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## Program of Charges for the Use of the Federal Airways - Part II

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## A PROGRAM OF CHARGES FOR THE USE OF THE FEDERAL AIRWAYS\*—PART II

### *Estimated Allocation of Annual Cost Responsibility on Basis of Use*

The relative utilization of each of the major components of the airways furnishes the basis for an estimated allocation of the annual costs of the system to each of the three user groups referred to in this report. The simplest method of allocation is in direct proportion to the number of units of use consumed on the assumption that each such unit has an equivalent effect on the costs of providing the aids and services. On this basis the distribution of the cost responsibility for the air route traffic control centers, for example, would be directly proportionate to the number of fix postings made by each class of user. Table 3 shows the estimated allocation which would result. It should be noted that use of the airways by the U. S. Government, including the military, has been given the same treatment as other uses and the cost responsibility of the civil user groups has been reduced accordingly. A summary of Table 3 follows.

<i>User group</i>	<i>Allocated share</i>	<i>Percent of total annual costs</i>
Scheduled Air Carrier	\$28,507,540	37.7
Other Civil	21,806,257	28.8
Military	25,379,294	33.5
TOTAL	\$75,693,091	100.0

### *Estimated Allocation of Annual Cost Responsibility on Value of Service Basis*

The cost allocation based on relative use has the serious weakness for pricing purposes that it does not take into account the economic value derived from the airways by the various user groups. It assumes, for example, that use by a Piper Cub carrying one passenger on a flight is the same as that of a Constellation carrying 60 passengers. In order to take into account this value concept and to provide a more equitable allocation of costs, it is essential therefore to draw a distinction between users in those cases where the value of a unit of use is measurably greater for one user class than for another. Under this concept the utilization of each group is related to the value of service to them and weighted proportionately. It recognizes that it would be inequitable to charge the small aircraft owner the same rates as the commercial transport operator.

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\*A Report of the U.S. Department of Commerce, dated December 31, 1953—Condensed by Editors.

TABLE 3—ESTIMATED ALLOCATION OF COSTS OF FEDERAL AIRWAYS SYSTEM ON BASIS OF USE, CONTINENTAL UNITED STATES, FISCAL YEAR 1952

	Total Cost	Scheduled Air Carrier		Other Civil		Military	
		(Dollars)	Per-cent	(Dollars)	Per-cent	(Dollars)	Per-cent
<i>Terminal Aids</i>							
Control Towers .....	13,204,342	3,036,999	23.0	7,882,992	59.7	2,284,351	17.3
Approach Light Lanes .....	922,797	859,124	93.1	40,603	4.4	23,070	2.5
Fan Markers .....	280,587	202,303	72.1	17,116	6.1	61,168	21.8
Instrument Landing Systems .....	3,570,450	3,324,089	93.1	157,100	4.4	89,261	2.5
Precision Approach Radar .....	1,012,398	591,240	58.4	113,389	11.2	307,769	30.4
Airport Surveillance Radar .....	1,763,104	1,003,206	56.9	594,166	33.7	165,732	9.4
Homing Facilities .....	288,095	193,296	72.1	16,354	6.1	58,445	21.8
Combined Station-Towers .....	1,558,539	358,464	23.0	930,448	59.7	269,627	17.3
Subtotal .....	22,580,312	9,568,721	42.4	9,752,168	43.2	3,259,423	14.4
<i>Enroute Aids</i>							
Traffic Control Centers .....	12,208,841	7,508,437	61.5	1,013,334	8.3	3,687,070	30.2
Communications Stations .....	24,473,641	2,447,364	10.0	8,761,563	35.8	13,264,714	54.2
Light Beacons .....	1,326,069	132,607	10.0	474,733	35.8	718,729	54.2
Intermediate Fields .....	752,469	24,079	3.2	613,262	81.5	115,128	15.3
Fan Markers .....	696,049	428,070	61.5	57,772	8.3	210,207	30.2
Homing Facilities .....	974,229	589,151	61.5	80,861	8.3	294,217	30.2
L/MF Ranges .....	4,894,055	3,009,844	61.5	406,207	8.3	1,478,004	30.2
VHF Ranges .....	6,741,550	4,146,053	61.5	559,549	8.3	2,035,948	30.2
Distance Measuring Equipment .....	1,045,876	643,214	61.5	86,808	8.3	315,854	30.2
Subtotal .....	53,112,779	18,938,819	35.7	12,054,089	22.7	22,119,871	41.6
GRAND TOTAL .....	75,693,091	28,507,540	37.7	21,806,257	28.8	25,379,294	33.5

Moreover, unless the value of service element is injected into the allocation of cost responsibility, the resulting allocation would furnish an inadequate basis upon which to judge the equity of the proposed charging or pricing technique. This is so because the charging technique reflects not only use but also the value derived from this use.

The major difficulty with this approach is the necessity of estimating the economic value derived by the users of the airways on a comparable basis. This requires a yardstick which is common to all aircraft or aircraft operators. The most satisfactory measure providing such a common denominator for the two civil user groups appears to be the maximum gross take-off weight of the aircraft using the airways. Accordingly, an average weight was calculated for the aircraft operated by the scheduled air carriers and the other civil user group during the fiscal year 1952 using the number of plane-miles flown by each type of aircraft. Table 4 shows that the gross take-off weight of the average scheduled air carrier aircraft was 62,800 pounds, while the corresponding figure for the average aircraft in the other civil group was 3,000 pounds, a ratio of approximately 21 to 1. These weights were then applied to the utilization statistics developed for each of the major airway components to provide a basis for allocation of costs. Inasmuch as the economic value derived by military users of the airways is an intangible and does not appear capable of exact determination by use of a gross take-off weighting factor or any other yardstick common to all aircraft, it has been assumed that the value of service derived by the military is equivalent to that of the other principal user group, the scheduled air carriers. Accordingly, the units of military airway use have been assigned the same weight as that given the scheduled airlines.

TABLE 4 — AIR CARRIER AIRCRAFT WEIGHTING FACTOR  
(Domestic Trunk, Local Service and Certificated All Cargo Carriers)

<i>Aircraft Model</i>	<i>Plane-miles Flown, Fiscal 1952 (a)</i>	<i>Gross Weight in Tons (b)</i>	<i>Gross Ton-miles in Millions (a) x (b)</i>
Beech A-35 .....	98,830	1.4	0.1
Bell 47D .....	349,309	1.1	0.4
Boeing 377 .....	5,463,040	72.5	396.1
Cessna T-50 .....	443,650	2.7	1.2
190 .....	711,780	1.7	1.2
Convair CV240 .....	44,296,311	21.3	943.5
Curtiss C-46 .....	15,000,825	24.0	360.0
Douglas DC-3 .....	146,450,360	12.6	1,845.3
DC-4 .....	62,311,608	36.5	2,274.4
DC-6 .....	87,923,904	48.6	4,273.1
DC-6A .....	1,085,613	53.5	58.1
DC-6B .....	19,541,467	50.0	977.1
Lockheed L-18 .....	4,779,411	8.8	42.1
L-49 .....	22,298,323	48.0	1,070.3
L-649 .....	3,374,779	49.0	165.4
L-749 .....	25,208,047	53.5	1,348.6
L-1049 .....	4,926,577	60.0	295.6
Martin 202-202A .....	4,155,331	20.0	83.1
404 .....	7,893,960	22.5	177.6
Sikorsky S-51 .....	247,488	2.7	0.7
TOTAL.....	456,560,613	—	14,313.9

Average gross weight per plane-mile flown—31.4 tons or 62,800 lbs.

OTHER CIVIL AIRCRAFT WEIGHTING FACTOR

	Plane-miles Flown, Calendar 1951 (a)	Gross Weight in Tons (b)	Gross Ton-Miles in Millions (a) x (b)
<i>Single-Engine</i>			
1- and 2-place			
65 hp. or less .....	169,350,000	0.55	93.1
66-100 hp. ....	173,600,000	0.65	112.8
Over 100 hp.....	92,280,000	1.75	161.5
3 or more place			
144 hp. or less.....	109,680,000	0.90	98.7
Over 144 hp.....	302,905,000	1.40	424.1
<i>Multi-Engine</i>	145,600,000	4.25	618.8
<i>All Other</i>	1,350,000	0.50	0.7
<b>TOTAL .....</b>	<b>994,765,000</b>	<b>—</b>	<b>1,509.7</b>

Average gross weight per plane-mile flown—1.5 tons, or 3,000 lbs.

Table 5 shows the estimated allocation of the annual costs of the airways which results. These are summarized below.

User group	Allocated share	Percent of total annual costs
Scheduled Air Carrier...	\$36,566,009	48.3
Other Civil .....	1,941,337	2.6
Military .....	37,185,745	49.1
<b>TOTAL.....</b>	<b>\$75,693,091</b>	<b>100.0</b>

TABLE 5 — ESTIMATED ALLOCATION OF COSTS OF FEDERAL AIRWAYS SYSTEM OF VALUE OF SERVICE BASIS, CONTINENTAL U. S., FISCAL YEAR 1952

	Scheduled Air Carrier		Other Civil		Military	
	(Dollars)	Per-cent	(Dollars)	Per-cent	(Dollars)	Per-cent
<i>Terminal Aids*</i>						
Control Towers....	7,037,914	53.3	871,487	6.6	5,294,941	40.1
Approach Light						
Lanes .....	896,958	97.2	1,846	0.2	23,993	2.6
Fan Markers .....	214,649	76.5	842	0.3	65,096	23.2
Instrument Landing Systems .....	3,470,477	97.2	7,141	0.2	92,832	2.6
Precision Approach Radar .....	661,096	65.3	6,074	0.6	345,228	34.1
Airport Surveillance Radar.....	1,477,482	83.8	42,314	2.4	243,308	13.8
Homing Facilities..	205,093	76.5	804	0.3	62,198	23.2
Combined Station-Towers .....	830,701	53.3	102,864	6.6	624,974	40.1
Subtotal .....	14,794,370	65.5	1,033,372	4.6	6,752,570	29.9
<i>Enroute Aids*</i>						
Traffic Control Centers .....	3,155,506	66.8	48,835	0.4	4,004,500	32.8
Communications Stations .....	3,719,993	15.2	636,315	2.6	20,117,333	82.2
Light Beacons ....	201,562	15.2	34,478	2.6	1,090,029	82.2
Intermed. Fields...	107,603	14.3	130,930	17.4	513,936	68.3
Fan Markers .....	464,961	66.8	2,784	0.4	228,304	32.8
Homing Facilities..	650,785	66.8	3,897	0.4	319,547	32.8
L/MF Ranges.....	3,269,229	66.8	19,576	0.4	1,605,250	32.8
VHF Ranges.....	4,503,355	66.8	26,966	0.4	2,211,229	32.8
Distance Meas. Equipment.....	698,645	66.8	4,184	0.4	343,047	32.8
Subtotal .....	21,771,639	41.0	907,965	1.7	30,433,175	57.3
<b>GRAND TOTAL</b>	<b>36,566,009</b>	<b>48.3</b>	<b>1,941,337</b>	<b>2.6</b>	<b>37,185,745</b>	<b>49.1</b>

\* Cost and Basis of Allocations same as Table 3.

*Conclusions on Allocation of Cost Responsibility*

Comparison of the cost allocations made in Tables 3 and 5 indicates a wide range in the estimated share of both the scheduled air carriers and the other civil flyers. The allocation in Table 3 is directly proportionate to the estimated costs attributable to each user group. Table 5 introduces the value principle and attempts to measure the economic value derived by each user group from its use of the airways.

In CAA's view, neither of these alternatives provides a completely realistic basis for determining the cost responsibility of the airway users. The allocation based on unweighted use does not differentiate between aircraft and disregards the value received and ability-to-pay principles. Recovery of costs on this basis appears to place an unduly heavy burden on general aviation and would undoubtedly have a detrimental effect on the growth and development of this segment of domestic civil aviation. On the other hand, it does not appear feasible to place complete emphasis on the value concept. Value derived is a fairly intangible concept which cannot be determined as precisely as costs. Moreover, since the airways are, for all practical purposes, a government monopoly and must be utilized by the civil aircraft operators, there is actually no real commercial test of what charges the traffic will bear.

The primary value of the two cost allocations is that they provide a good test of the basic equity of the two most satisfactory charging schemes, the gallonage charge and the combination of the gross ton-mile charge and graduated registration fee, as regards the two civil airway user groups. For example, assuming that during the fiscal year 1952 a 2 cents per gallon airway user charge had been in effect, an estimated total of \$13.6 million would have been collected from the domestic civil users of the airways, of which approximately 80 percent would have been paid by the scheduled airlines and the remaining 20 percent by the other civil user groups. Comparatively, under the allocation made on the basis of direct use, the scheduled airlines' share of the airway costs attributable to civil use is approximately 57 percent, while the share of the other civil group is 43 percent. Under the cost allocation based on value of service, the scheduled airlines' share is approximately 95 percent while that of the other civil group is 5 percent.

**TABLE 6 — COMPARISON OF GALLONAGE PAYMENTS WITH CIVIL USER GROUPS' PROPORTIONATE SHARE OF AIRWAYS COSTS, FISCAL YEAR 1952**

<i>User group</i>	<i>Ratio of Civil Payments (Based on actual gasoline consumption)</i>	<i>Proportion of Total Civil Share of Annual Costs of Airways</i>	
		<i>Allocation on basis of use</i>	<i>Allocation on basis of value of service</i>
Scheduled Air Carrier . . . .	80%	57%	95%
Other Civil . . . . .	20%	43%	5%
<b>TOTAL . . . . .</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Table 6 indicates that proportionate payments by the other civil user groups under the gallonage charge would fall within the range of the two illustrative cost allocations. Since the allocation of common costs cannot be made with mathematical accuracy, we therefore conclude that the gallonage charge is reasonably related both to the cost of providing the airways system and to the economic value derived from these aids and services and, therefore, meets the criteria for a fair and equitable user charge.

Since the combination charging technique discussed in this report is inherently flexible and either the gross ton-mile rate or the range of aircraft registration fees can be adjusted independently of each other, there is no difficulty in relating the proportionate payments made by each user group under this charging method to that group's fairly allocated share of the total airways cost responsibility.

#### *The General Public Interest and Military Standby Value*

One question arising under the allocation problem is whether any specific portion of the annual costs of the airways should be assigned to the general taxpayer because of broad public interest in the development of civil aviation and the potential need of the military for airways facilities and services in time of national emergency. It has been claimed that because military requirements have been an important consideration in the design and development of the federal airways system, particularly since the adoption of the RTCA program for a common civil-military system, and because the military not only receives operational priorities during wartime, but also can instantly commandeer all or any part of the system for its exclusive use, a specific military standby value should be established for the airways and made a cost of national security. This would then reduce the cost allocable to the actual users.

While all federal expenditures on transportation facilities are assumed to be in the public interest, the adoption of a user charge program presumes that where identifiable groups receive specific benefits and use from such facilities, the costs thereof will be allocated directly to such users and beneficiaries. Moreover, this proposition overlooks the fact that society benefits from almost every public or private expenditure whether for an automobile plant or for highways or airways. Thus, the funds expended on the airways could have been used for alternative purposes which may also provide great public benefits. To determine the net public gain from the investment in airways, it is necessary therefore, to weigh the general benefits derived from the airways system against the general benefits that would obtain from any of the possible alternative uses in which these funds might be employed. Such estimation of potential benefits is an almost impossible task and in practice would have to be made on a purely arbitrary basis.

The concept of a specific military standby value for transportation facilities and services furnished by the Federal Government has been

examined and rejected by competent authority including the Federal Coordinator of Transportation, the Board of Investigation and Research and the 1953 staff study of the Department of Commerce on user charges. These studies point out that such facilities are by no means unique in contributing to the national security and that in modern total war all of our resources and industries, including the transportation system, become instruments of national defense which are at the disposal of the military services.

While it is recognized that the Federal Government has power to commandeer the airway system, and during World War II actually took over part of the fleet of the airlines as well as the aircraft they had on order, the government has been given and has exercised similar authority over other forms of transportation as shown by the following examples:

1. Under the Federal Possession and Control Act of 1916 the government was empowered in time of war to take possession and assume control of any system or systems of transportation, or any part thereof, and to utilize the same to the exclusion of all other traffic for the transportation of troops and war material or for such other purposes connected with the emergency as might be desirable.<sup>2</sup>
2. On December 28, 1917, following the entrance of the United States into World War I, by virtue of a proclamation by the President, the operation of the railroads was taken over by the government acting through the United States Railroad Administration which had been created for that purpose. The railroads remained under federal control and operation until March 1, 1920. (During the Civil War, the government had also taken over the railroads' operation.)
3. Under the Interstate Commerce Act the railroads must give preference and precedence in time of war or threatened war to military over all other traffic. No compensation is made for obeying these orders.<sup>3</sup> The Second War Powers Act, 1942, extended this authority to motor carriers.
4. During World War II, the military commandeered nearly all Pullman car equipment when troops were redeployed from Europe to Japan. Later, when troops were brought back from Japan, Pullman cars were commandeered and concentrated on the West Coast so that military personnel could be brought home rapidly.
5. Under the Federal Civil Defense Act of 1950 the Federal Civil Defense Administration is authorized, upon declaration of a state of civil defense emergency by the President or Congress, to commandeer whatever transportation facilities or systems are deemed necessary for the purposes of civil defense. On the basis of this authority, certain states and cities have designated highways within their jurisdictions as civil defense highways, which will be closed to civil traffic in time of emergency.

These examples are indicative of the military standby value of our entire transportation system. It would appear, therefore, that there is basically no greater justification for subsidizing air transportation as a defense measure through federal provision of facilities than there is for subsidization of any essential industry or activity which may produce material or services useful in time of war. The BIR report concluded that the fact that public transportation facilities serve defense ends as well as the needs of commerce is no reason for relieving the direct users of such facilities from paying the costs which are

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<sup>2</sup> United States Code, Title 10, Section 1361.

<sup>3</sup> *Ibid*, Section 1362.

attributable to their use for immediately commercial or private purposes.<sup>4</sup>

This position was recognized by the War Department in 1921 with respect to highways<sup>5</sup> and has been followed in practice in the case of the Panama Canal, and has been proposed in connection with the St. Lawrence Seaway proposal. Accordingly, it appears inappropriate in principle to deduct any arbitrary sum for military standby value from the annual costs of the airways which are subject to cost recovery.

However, this does not mean that the government through the general taxpayer will not be responsible for all actual use made by the military of these facilities. It is recognized that in time of war or national emergency military use of the airways will predominate and during such periods the military will, of course, be responsible for the major share of the costs incurred. Moreover, civil users are not considered responsible for the added costs of facilities which are specifically provided for defense purposes and which are not justifiable by usual economic standards. The excess of military requirements over normal civilian needs, usually referred to as the "military overlay" would logically be borne by the general taxpayer. The cost base used in this report does not include the cost of any airway facilities which have been installed by the military or in which extra cost has been specifically incurred for defense purposes, such as the program for security control of aircraft.

#### CONSIDERATION OF PRESENT FEDERAL GASOLINE EXCISE TAX AS DE FACTO USER CHARGE

At the present time the Federal Government levies a number of excise taxes in the field of transportation which in recent years have been increasingly related to federal aid to transportation. The linkage concept was first limited to taxes in the automotive field, but more recently, has been put forward by the scheduled airline industry with respect to the 2 cents per gallon excise tax on aviation gasoline.<sup>6</sup> In brief, the scheduled airline claim that federal and state gasoline taxes paid by motor vehicles have always been publicly regarded as charges to users to defray the costs of our highway program; therefore, the tax on aviation gasoline is in reality a user charge which should be considered as an offset to the cost of providing the federal airways system.

While this position has received considerable unofficial support and state practice provides a substantial precedent, federal policy, particularly as enunciated by the Treasury Department and the Bu-

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<sup>4</sup> *Public Aids to Transportation*, 79th Congress, 1st Session, House Document No. 159, pp. 90-91.

<sup>5</sup> *Ibid.*

<sup>6</sup> Air Transport Association of America Press Release, *Report by Ralph Rechel*, ATA Economic Research Department, to the Meeting of the ATA Public Relations Advisory Committee in Los Angeles, Jan. 27, 1953 and American Airlines, Inc., *Annual Report*, 1952, p. 8.

reau of the Budget, has traditionally opposed the dedication of excise tax revenues for specific purposes.

*State Precedents in the Highway Field.* The states generally consider their motor fuel taxes and motor vehicle fees as highway user charges and the revenues obtained from these sources are earmarked for highway purposes in 44 states and the District of Columbia. Moreover, in most states, taxes paid by non-highway users incident to the sale of gasoline may be refunded in whole or in part. On the other hand, some states divert portions of road user tax revenues to non-highway uses. State highway officials have strongly favored the dedication of these funds because it assures them a predictable source of income on which they can plan their future programs. Moreover, the success of earmarking in the states prompted the American Association of State Highway Officials at its annual meeting in December 1952 to adopt a resolution which requested Congress to increase federal aid to highways to the full amount collected through the federal tax on gasoline.

*Federal Policy.* Federal policy in the past as expressed by both the Treasury Department and the Bureau of the Budget has strongly opposed consideration of present excise taxes paid by users of federally-provided aids to transportation as off-sets to a program of user charges. Excise taxes have been imposed on various commodities and services in recent years to provide revenue for the government and are treated as general fund receipts of the Treasury. As such, they are used to meet all expenses of the government and are not dedicated for specific purposes. To earmark the present federal aviation gasoline tax would therefore represent a significant departure from accepted fiscal policy. However, it should be recognized that it has been common practice to compare the amounts received from highway users with expenditures on highways and highway users have claimed with considerable support that they are meeting their fair share of highway costs.

The federal gasoline tax was introduced in the depression of 1932 as an emergency revenue measure and imposed on all vehicles regardless of how they were used. It has been subsequently increased to its present 2c per gallon level to meet general revenue needs and without any consideration of its relation to highway or airway expenditures. In fact, receipts from the gasoline tax at 1½c per gallon already exceeded the amount spent on the highway and airway programs, a clear indication that it was not the need for funds for these programs which prompted Congress to raise the rate to 2 cents.

In this connection, it should be noted that the Congress, in enacting a tax on diesel fuel in the Revenue Act of 1951, did not include all transportation uses of diesel but restricted its application to use in highway motor vehicles. This action has been claimed as indicative of a tendency on the part of the Congress to regard this tax as a highway user charge rather than as a general revenue measure. How-

ever, according to the reports of the House Committee on Ways and Means, and the Senate Committee on Finance,<sup>7</sup> the purpose of the diesel excise was to tax diesel fuel used on highways on the same basis as gasoline in order to prevent discrimination against vehicles powered by gasoline. No mention is made in these reports of the relation of the diesel tax to user charges.

Receipts from the gasoline excise tax have increased sharply and totaled approximately \$713 million in the fiscal year ended June 30, 1952, of which only about \$14 million was collected on aviation fuel. Earmarking of these funds specifically for highways or airways would therefore mean a sizeable diversion of the general revenues of the Treasury. The magnitude of the sums involved indicates that consideration of the aviation gasoline tax as an off-set to airway user charges cannot be made apart from the question of the motor vehicle gasoline tax and its relation to highway expenditures.

The position of the Treasury Department respecting the dedication of revenues from the aviation gasoline tax and the general relationship of user charges to the tax system has been summarized as follows:

"The Federal Government now charges users for a variety of services. The charge is ordinarily related to a specific service rendered by a governmental agency to persons or groups who can readily be identified. These charges are outside the field of taxation. They are usually collected as a fee or charge as a price by the federal agency providing the service. Passport fees collected by the Department of State, meat grading fees collected by the Department of Agriculture, national parks' entrance charges, and sales of postage stamps by the Post Office Department are examples. They are generally based on the consideration that the Government is providing a special and clearly discernible service to private beneficiaries who (rather than the taxpaying public in general) can appropriately be charged at least a portion of the costs incurred.

"While the Treasury Department concurs in the imposition of user charges where the benefit principle is applicable and practicable, it does not favor the use of the federal tax system to collect revenues which shall be labeled 'user charges.' The very nature of user charges requires that they be readjusted from time to time to parallel changes in uses made of federally-provided facilities. This requirement will generally necessitate more detailed classifications, exceptions, etc., than can adequately be administered within the framework of the generally applicable tax laws. The primary considerations which govern the imposition of general taxes relate to revenue requirements, equity, and economic conditions prevailing generally and in specific industries rather than to changes in the quantity and quality of services which particular branches of the government may provide at different times to specific groups.

"A related consideration is that of earmarking of revenues. The Treasury has consistently opposed the earmarking of revenues for specific purposes because it represents a discredited fiscal practice. Earmarking is equivalent to a permanent indefinite appropriation and is contrary to the policy established by the Congress in the Permanent Appropriation Repeal Act of 1934. A formal system of earmarking prevents effective budgetary control by restricting the freedom of the Congress to adapt appropriations to changes in needs of the programs affected.

"Experience with the motor fuel tax illustrates the nature of the problem. Although the Federal gasoline tax was imposed for purposes of general revenue, it is frequently looked upon as a user charge even though both historically and at present the amount of federal expenditures on

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<sup>7</sup> Report of the Committee on Ways and Means, House of Representatives, to accompany H.R. 4473, *Revenue Act of 1951*, p. 43; Report of the Committee on Finance, United States Senate, to accompany H.R. 4473, *The Revenue Act of 1951*, p. 97 (82nd Congress, 1st Session).

highway aid is determined on the basis of requirements and without regard to the yield of the gasoline tax.

"Technical considerations of this character have led this department to the conclusion that the development of user charges for federally-provided facilities should be sought outside the tax system, to avoid the creation of conflicts between the requirement that user charges be adjusted frequently and as nearly as practicable to benefits bestowed and a totally different group of criteria which of necessity governs taxation for general revenue purposes."<sup>8</sup>

This position was recently confirmed by the Treasury Department and the Bureau of the Budget in commenting on S. 216, 83rd Congress, the Magnuson Bill, which provides for dedication of the proceeds of manufacturers' excise taxes on automobiles, tires and tubes, gasoline and lubricating oil for the purposes of the Federal Aid Road Act.

#### TIMING AND LEVEL OF CHARGES

Domestic civil aviation as a whole has now reached the level of economic maturity at which it can begin to make a reasonable contribution toward meeting the annual costs of the federal airways system. The continued expansion in air traffic volume, the improved financial position of the air carriers and their decreasing reliance on direct subsidy, and the improving condition of the major segments of general aviation are evidence that the great bulk of the airway users have progressed to the point where they no longer require the free provision of airways services.

The first phase of any airway user charge program should, however, provide for less than full cost recovery, in order that domestic civil aviation may assume these additional costs with a minimum degree of difficulty and without seriously hampering its future growth. It should also recognize the marginal position of many of the medium-sized airlines and the all-cargo carriers and take into account the fact that the smaller carriers, particularly the local service airlines, will continue to require direct subsidies from the CAB for an indefinite period of time.

With respect to such carriers, user charges would not result in any net return for the government, since they would probably require a corresponding increase in subsidy. The program discussed above would appear to minimize the so-called "bookkeeping" aspects of user charges, however, since the great bulk of the country's airline business is done by carriers receiving no subsidy from the CAB. Specifically, 96 percent of the revenue ton-miles were flown in the fiscal year 1953 by such carriers.

In the general aviation sector the bulk of the payments would be made by the operators of the larger aircraft such as the irregular and other commercial carriers, corporate-business flyers, and individual

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<sup>8</sup> Statement by the Tax Advisory Staff, Office of the Secretary of the Treasury submitted to the Working Group of the Transportation Council, Department of Commerce, 1952 and quoted in *Charges for Private Use of Federally-Provided Transportation Services and Facilities*, U. S. Department of Commerce, Washington, 1953, p. 159.

owners of larger aircraft. The small plane operators would pay only a nominal annual charge which is not expected to be unduly burdensome and should be well within their ability to pay. Ample precedent for a gradual increase in user payments exists in other branches of the transportation industry which have been the recipients of public aid.

It should be emphasized that, in such a dynamic industry as civil aviation, user charge collections would be fluid rather than static. The long-range objective of any user charge program as the industry expands and moves farther toward self-sufficiency, should be to increase civil user payments up to the users' fairly allocated share of the annual costs of the airways system. Depending upon the relationship of future user charge collections (which will be a function of traffic growth) and the annual costs of the domestic airways system, periodic upward or downward adjustments might be required in the user charge rates.

#### *Illustrative Scales of Charges*

In order to indicate the range of user charge collections at alternative rate levels, illustrative scales of charges have been calculated below for both the gallonage charge and the combination of the gross ton-mile charge and graduated aircraft registration fee. These computations have been made on the basis of projected aviation activity and gasoline consumption during the fiscal year 1955.

*Charges on Aviation Gasoline.* Aviation gasoline consumed by domestically operated aircraft has risen sharply during the post World War II period — from a total of approximately 334 million gallons in 1946 to approximately 740 million gallons in 1952. Consumption during 1953 is expected, on the basis of data for the first half of the year, to be approximately 862 million gallons. By the fiscal year 1955, domestic consumption is estimated to reach approximately 1,010 million gallons, of which approximately 850 million gallons will be consumed by the scheduled airlines and 160 million gallons by other civil users. The estimate assumes a continued expansion in air carrier activity.

Table 7 shows estimated receipts during the fiscal year 1955 at charges of 1½¢, 2¢, and 2½¢ per gallon.

TABLE 7 — ESTIMATED RECEIPTS FROM VARIOUS GALLONAGE CHARGES IMPOSED ON DOMESTIC CIVIL AVIATION GASOLINE, FISCAL YEAR 1955

<i>User Group</i>	<i>Estimated Gasoline Consumption (millions of gallons)</i>	<i>Estimated Receipts</i>		
		<i>At 1½¢ per gallon</i>	<i>At 2¢ per gallon</i>	<i>At 2½¢ per gallon</i>
Scheduled Air				
Carrier .....	850	\$12,750,000	\$17,000,000	\$21,250,000
Other Civil .....	160	2,400,000	3,200,000	4,000,000
Total Receipts...	1,010	15,150,000	20,200,000	25,250,000

*Gross Ton-Mile Charge-Graduated Aircraft Registration Fee.* Determination of the estimated receipt from the alternative charging technique, the combination of a gross ton-mile charge and the graduated aircraft registration fee, requires an estimate of the gross ton-miles flown by all aircraft over 4,500 pounds maximum gross take-off weight and the number of general aviation aircraft weighing up to 4,500 pounds.

Available data indicate that by the fiscal year 1955 gross ton-miles flown by the scheduled air carriers will increase approximately 60 percent over the volume flown in the fiscal year 1952 to an estimated total of approximately 22 billion gross ton-miles. Other civil aircraft weighing over 4,500 pounds are expected to increase their activity approximately over the 1951 level, the last year for which such data are available, to an estimated 1,200 billion gross ton-miles in fiscal 1955.

Little change is expected in the next year in the number of general aviation aircraft weighing up to 4,500 pounds. As of January 1, 1953, there were approximately 80,000 such aircraft registered with CAA. However, only some 50,000 of these planes were considered active. Accordingly, the estimated receipts shown in Table 9 are based on the number of active aircraft in the various weight categories as of January 1, 1953.

TABLE 8 — ESTIMATED RECEIPTS FROM VARIOUS GROSS TON-MILE CHARGES IMPOSED ON AIRCRAFT WEIGHING OVER 4,500 POUNDS MAXIMUM GROSS TAKE-OFF WEIGHT, FISCAL YEAR 1955

User group	Estimated gross ton-miles (millions)	Estimated Receipts		
		At ½ mill per gross ton-mile	At 8/10 mill per gross ton-mile	At 1 mill per gross ton-mile
Scheduled Air				
Carrier .....	22,000	\$11,000,000	\$17,600,000	\$22,000,000
Other Civil .....	1,200	600,000	960,000	1,200,000
Total Receipts...	23,200	11,600,000	18,560,000	23,200,000

TABLE 9 — ESTIMATED RECEIPTS FROM AIRCRAFT REGISTRATION FEES IMPOSED ON ALL AIRCRAFT WEIGHING UP TO 4,500 POUNDS MAXIMUM GROSS TAKE-OFF WEIGHT, FISCAL YEAR 1955

Weight category (pounds)	Number of active aircraft	Annual fee per aircraft	Estimated total receipts	Annual fee per aircraft	Estimated total receipts
0-1,500...	26,567	\$ 5.00	\$132,835	\$10	\$ 265,670
1,501-2,500...	14,030	10.00	140,300	25	350,750
2,501-4,500...	9,171	25.00	229,275	50	458,550
Total .....	49,768	—	\$502,410	—	\$1,074,970

Table 8 shows estimated receipts during the fiscal year 1955 from alternative rates of ½ mill, 8/10 mill and one mill per gross ton-mile from the scheduled air carriers and other civil aircraft weighing over 4,500 pounds. Table 9 shows two alternative scales of graduated aircraft registration fees for aircraft weighing up to 4,500 pounds, the lower scale ranging from \$5 to \$25 and the higher from \$10 to \$50.

## ADMINISTRATION OF CHARGES AND LEGISLATIVE REQUIREMENTS

*Administrative Problems.* The administration of a system of airway user charges imposed on aviation fuel appears to be relatively simple. Charges could be collected at the refinery level by the less than 20 oil companies which now sell aviation fuel. One of the real administrative advantages of this system is that the oil companies already are operating revenue collection systems for the Federal Government and the additional workload in connection with aviation gasoline would be negligible. This method of collection would utilize already existing channels of communication between the industry and the government. The charge would, of course, be passed on through the various levels of distribution to the ultimate consumer. It has been suggested that CAA might act as the collection agency for user charges or participate in some phases of this activity. This appears to be unnecessary as it adds another, and unnecessary, collection agency with which the petroleum companies would have to deal. CAA would have to establish a collection unit in the Accounting Division which would be much more expensive than utilizing the established Treasury facilities. It seems desirable to keep the costs of collection as small as possible.

Administration of the alternative charging technique, the combination gross ton-mile charge-graduated aircraft registration fee system, would present considerably greater difficulty. In order to minimize the administrative burden as much as possible, control over this program, could be centralized in the Washington office of CAA. All payments by airway users could be made directly to Washington, thus eliminating the need for collections in the field by CAA agents. The program could be superimposed on and administered through expansion of CAA's present aircraft recordation system.

Administration of the registration fee would be complicated for a considerable period because of the inclusion in the CAA registration files of approximately 30,000 aircraft classified as inactive. It would be necessary definitely to establish the status of these planes in order to distinguish between those which are inactive and those which are delinquent.

Payments of gross-ton-mile charges on aircraft weighing over 4,500 pounds could be made on a monthly, quarterly or annual basis depending on the volume of activity and could be made due and payable not later than one month after the close of the period to which they apply. Payments could be accompanied by an affidavit certifying to the volume of operations on which the payment is based.

The management of a user charge program would raise a number of additional administrative problems for the CAA. The first concerns the airways utilization statistics upon which the cost allocations in this report are based. Because of budgetary limitations of the Office of Federal Airways is planning to eliminate a number of the statistical series which is it now gathering beginning with the fiscal year 1955. In order

that no essential data are discarded it is important that this program be closely integrated with the needs of the user charge program. The sound management of a system of user charges will have continuing need for accurate data concerning the utilization of the airways.

A second problem concerns the need for accurate cost data. Heretofore CAA records have been developed primarily to control the expenditure of appropriated funds rather than to determine costs. However, they have provided estimates of annual costs which are sufficiently accurate for the purposes of this report since substantially less than full cost recovery is proposed here. If a user charge program is inaugurated, and particularly at such time as it moves closer to full cost recovery, more precise determination of costs will be required, and consideration should be given to the establishment of a complete business-type accounting system for the airways.

The General Accounting Office has set up such a system for the civil functions of the Corps of Engineers, Department of the Army and has offered to assist CAA in establishing a similar system. The cost of the necessary accounting system must be recognized as an integral part of the over-all administrative expense of a quasi-commercial operation of the federal airways system as it proposed in this report.

*Legislative Requirements.* It would seem desirable to seek specific legislative authority for any user charge program. Although the Secretary of Commerce already has rather broad authority to levy fees and charges for services rendered by the Department, and this authority was strengthened by Title V of the Independent Offices Appropriations Act of 1952, there is a legal question as to whether existing authority would be adequate for the type of indirect charges discussed in this study. In view of the far-reaching implications of the proposed user charge program, it would appear desirable, therefore, for the Congress to give specific and detailed consideration to the problem and to fix the appropriate charges. The affected airway user groups would thus be assured of an opportunity to present their views to the Congress on all phases of the proposed program.

CAA's traditional position has been that an airway user charge program should be treated as part of an over-all policy of user charges for all federally-provided transportation facilities and services. Accordingly, it is our recommendation that any draft legislation include an expression of Congressional policy favoring user charges for such facilities and services. We would also propose that, in addition to levying specific airway user charges the Congress direct each federal agency providing transportation facilities and services or administering grants-in aid for transportation purposes to develop and submit to it within one year a program of user charges therefor, to implement the aforementioned general policy statement. In this connection, an affirmative demonstration of the lack of feasibility or desirability of such charges might well be considered compliance with this directive.