent of all passenger miles flown), general aviation uses a disproportionate share of FAA services. In 1981, the general aviation fleet of 211,000 planes (84 times the size of the commercial fleet of 2,500 airliners) accounted for half of all takeoffs and landings assisted by FAA airport control tower instruments (see Table 12) and nearly one-third of all aircraft handled by en route traffic control centers. 2/ In 1981, about two-

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1. Economic regulation of the domestic air industry by the federal government ended in 1978, and the Civil Aeronautics Board is scheduled to be abolished in 1985. Nonetheless, the FAA still regulates many aspects of air travel and also provides such special services as flight plans, pilot briefings, navigation services to military aircraft, and general weather information.

2. In 1982, general aviation's share of takeoffs and landings, and of operations at air routes traffic control centers, slipped to 45 percent and 27 percent, respectively. A result of economic recession, this indicates that general aviation users are more sensitive to economic conditions than commercial airline passengers (though the number of commercial airline passengers traveling also fell sharply during 1982).

TABLE 12. AIR TRAFFIC CONTROL TOWER INSTRUMENT OPERATIONS, SELECTED YEARS 1978-1994 (In millions)

Years	Military	Air Carrier a/	General Aviation	Total	General Aviation as a Percent of Total
1978	3.7	13.5	16.3	33.5	48.7
1981	3.9	14.8	18.5	37.2	49.7
1982	3.6	13.9	14.1	31.6	44.6
Forecast 1994 b/	3.9	21.0	28.9	53.8	53.7

SOURCE: Congressional Budget Office from Federal Aviation Administration, FAA Forecasts of Aviation Activity, Fiscal Years 1982-1993 (February 1983).

a. Includes air taxis and commuter airlines.

b. For an appraisal of FAA's accuracy in long-term projections, see Congressional Budget Office, Improving the Air Traffic Control System: An Assessment of the National Airspace System Plan (August 1978). In general, the FAA has been too high in its projections, although it has been relatively more accurate in projecting the mix of commercial and general aviation traffic.

thirds of all general aviation hours was business-related travel. The 50,000 business-owned aircraft make more than eight million flights each year--more flights than all the commercial airlines make together. (One in two of the 1,000 largest U.S. industrial companies operates at least one plane.) This trend is anticipated to continue. By 1994, the FAA expects general aviation to account for more than half of all control tower takeoffs and landings and nearly 40 percent of the workload at en route control centers.

Current Policy

Under current policy, the FAA will spend $21.9 billion between 1984 and 1988--about $4.4 billion a year (see Table 13). These funds are to be

TABLE 13. PROJECTED FEDERAL AVIATION ADMINISTRATION OUTLAYS UNDER CURRENT POLICY, TO 1988 (In billions of dollars)

	1984 a/	1985	1986	1987	1988	Five-Year Total
Air Traffic Control Operations and Maintenance	2.7	2.6	2.7	2.7	2.7	13.4
Capital Improvements and Research and Development	1.4	1.4	1.8	1.9	2.0	8.5
Gross Outlays	4.1	4.0	4.5	4.6	4.7	21.9
Receipts from User Fees (-) b/	-3.2	-3.6	4.0	4.4	4.8	20.0
Net Outlays c/	0.9	0.4	0.52	0.2	-0.1	1.9

SOURCE: Congressional Budget Office.

NOTE: Programs under Airport and Airways Improvement Act of 1982 are authorized through September 1987. Some $650 million in 1984 authorizations for facilities and equipment was not appropriated. If the funds are appropriated in later years, outlays will rise accordingly.

a. Assumes appropriations under the Department of Transportation and Related Agencies Appropriations Act of 1984.

b. Assumes FAA forecasts of trust fund revenues. Also includes accrued interest on the cash balance.

c. Include outlays for military aviation not recoverable from user fees.

split between operation and maintenance of the air traffic control system (61 percent of outlays) and capital investment in airports and navigational equipment for air traffic control (39 percent). A large portion of the capital program will go toward implementing the National Airspace System Plan, a comprehensive scheme to modernize computer and software equipment at all en route traffic control centers. 3/ Finally, about 5 percent is to fund research and development.

The current levels of aviation user fees were established by the Tax Equity and Fiscal Responsibility Act of 1982. The commercial ticket tax, which had been 5 percent in 1981 and 1982, was returned to the 8 percent level that prevailed during the 1970s. General aviation fuel fees were increased substantially, from 4 cents per gallon to 12 cents per gallon for gasoline, and from zero to 14 cents per gallon for jet fuel. (During the 1970s, these taxes had been set at 7 cents per gallon, but they were withdrawn with expiration of 1970 legislation). Unless renewed, these rates will revert to previous levels in 1987. In addition, the trust fund collects fees from international passengers and air freight waybills (see Table 14). Between 1984 and 1987, the $4.36 billion in receipts from these several fees is projected to recover about four-fifths of total FAA outlays of $5.20 billion.

FULL-COST RECOVERY AND THE PROBLEMS OF ALLOCATING COSTS

Recognizing the uncertainties and discretionary judgments associated with most cost allocation analysis, the FAA has used two methods to estimate the range of likely cost responsibility. 4/ The two approaches reflect differences about assigning the costs of services that, though used by and probably beneficial to general aviation, may not be essential. Contentious investments include long, broad runways--larger than general aviation requires but essential for large jetliners--and sophisticated guidance systems. General aviation flyers often contend that, as they do not require these costly facilities, they ought not be charged for them.

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3. See Congressional Budget Office, Improving the Air Traffic Control System: An Assessment of the National Airspace System Plan (August 1983).

4. See Federal Aviation Administration, Financing the Airport and Airway System: Cost Allocation and Recovery (November 1978). Results partially revised by the Office of Management and Budget in 1981.

TABLE 14. AVIATION USER FEES UNDER CURRENT POLICY AND WITH FULL-COST RECOVERY

Sources of Fees	User Fees		Percent of Total Outlays Recovered	
	Under Current Policy	With Full-Cost Recovery	Under Current Policy	With Full-Cost Recovery a/
Commercial Airline Tickets	As a percent of ticket price			
	8	7.2	64.0	53.0
International Departures	Dollars per passenger			
	3	2.70	1.9	1.7
Freight	As percent of waybill			
	5	4.50	3.1	2.8
General Aviation Fuel	Tax in dollars per gallon			
Gasoline	0.12	1.00	3.3	27.0
Jet fuel	0.14			

SOURCE: Congressional Budget Office.

NOTE: Assumes adjusted fee rates but unchanged structure for full-cost recovery. Therefore disregards alternatives such as possible taxes on new general aviation aircraft sales or avionics equipment.

a. Data for 1983.

Overriding these concerns, the FAA's first analytic approach--termed a "marginal cost" method--attributes all federal airport and airway costs to users in rough proportion to the capital and operating costs actually incurred. Under this approach, commercial air carriers should pay about

58 percent, with general aviation users paying 27 percent of all FAA costs. 5/ According to this logic, commercial and general aviation users together should pay for about 85 percent of total FAA expenditures.

The second approach, taking account of "minimum requirements," recognizes that to permit the joint use of airports by commercial jets and general aviation aircraft, FAA services must meet the needs of the largest, most sophisticated airliners as well as simpler general aviation planes. This method of allocation holds general aviation users responsible only for the cost of the theoretical minimum level of service they require, regardless of the fact that these users benefit from the added safety and efficiency of a larger, more advanced system. Under the minimum requirements approach, commercial air carriers should still pay about 58 percent, but general aviation users should pay only about 14 percent of all FAA costs--roughly half what they would pay under the first method. The unallocated remainder is regarded as a cost of safety and operating efficiency reasonably assigned to general taxpayers, who thus shoulder 28 percent of FAA costs.

As a basis for determining user fees, the analysis in this chapter relies on the marginal cost method of cost allocation for two reasons. First, efficiency can best be promoted by fees that reflect the actual costs of services provided. Second, most general aviation business jets use FAA services by means of avionics and other equipment equal in sophistication to that of commercial jets. Were these users satisfied with a lower level of service, then presumably they would equip their planes with cheaper, more rudimentary instruments. In other words, the minimum requirements of most general aviation users are likely to approximate those of the most elaborate commercial airliners anyway.

On the basis of the FAA's marginal cost method of allocation, the CBO estimates that the FAA will spend $10.8 billion (in recoverable costs) on behalf of commercial users and $5.9 billion for general aviation over the next five fiscal years. As user fee receipts from commercial air traffic already exceed its share of costs (by about 3 percent), the ticket tax could be reduced from its current level of 8 percent to 7.2 percent (see Table 14). (The taxes on international departures and freight waybills could be set at $2.70 per passenger and 4.5 percent of waybills, respectively, down from the present $3 per passenger and 5 percent of waybills. On the other hand,

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5. This allocation is based on FAA costs for 1978, but it is expected to remain relatively unchanged over the next five years, with the possibility of an increase in general aviation's share under the newly authorized National Airspace System Plan.

revenue from general aviation would have to increase eightfold to recover fully its share of FAA expenditures. (Under the minimum requirements method of allocating costs, receipts from general aviation would have to increase fourfold.)

The Nonfederal Role and the Congestion Problem

Although the FAA is responsible for all spending on the air traffic control system, less than half of all annual airport expenditures are federal. Airport authorities, accounting for most of the remainder, support their spending through their own, local user fees. Since the structure and levels of local fees heavily influence the demand for both airport and air traffic control services, local fees cannot be disregarded in appraising the need for federal investments in the overall air transport system.

Even if all users paid their full shares of federal airport investments (as commercial airline passengers do already), the structure of local user fees could result in excessive demands for airport expansion. Traffic congestion, giving rise to pressure to expand airport capacity, occurs during daily or seasonal periods of peak demand, occurring most commonly at mid-day and late-afternoon at hub airports. 7/ In most instances, landing fees are determined on the basis of aircraft weight and do not vary by time of day. 8/ Heavy aircraft--such as large commercial airliners--do indeed cause greater wear and tear on runways than do lighter planes (such as small business jets), suggesting that weight-based landing fees are good reflections of the maintenance costs occasioned by diverse craft. But heavy and light planes, when they compete for congested runway space, add roughly equally to airport capital needs. Thus, though a light plane requires roughly the same landing time and space as a heavier one, at most airports, light planes pay about one-twentieth the amount heavy planes do, regardless of traffic conditions (see Table 15).

If, instead of flat fees, airports superimposed a second tier of fees on top of normal rates, charging higher landing fees during periods of peak congestion, many general aviation users would choose to fly into reliever airports, and some commercial airline passengers would elect to travel at

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7. See Congressional Budget Office, Public Works Infrastructure, Chapter VII.

8. Important exceptions, however, are the peak-hour surcharges established in 1968 by the Port Authority of New York and New Jersey for La Guardia and Kennedy International airports.

TABLE 15. NONFEDERAL LANDING FEES AT FIVE MAJOR AIRPORTS BY AIRCRAFT TYPE IN 1978 (In dollars)

Aircraft by Type of Use and Passenger Capacity	Atlanta	Los Angeles	La Guardia a/	Washington National	Denver
DC-10-30 (Air carrier--240-270 seats)	169	81	669	b/	111
B-727-200 (Air carrier--120-140 seats)	63	30	249	47	41
B-737-200 (Air carrier--114-120 seats)	43	21	171	33	28
Swearingen Metro (Air taxi--19-20 seats)	7	3	27	5	5
Learjet 25B (General aviation --8 seats)	6	3	25	5	3

SOURCE: Congressional Budget Office from Office of Technology Assessment, Airports and Air Traffic Control System (1980).

a. Reflects peak hour surcharge imposed by the Port of New York and New Jersey Authority.

b. Federal noise-abatement regulations prohibit DC10-30s from using Washington National Airport.

off-peak hours. Thus, all users would be encouraged to make use of airport time and space that go to waste under the current structure of local fees. Such a two-tier system, in turn, would reduce congestion and delay and relieve pressure on air carrier airports to expand capacity. Construction of

additional runways at Phoenix Sky Harbor Airport, for example, could be postponed by as long as eight years if peak-period general aviation activity were substantially reduced, by five years at Memphis International, and by three years at San Diego's Lindbergh Airport. 9/

Barriers to Change. A key reason why airports do not now tailor landing fees to the variations in hourly costs is that the fees are established in long-term contracts between airports and airline managements. In many cases, these contracts prevent airport managers from instituting peak-hour surcharges. Under the Constitution, the Congress has the power to abrogate contracts that interfere with its function, to regulate interstate commerce, however, and could, through legislation, encourage airport operators to apply peak-hour pricing. 10/

ISSUES IN APPLICATION

The application of aviation user fees to recover full federal costs would raise several institutional, administrative, economic, and societal questions. To enact such fees, established institutional practices would have to be changed. Administrative questions about alternative fee collection mechanisms would arise. Sharply increased user taxes could create transition problems for aviation users and aircraft manufacturers.

Institutional Barriers

A barrier to the full recovery of federal investment costs is the legislative cap, dating back to 1972, on the proportion of FAA operating costs to be financed from user fees. In that year, the Congress declared it unlawful for the FAA to finance any of its operating costs from the Airport and Airways Trust Fund. This restriction stemmed from a decision by the Nixon Administration to impound FAA appropriations for capital improvements while funding all FAA operating costs from the trust fund. In the belief that capital spending should be the trust fund's primary focus, the Congress responded by prohibiting user financing of operating costs. Over the years, this restriction has been somewhat relaxed; in 1983, 46 percent of operating costs was financed by user fees.

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9. See Congressional Budget Office, Public Works Infrastructure, Chapter VII.

10. See General Accounting Office, Aircraft Delays at Major Airports Can Be Reduced (September 4, 1979), p. 10.