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PUBLIC FINANCE OF AIR TRANSPORTATION
A STUDY OF TAXES AND PUBLIC EXPENDITURES
IN RELATION TO A DEVELOPING INDUSTRY

PUBLIC FINANCE OF AIR TRANSPORTATION

A STUDY OF
TAXATION AND PUBLIC EXPENDITURES IN
RELATION TO A DEVELOPING INDUSTRY

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FOREWORD

The domestic air-transport industry is a relatively young and rapidly growing addition to our domestic transport system. As a segment of our transportation system, it is subject to many of the problems of financing and taxation common to other modes of transportation, and to other new and growing industries. In addition, however, there are many problems peculiar to the air-transport industry, arising from characteristic differences in air transportation from other modes of transportation, which call for new approaches and new solutions.

In recent years studies have been made of various aspects of the air-transport industry by committees representing the industry, by committees of the Congress, and by the Federal Agency having to do with civil aviation. The factual data in this study are taken largely from these more or less official reports, and the author has used such data as a means of indicating the magnitude of the problem and its nature, and in indicating the areas of peculiar confusion.

The findings and recommendations represent the author's judgment based on his analysis of the requirements of the industry and of the public interest.

VIVA BOOTHE, *Director*
The Bureau of Business Research

PREFACE

Tax studies have usually been either studies of a particular type of tax, such as the sales tax or the income tax, or they have been an analysis of the revenue system of a particular governmental unit. These studies have been most useful in that they provide both the student and the practical man of affairs with convenient data regarding the manner in which various taxes have been used and the results which have been observed as arising from various types of uses. The information and analyses provided by these studies have been of vital importance for the determination of intelligent action in fiscal affairs. In addition, occasionally a study of the tax system of a foreign country is completed. Very seldom have students of taxation broken away from this, the traditional pattern.

During the past few years there has occurred an unprecedented increase in tax rates and governmental receipts. This has brought in its wake, the realization that the impact upon individuals and businesses of these increased rates must be terrific and that undoubtedly something big is happening to the individuals, groups, and industries bearing the burden of these levies. This has stimulated new studies aimed at gathering together information regarding the results of specific taxes or the effects of a tax system *upon various segments of the economy*. These more specialized studies were preceded in time, and it appears that it was necessary that such be the case, by a general interest and a resulting analysis of the effects of fiscal policy upon the whole economy. These studies of a gross nature served the purpose of pointing out the places where fiscal policy was apt to have the greatest effect, but the analysis was limited by a dearth of specialized information regarding the effects of specific taxes and specific tax rates upon these vital sections of the economy. One important portion of the economy where tax rates are believed to have an important effect is that part composed of new and growing industries.

The Federal government, several state governments, and numerous universities and trade organizations have, within the past few years, inaugurated studies aimed at giving additional information regarding the tax burden borne by particular industries and the effect which this burden has had upon the development of the particular industry. Also, in some cases a partial economic analysis based upon the new relationships developed has been undertaken. This study falls within this latter category.

The domestic air-transport industry has been selected for analysis in this study. The decision was based upon the availability of data, the fact that the industry is new and growing rapidly, and the additional fact that considerable interest has developed in Congress and in the air-transport industry regarding the tax burden which the industry should bear and the manner in which it should be taxed. The taxation of transportation enterprises has been a problem of many difficulties and perplexities, many of which have been primarily of a legal nature. However, many times casual observation of problems has pointed to a legal explanation while a more careful study might indicate an economic cause. The attempts to tax the domestic air-transport industry have brought forth the same problems, with different emphasis, that were experienced and are still being encountered in the taxation of the older types of transportation. This study will examine the taxation problems peculiar to the transportation industry that have, also, become prominent in the levying of taxes upon the domestic airlines.

The importance of these special transportation tax problems will not be minimized; however, emphasis will be placed upon the tax problems peculiar to the air-transport industry—particularly as a young and growing industry. Thus this study is in the nature of a two-fold analysis, dealing with the constantly re-occurring transportation tax problems as well as with the unique problems arising when a rapidly growing industry comes under the impact of the prevailing high tax rates. The dual nature of the study—so to speak—will develop hand-in-hand and particular sections will not be set aside for the analysis of problems peculiar to a growing industry and other sections reserved for the discus-

sion of special transportation tax problems. Rather, the study will deal with the tax problems of the domestic airlines, some of which will be recognized as general transportation tax problems, others as peculiar to the air-transport industry and some, as related to rapidly growing new industrial undertakings. This type of development is the only practical one, for some taxes, for example, the gasoline tax, are not only closely associated with typical transportation tax problems but also have important relationships to the special tax difficulties of new and growing enterprises.

When thinking of the taxation of domestic airlines, it is necessary not only to consider the effect of the tax collections but also of the benefits which the industry has received from government expenditures. The air-transport industry is still a subsidized industry. This, however, has always been the general situation in the early development of various types of transportation facilities, and is not an unique characteristic of air transportation. The question of subsidy continuation, the extent to which subsidies have been granted, the estimated amount of government subsidy, and the future policy toward government aids is an important part of any consideration of the taxation of domestic air-transport companies.

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PUBLIC FINANCE OF AIR TRANSPORTATION

CHAPTER I

TAXES

Preliminary to the more detailed analysis of the principal taxes paid by the domestic airlines, each of which is treated in a separate chapter, there is here summarized the available statistical data as to the total amount of taxes paid by the domestic airlines in relation to the growth in assets and profits for the period 1943-1945, the tax burden of individual airlines, the proportion of taxes paid going to federal and state and local governments, and the changes that have occurred in the relative importance of the various types of taxes during the period since 1938.

TAXES RELATIVE TO ASSETS AND PROFITS

ALL DOMESTIC AIRLINES

The depreciated asset total of the domestic airlines is perhaps the best available measure of the growth of the industry and of the several companies. As is indicated by Table I, the growth in the depreciated assets of all companies during the three years ending 1945 was phenomenal, from \$156 million in 1943 to \$249 million in 1945, an increase of 60 per cent. It is estimated that the expansion in 1946 will be much greater than any which has taken place in the past. It is expected that this will be true both absolutely and relatively. For example, the total depreciated assets of American Airlines increased from \$45,857,964 as of December 31, 1945, to \$72,622,927 as of May 31, 1946, an increase of about 60 per cent for this five-month period.¹

The profits of the domestic airlines have grown along with the increase in assets; however, the increase has not been as great nor has the rise been as steady. It is expected that airline profits in 1946 will be considerably below the 1945 total. This fact will not be due to shortage of traffic but rather to unusually heavy expenses

¹ Calculated from Civil Aeronautics Board Form 2780.

resulting from the rapid program of expansion. American Airlines estimates a net loss of \$443,105 for the first five months of 1946.²

Along with the growth of total depreciated assets and profits has gone a steady growth in the total tax liability of airlines (Tables 1 and 2). It is expected that total taxes for 1946 will be

TABLE I—DEPRECIATED ASSETS, PROFITS AFTER INCOME TAXES, AND TAXES PAID, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, 1943-1945

YEAR	TOTAL DEPRECIATED ASSETS		TOTAL PROFITS AFTER INCOME TAXES		TOTAL TAXES PAID		TAXES AS PER CENT OF DEPRECIATED ASSETS
	Amount (Dollars)	Per cent change from 1943	Amount (Dollars)	Per cent change from 1943	Amount (Dollars)	Per cent change from 1943	
1945	\$249,182,848	+60.1	\$16,920,268	+28.5	\$23,428,454	+26.7	9.4
1944	189,239,183	+21.6	18,759,919	+42.5	22,822,853	+23.5	12.1
1943	155,606,795	100.0	13,167,984	100.0	18,485,439	100.0	11.9

Source: 1943—Civil Aeronautics Board, *Multiple Taxation of Air Commerce* (1945) 79th Congress, First Session, H.D. 141, p. 75.

1944 and 1945—Table 2.

less than for 1945. This will be due largely to the fact that so large a portion of the taxes of the industry are corporate income taxes (Table 4) and to the indicated decreased profitability of the industry in 1946. However, the expected increase in gasoline consumed plus some increases in state gas taxes and state and local property taxes will tend to prevent as great a decrease in taxes as would otherwise be expected by a decrease in net income.

INDIVIDUAL DOMESTIC AIRLINES

A comparison based upon total-industry data fails to indicate the situation of individual firms. Obviously, there is a considerable variation in the rate of growth experienced by the different air-transport companies. Also, there is the expected difference in the ability of the various companies to meet tax assessments. As yet, sufficient study has not been made of the influence of taxes upon the development of particular companies or even of different

² *Ibid.* See Appendix B, Tables 1 through 5 for additional financial data.

TABLE 2—DEPRECIATED ASSETS, PROFITS AFTER INCOME TAXES, TOTAL TAXES PAID, AND TAXES PAID AS A PER CENT OF ASSETS AND OF PROFITS, SEVENTEEN INDIVIDUAL DOMESTIC AIR-TRANSPORT COMPANIES, 1944 AND 1945

COMPANY	DEPRECIATED ASSETS: Total (Dollars)		PROFITS AFTER INCOME TAXES (Dollars)		TOTAL TAXES PAID (Dollars)		TAXES PAID AS A PER CENT OF DEPRECIATED ASSETS		TAXES PAID AS A PER CENT OF PROFITS AFTER INCOME TAXES	
	1944	1945	1944	1945	1944	1945	1944	1945	1944	1945
	\$	\$	\$	\$	\$	\$				
All American	1,519,866	1,634,113	198,485	74,216	260,005	93,711	17.11	5.73	130.99	126.27
American	39,262,397	45,857,964	4,396,163	4,339,458	5,257,093	5,120,443	13.39	11.17	119.58	118.00
Braniff	8,059,355	9,117,391	861,868	849,838	790,476	636,841	9.13	6.98	91.72	74.94
Chicago & Southern	2,187,616	3,329,315	127,703	168,891	233,773	298,652	10.69	8.97	183.06	176.83
Colonial	906,908	1,835,439	—28,839	83,662	5,711	68,455	0.63	3.73		81.82
Continental	3,819,182	2,782,420	201,589	494,225	265,190	436,374	6.94	15.68	131.55	88.29
Delta	3,285,425	5,524,318	549,811	654,032	753,055	322,961	22.31	5.85	136.97	49.38
Eastern	25,507,760	31,515,709	1,499,338	2,126,294	4,851,029	6,905,005	19.02	22.10	323.54	327.57
Inland	670,066	674,333	—57,492	13,223	32,197	74,720	4.81	11.08		565.08
Mid-Continent	2,275,902	2,414,907	125,879	171,973	187,860	230,634	8.25	9.55	149.24	134.11
National	2,815,598	5,628,198	—28,807	68,578	88,598	265,612	3.15	4.72		387.31
Northeast	2,344,131	2,789,198	—77,042	—165,368	27,016	55,587	1.15	1.99		
Northwest	8,508,259	13,119,413	635,466	928,708	744,563	1,048,447	8.75	7.99	117.17	112.89
Pennsylvania Central	6,260,525	17,842,121	404,636	441,467	537,217	662,904	8.58	3.72	132.77	150.16
Transcon. & Western	26,194,779	45,758,409	2,741,088	1,806,345	2,740,038	2,066,320	10.46	4.52	99.96	114.39
United	51,154,158	55,492,191	7,024,463	4,668,824	5,781,558	4,759,623	11.30	8.58	82.31	101.94
Western	3,867,256	3,867,256	185,610	195,902	267,474	322,165	6.92	8.33	144.11	164.45
Total	\$189,239,183	\$249,182,848	\$18,759,919	\$16,920,268	\$22,822,853	\$23,428,454	12.06	9.40	121.66	138.46

Source: 1944—Civil Aeronautics Board, *Annual Airline Statistics* (1944); 1945—Carrier's reports, December, 1945, CAB Form 2780.

industries. At this time only inferences can be made regarding the influence of particular taxes and tax rates upon the decisions of controllers of business enterprises.³

Table 2 contains data for the years 1944 and 1945 regarding the profits after income taxes of the seventeen domestic airlines, the total taxes paid by each company, and taxes as a per cent of assets and of profits after income taxes. When all of the domestic airlines are lumped together, taxes are 138.46 per cent of profits for 1945, and 121.66 per cent in 1944. There is, however, a tremendous variation from company to company. For example, in 1945 taxes paid by National Airlines were 387.31 per cent of total profits after income taxes while taxes were only 49.38 per cent of the profits earned by the Delta Airlines. Of the big four Airlines (American, Eastern, TWA, and United) taxes as a percentage of profits are considerably greater for Eastern Airlines than for the other three. Eastern Airlines' profits after income taxes were \$2,126,294 in 1945 and their total tax bill was \$6,965,005 or 327.57 per cent of profits after income taxes. The profits of United for the same period were \$4,668,824 and their tax bill was only \$4,759,623 or nearly \$2 million less than Eastern's and only 101.94 per cent of total profits after income taxes. The total depreciated assets of Eastern were \$31,515,709 in 1945 and those of United \$55,492,191 for the same period (Table 2). In this case, tax levies appeared to have had the effect of leveling off a greater profit-making ability of Eastern.

The tax burden carried by the various airlines appears to be partially determined by the section of the nation in which the principal portion of their business is conducted. The tax burden for the Braniff Airlines and the Delta Airlines, the two well-established airlines in the southern section of the nation, was considerably below the average. This is true whether the tax burden is considered in relation to profits or total depreciated assets.

Thirteen of the seventeen airlines made a net profit during both the years 1944 and 1945. Of these thirteen, taxes for only five were a greater percentage of profits in 1945 than in 1944. How-

³ See pages 106-7 of this study for the opinions of Professor Hansen and Professor Groves. Also cf. Butters, J. Keith and Lintner, John, *Effect of Federal Taxes on Growing Enterprises*. (Harvard University Press, Boston, Massachusetts, 1945.)

ever, taxes as a per cent of profits of all the airlines were greater in 1945 than in 1944.

The profits after income taxes of the seventeen domestic airlines decreased from \$18,759,919 in 1944 to \$16,920,268 in 1945, but during the same period there was an increase in taxes paid of approximately \$1,605,601 (Table 2). The estimates of profits for 1946 are considerably below the 1945 total.⁴

Despite the fact that property has not been an important basis for taxation of the domestic airlines, the comparison of taxes paid with the total depreciated assets of domestic airlines is useful in a study of the relationship between growth and taxes.⁵ Table 2 shows the changes in the relationship between total taxes and total depreciated assets of the different domestic airlines in 1945 from 1944. A considerable variation is noticed between the different companies. For example in 1944, total taxes as a per cent of total depreciated assets varied from less than one per cent to over 22 per cent. The total taxes paid as a per cent of assets fluctuated rather widely for some of the smaller companies between 1944 and 1945. In the case of the larger companies the relationship remained much more constant.

The taxes paid by the larger domestic airlines were a greater percentage of their total assets than was the case of the smaller companies. This was true in both 1945 and 1944. Total taxes paid by the seventeen domestic airlines were a smaller percentage of the total depreciated assets in 1945 than in 1944. In 1945 taxes were but 9.40 per cent of assets, while in 1944 they were 12.06 per cent. This lower ratio which is the reverse of the trend indicated regarding profits was largely due to the reduced net earnings of 1945 despite an increase in assets of about \$60 million.

GROWTH OF TAXES SINCE 1938

FEDERAL, STATE AND LOCAL TAXES

The total taxes paid by the domestic airlines have increased continuously since 1938 when they were estimated to be \$1,719,000.

⁴ For the first five months of 1946, American Airlines indicated a loss of \$443,105 and Northwest Airlines, a loss of \$114,114.

⁵ See Chapter V titled "Property Tax," pp. 77-96.

Table 3 and Chart 1 show the continual increase and also the spectacular jump from 1941 to 1942 when the total tax bill of domestic airlines very nearly trebled. The total taxes paid, are,

TABLE 3—TOTAL TAXES PAID, PERCENTAGE DISTRIBUTION AND PERCENTAGE INCREASE FROM 1938, BY FEDERAL AND STATE AND LOCAL TAXES, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, 1938-1945

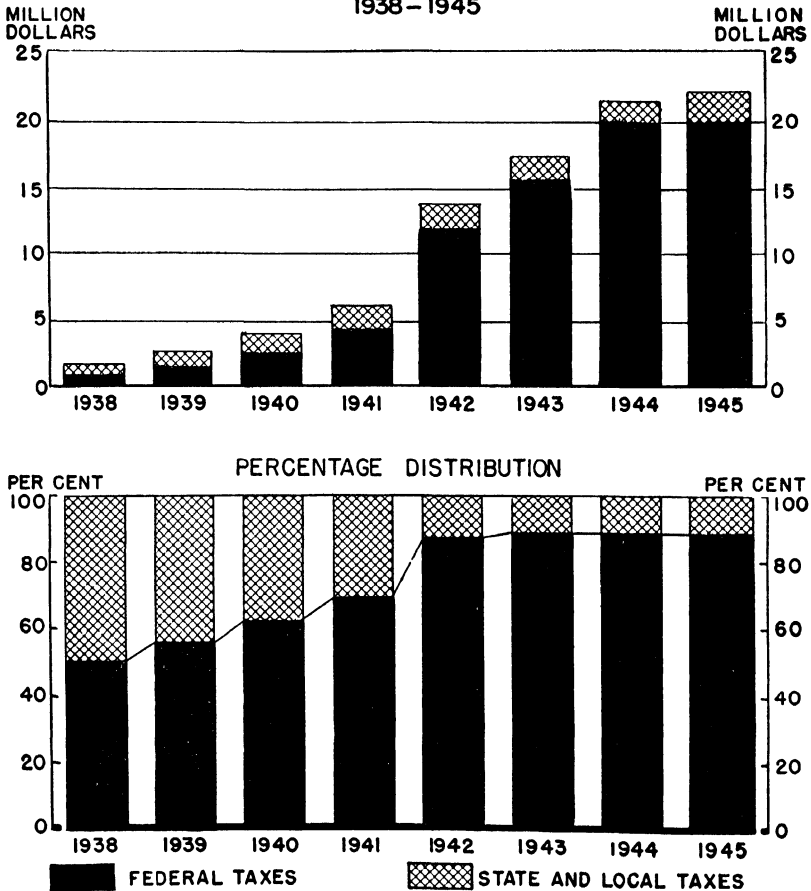
YEAR	FEDERAL	STATE AND LOCAL	TOTAL
AMOUNT OF TAXES PAID (<i>In dollars</i>)			
1938.....	\$ 874,000	\$ 845,000	\$ 1,719,000
1939.....	1,633,549	1,242,890	2,876,439
1940.....	2,781,174	1,636,823	4,417,997
1941.....	4,539,597	1,925,637	6,465,234
1942.....	12,736,796	1,900,913	14,637,709
1943.....	16,529,311	1,956,128	18,485,439
1944.....	20,403,631	2,419,222	22,822,853
1945.....	20,245,038	2,483,416	23,428,454
PERCENTAGE DISTRIBUTION			
1938.....	50.8	49.2	100.0
1939.....	56.8	43.2	100.0
1940.....	63.0	37.0	100.0
1941.....	70.2	29.8	100.0
1942.....	87.0	13.0	100.0
1943.....	89.4	10.6	100.0
1944.....	89.4	10.6	100.0
1945.....	89.4	10.6	100.0
PER CENT INCREASE FROM 1938 (1938 = 100)			
1938.....	100.0	100.0	100.0
1939.....	186.9	147.1	167.3
1940.....	318.2	193.7	257.0
1941.....	519.4	227.9	376.1
1942.....	1,457.3	225.0	851.5
1943.....	1,891.2	231.5	1,075.4
1944.....	2,334.5	286.3	1,327.7
1945.....	2,396.5	293.9	1,362.9

Source: 1938—Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, House Document, No. 160 (1944), pp. 315-316; 1939-1943—Civil Aeronautics Board, *Multiple Taxation of Air Commerce* (1945), 79th Congress, First Session, House Document No. 141, p. 75, 1944-1945: Totals—Civil Aeronautics Board Form 2780, Carriers' Monthly Reports. Breakdown in Federal and State Local collections for 1944 and 1945 calculated upon the basis of the percentage distribution in 1943—10.6 per cent State and Local; 89.4 per cent Federal.

of course, divided among the various levels of government. In 1938 the amounts paid to state and local governments were very nearly equal to the total Federal tax bill. Beginning with 1939, the proportion of total taxes going to the Federal government has

steadily increased. It is estimated that since 1943 the portion of total taxes paid to state and local governments is only about 11 per cent of the total. During the eight-year period for which data

CHART I — TOTAL TAXES PAID, BY FEDERAL, STATE, AND LOCAL TAXES, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, 1938 — 1945



Source: Table 3

are available, taxes paid to state and local governments increased by about 294 per cent, while taxes paid to the Federal government increased by about 2,397 per cent. This indicates, in an exaggerated fashion perhaps, the trend which generally took place during

the war period in the proportion of business taxes going to local governmental units and the amount going to the Federal government. The reasons for the relative decline in the taxes collected by local governmental units and the analysis of the portions of the various taxes going to the different governmental units is a major portion of this study. The analyses pertaining to the various aspects of the subject are to be found in the chapters dealing with specific taxes.

TABLE 4—TOTAL TAXES PAID, PERCENTAGE DISTRIBUTION AND PERCENTAGE INCREASE FROM 1938, BY TYPE OF TAX, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, 1938-1945

YEAR	TOTAL	INCOME	MOTOR FUEL	LUBRICATING OIL	ALL OTHER ^a
AMOUNT OF TAXES PAID (<i>In dollars</i>)					
1938.....	\$ 1,719,000	\$ 213,000	\$ 654,000	\$ 26,000	\$ 826,000
1939.....	2,876,439	838,198	906,628	29,494	1,102,119
1940.....	4,417,997	1,506,168	1,465,584	46,586	1,399,659
1941.....	6,465,234	2,642,776	2,011,817	54,267	1,756,374
1942.....	14,637,709	11,079,580	1,767,516	44,122	1,746,491
1943.....	18,485,439	14,552,357	1,772,687	57,324	2,103,071
1944.....	22,822,853	18,201,602	2,165,937	70,564	2,384,750
1945.....	23,428,454	17,131,996	3,166,141	102,195	3,028,122
PERCENTAGE DISTRIBUTION					
1938.....	100.0	12.4	38.0	1.5	48.1
1939.....	100.0	29.1	31.5	1.0	38.3
1940.....	100.0	34.1	33.2	1.1	31.7
1941.....	100.0	40.9	31.1	0.8	27.2
1942.....	100.0	75.7	12.1	0.3	11.9
1943.....	100.0	78.7	9.6	0.3	11.4
1944.....	100.0	79.8	9.5	0.3	10.4
1945.....	100.0	73.1	13.5	0.4	12.9
PER CENT INCREASE FROM 1938					
1938.....	100.0	100.0	100.0	100.0	100.0
1939.....	167.3	393.5	138.6	113.4	133.4
1940.....	257.0	707.1	224.1	179.2	169.5
1941.....	376.1	1,240.1	307.6	208.7	212.6
1942.....	851.5	5,201.7	270.3	169.7	211.4
1943.....	1,075.4	6,832.1	271.1	220.5	254.6
1944.....	1,327.7	8,545.4	331.2	271.4	288.7
1945.....	1,362.9	8,043.2	484.1	393.1	366.6

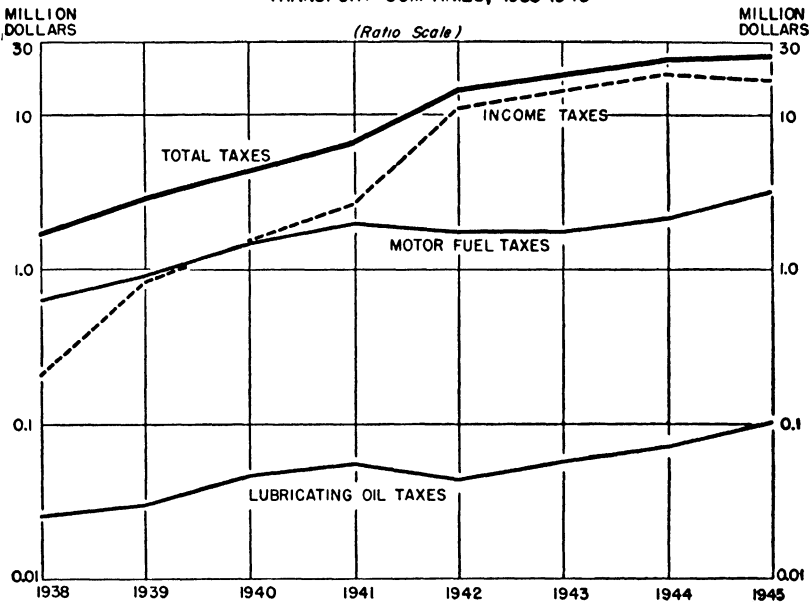
^a Composed largely of taxes available to local governments. Specifically, it includes: Federal social security taxes and the federal capital-stock tax, and local taxes—property taxes, unemployment compensation taxes, capital-stock taxes, gross-receipts taxes, aircraft licenses and all other taxes.

Source: Same as Table 3.

SHIFTS IN TYPES OF TAXES

The amount of taxes collected from the domestic airlines in 1942 was about equal to the total taxes collected during the previous four years. This increase was largely the result of the tremendous jump in income tax payments (Table 4 and Chart 2). Income taxes paid rose from \$2,642,776 in 1941 to \$11,079,580 in 1942, an increase of approximately 500 per cent. During the same

CHART 2— TOTAL TAXES PAID, BY TYPE OF TAX, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, 1938-1945



Source: Table 4

period, motor-fuel taxes, which indicate roughly the number of air miles flown, decreased from \$2,011,817 to \$1,767,516. Chapter VI contains an analysis of the corporate income tax as applied to domestic airlines and Chapter IV, an analysis of the taxation of aviation fuel.

Despite the change from year to year in the relative importance of the various taxes which constitute the total, it is useful to divide the 1938-1945 period into two periods: The first, 1938 through 1941, and the second, 1942 through 1945. The proportions of the

various taxes remained relatively the same from 1938 through 1941, although all types of taxes were increasing in amount from 1938 to 1942, with the increasing total collections of the income tax and the motor-fuel tax leading the way. After 1942, the income tax payments assumed a dominant role; they have maintained this relative position up to the present time.

The motor-fuel tax which is usually considered a tax available to the states is of a different character when applied to gasoline

TABLE 5—PASSENGER REVENUE MILES, MAIL TON-MILES, AIRCRAFT IN SERVICE, TOTAL TAXES PAID, AND TOTAL REVENUE OF DOMESTIC AIR-TRANSPORT COMPANIES, 1938-1945

Year	Passenger Revenue Miles (Number)	Mail Ton-miles (Number)	Aircraft in Service (Number)	Total Taxes Paid (Dollars)	Total Revenue (Dollars)
1938.....	476,402,280	7,422,860	253	\$ 1,719,000	\$ 42,297,310
1939.....	677,672,955	8,584,891	265	2,876,439	55,172,742
1940.....	1,041,173,558	10,035,638	358	4,417,997	75,709,214
1941.....	1,369,584,231	12,900,405	359	6,465,234	95,814,486
1942.....	1,398,042,146	21,066,627	179	14,637,709	106,110,733
1943.....	1,606,119,468	35,927,042	194	18,485,439	120,490,242
1944.....	2,229,571,113	50,921,792	279	22,822,853	157,888,221
1945.....	3,546,000,000	75,200,000	400	23,428,454	233,000,000

PER CENT INCREASE FROM 1938

1938.....	100.0	100.0	100.0	100.0	100.0
1939.....	142.2	115.7	104.7	167.3	130.4
1940.....	218.5	135.2	141.5	257.0	179.0
1941.....	287.5	173.8	141.9	376.1	226.5
1942.....	293.5	283.8	70.8	851.5	250.9
1943.....	337.1	484.0	76.7	1,075.4	284.9
1944.....	468.0	686.0	110.3	1,327.7	373.3
1945.....	744.3	1,013.1	158.1	1,362.9	550.9

Source: Civil Aeronautics Administration, *Statistical Handbook of Civil Aviation* (1945): Passenger revenue miles, p. 36; mail ton-miles, p. 39; aircraft in service, p. 31; total revenues, p. 33. Total taxes paid, see Table 3 for source.

consumed in airplanes than when applied to gasoline consumed by automobiles, trucks and busses. Many states exempt from taxation all fuel not consumed by vehicles making use of public roads. This, of course, removes the gasoline used in airplanes from the tax base. In 1943 the gasoline taxes paid by the domestic airlines to State and Local governments was about 22 per cent less than the amount paid to the Federal Government (Table 14).

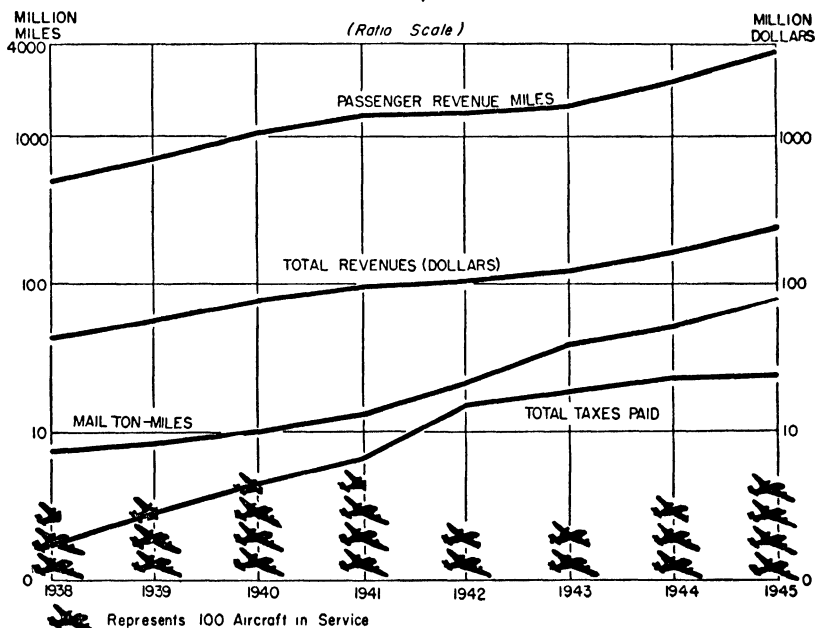
The domestic airlines own very little property other than their planes and repair equipment sufficient to service these planes. The

chapter dealing with the property tax analyzes in detail the quantity of property possessed by the airlines and the problems encountered by local officials in the assessment of this property.

TAXES AND GROWTH OF COMMERCIAL OPERATIONS

Since 1938 the total available passenger seats of domestic airlines have doubled while the total taxes paid by domestic airlines have increased about thirteen-fold. During the same period the revenue passenger miles flown increased seven-fold. This more rapid increase in the number of passenger miles flown than in the amount of additional equipment is explained by the load factor which increased from 50.18 per cent in 1938 to 87.60 per cent in 1945. During the same period that passenger miles flown were increasing seven-fold, the total mail ton-miles of the domestic transport lines increased ten-fold. (A complete analysis of the mail-carrying portion of the domestic airlines operations is found in Chapter VII.) Table 5 and Chart 3 provide a summary of

CHART 3 VOLUME OF OPERATIONS, TAXES, REVENUE OF DOMESTIC AIR-TRANSPORT COMPANIES, 1938 - 1945



Source Table 5

information regarding the relationship between commercial activity of the domestic airlines and the total taxes paid. The data indicate a rapid increase in the two principal services performed by the domestic airlines. The third service provided by domestic airlines, that of carrying express and excess baggage, increased at an even more rapid pace during the period of the war but remained a poor third as a source of funds and was only 5.6 per cent of total domestic airline revenue in 1945. In data relating to ton-miles, excess baggage is not separated from express. The two together rose from about 2.7 million ton-miles in 1938 to over 32.5 million ton-miles in 1945 (Appendix B, Table 4). The available data do separate express receipts from excess baggage revenues. The revenue from express increased from \$1.3 million in 1938 to about \$13 million in 1945 (Appendix B, Table 3).

The summary of total revenues and total taxes shown in Table 5 indicates the rapid rise of both totals. During the period 1938-1945 total revenues increased by approximately 5.5 times, certainly a sensational growth record, but during the same period total taxes paid increased by about 13 times; a sensational growth record, also.

CHAPTER II

GROWTH AND TAXES

EARLY GROWTH OF THE AIR-TRANSPORT INDUSTRY

A great new industry is entering into the period of its adolescence. The people of the nation have become accustomed to thinking of airpower as a mighty arm of the business of waging war and they have quite generally assumed that a great peacetime aviation industry will develop. But in many ways the actions of constituted authorities belie their general statements that air transport is the modern method of travel. For example, the new travel expense voucher recently prepared by the great University which made this study possible does not contain a section for air-travel, and if funds are spent for travel by plane they must be accounted for under the heading "Miscellaneous."

The early development of the domestic air-transport industry goes back to 1911 with an experimental air-mail flight from Long Island. The first scheduled flights were also primarily mail flights; the first one was established on May 15, 1918, between New York City and Washington, D. C.¹ The early history of the development of the present vast network of airways is closely associated with the activities of the Post Office Department. It was not until 1927 that the Post Office Department withdrew from direct air-mail operations.² Up until at least 1934, the sums of money paid by the Post Office Department to the domestic airlines must be regarded to have been considerably in excess of the value of the services performed by the airlines.³ If a date is to be selected as the time from which the air-transport companies began to offer a service which the market valued as roughly equal to the direct

¹ Board of Investigation and Research, 79th Congress, First Session, *Public Aids to Domestic Transportation*, House Document No. 159 (1944), p. 429.

² *Ibid.*, p. 429.

³ It was in February of 1934 that the Postmaster General annulled all domestic air-mail contracts on the ground that they had "been procured through fraud and collusion" (Postmaster General, *Annual Report*, 1934, p. xii).

costs of performing that service, then it is possible to go back only about nine years or to 1938.⁴

The development of the domestic air-transport system has been actively supported by the Federal Government and such will continue to be the case. For example, this has been the federal policy since the days of the Cumberland Highway and the huge land grants to the early railroad builders. The rapid development of the immense resources of our great nation was made possible by the early provision of an efficient transportation system.⁵

AIR-TRANSPORT INDUSTRY AS OF AUGUST, 1946

At the present time (August, 1946) there are 77,000 miles of trunk air-routes. If additional air-routes were to be developed only in those places where the income expected from the sale of air-transport services within a short foreseeable future period would be sufficient to justify their establishment, it would perhaps be years before the present route mileage would be doubled. However, such is not the intended policy of the Civil Aeronautics Board. For example, James M. Landis, Chairman of the Civil Aeronautics Board, stated on July 18, 1946, "The nation's air-route map will undergo a tremendous change in the next few years, with feeder and air-cargo lines possibly tripling the present mileage. . . . The development of feeder services will cost several million dollars in government aid but will be worth it."⁶

The end of the war has been the signal for the rapid expansion of air-transport means which had been retarded during the emergency. It is quite probable that the growth of air-transport facilities during the next few years will not only be sufficiently great to overcome the forced period of stagnation but will surpass the development that would have taken place by 1946 if peace had continued in the world. The war greatly stimulated the develop-

⁴ It was in 1937 that route mileage of all domestic air-transport services finally equaled the total which had been reached in 1931 (Civil Aeronautics Administration, *Statistical Handbook of Civil Aviation*, 1945, p. 32).

⁵ Board of Investigation and Research, *Public Aids to Domestic Transportation*, p. 6. See also, Sanborn, J. B., *Congressional Grants of Land in Aid of Railways* (Bulletin of the University of Wisconsin, Madison, 1899); Riegel, Robert E., *The Story of the Western Railroads* (New York, Macmillan, 1926); and Hibbard, B. H., *A History of the Public Land Policies* (New York, Macmillan, 1924).

⁶ *Columbus Dispatch*, Columbus, Ohio, July 18, 1946, p. 10-A.

ment of the technical aspects of aviation and, of course, also increased the number of trained flying personnel anxious to make some portion of the aviation industry their career.

The rapid growth of the aviation industry has been recognized and encouraged by the different levels of government, especially the Federal Government and the various municipal governments. The Federal Government has recently made provision for the grant of \$500,000,000 to aid in the construction of airports throughout the United States.⁷ The program will be administered largely through the Regional Offices of the Civil Aeronautics Administration. Construction will not actually get under way until the spring of 1947. Most of the airports to be constructed will be small ports useful for pleasure flights and the development of feeder-lines.

The states have recently become more active in the aviation field. As yet it is not certain whether their activity will facilitate the development of commercial aviation or will be a retarding influence.

It is becoming apparent that the interests of owners and operators of other modes of transportation are not identical with those of the commercial air-transport companies. With the development of air transport has come the realization that it represents a threat to the economic interests of those interested in surface transport. This has been evidenced in legislation sponsored by the National Association of Railroad and Utilities Commissioners which was introduced in twenty-three legislatures during the 1944-1945 sessions.⁸

The developers of municipal airports have begun to run into direct or indirect opposition from those interested in other means of transportation. Recently ex-Mayor Fiorella LaGuardia in writing regarding the planning for the great New York municipal airport of Idlewild hinted that its development was being hindered by the activities of interests opposed to the rapid provision of adequate airport facilities.⁹ This type of opposition was

⁷ Civil Aeronautics Administration, Office of Aviation Information, Press Release, May 2, 1946.

⁸ Meixell, Harry, *The Rising Flood of Aviation Legislation*, address delivered before the Third National Aviation Clinic, Oklahoma City, November 19, 1945.

⁹ LaGuardia, Fiorella, "Idlewild-Airport or Sugar Mill?" *PM*, July 14, 1946, p. 3.

to be expected when (after the cessation of hostilities) the capacities of available transport facilities again became more adequate to care for the demands of the nation. The emergence of this attitude is probably desirable in our competitive society when plans for the development of commercial air transport by the use of public funds are being discussed. It is also desirable that the general public realize that such opposition is developing among private interests.

The increased activity in commercial aviation since the close of the war has been to a large measure the result of the stimulus provided by the interest of thousands of discharged war veterans in the development of an industry in which they had received extensive specialized training. The discharged veterans have obtained surplus DC-3's and DC-4's from the Federal Government and with them have established non-scheduled air-cargo lines criss-crossing the country and extending down into Latin America. By June of 1946, the Institute of Air Transportation was representing thirty-two non-scheduled firms.¹⁰ These new firms have not been the recipients of direct government subsidy except to the extent that they were able to purchase their planes at prices below the cost of reproduction. They, of course, make use of government-provided airways and airports. But they have not been the recipients of government mail contracts. The development of these new air-cargo lines appears to be a healthy even though a bit over-expanded development in the air-transport field and are indicative of the vigor of private enterprise in the nation and the opportunities for small enterprises in the air-transport field. The growth of the so-called "GI Lines" has not been without opposition, and it is certainly too early to tell whether they will be able to weather the approaching economic and political pressures.

The availability of adequate cargo planes and the competition of the many new air-cargo firms plus the recent entry of American Airlines, a scheduled airline, into the business of carrying air-cargo, have together brought about a phenomenal reduction in cargo rates. In the recent past the 45-cents-per-ton-mile paid by the Post Office Department was considered low. Late in 1945

¹⁰ *New York Times*, June 12, 1946, p. L-25.

(December, 1945), 20-cents-per-ton-mile was considered the lowest possible rate with DC-3 and DC-4 equipment. However, independent cargo lines have been quoting rates of 13 cents for long hauls. More recently (June, 1946) American Airlines announced contemplated rates of 11 cents per ton-mile for long-distance hauling of plane-load lots.¹¹ It has been estimated that at rates of 11

The following brief quotation gives an idea of the present unsettled condition of the independent cargo lines:

"The current events writer, let alone the historian, is unable to keep track of the air-cargo industry. To start with, no one, including the C.A.A., the C.A.B., or the four or more non-scheduled trade associations which have sprung up, can more than guess the number of companies in the business. Everyone would like to hear a worthwhile guess on the number of planes operated, persons employed, ton-miles operated, and revenue-expense relationship." (*American Aviation*, August, 1946, p. 13.)

cents per ton-mile that "something like a quarter of a billion ton-miles of haulage of perishable foods alone" will be available to the air-cargo lines.

It is a distinct possibility that the rapid growth of air-transportation especially in the air-cargo field will bring with it a rate war. Also, that the new companies in the air-transport business will be able to weaken the authority of the Civil Aeronautics Board over the industry's economic affairs. A serious rate war can be disastrous to the development of the industry and will tend to dry up sources for additional capital. A substantial reduction in the economic powers of the Civil Aeronautics Board would prevent a continuation of the intelligent and rapid development which has been taking place in the air-transport industry during the past eight years.¹² If the Civil Aeronautics Board can retain its present power over the economic activities of air carriers it will undoubtedly be able to prevent in air transportation a duplication of mistakes that marred development of surface travel.

Commercial aviation is showing the true characteristics of adolescence. The industry is growing rapidly and is acquiring some of the outward indications of adulthood. The following are typical examples of these traits: It is still not certain what results

¹¹ *Ibid.*, July 21, 1946, p. F-1.

¹² Further, in the promotion of air transportation the relative advantages of the different modes of transportation should be recognized, and a planning and promotional agency . . . would serve a most useful purpose in coordinating the Federal policies of air transport with other forms of transportation. (Board of Investigation and Research, *Public Aids to Domestic Transportation*, p. 29.)

will follow from the determination to embark upon a certain type of action; the various members of the industry are not well disciplined and frequently show signs of unruliness; the industry is certain that most of the present difficulties will disappear with additional maturity. The realm of future development appears to be unlimited.¹³ "The physical growth of the industry during the next eighteen months promises to be more spectacular than during any previous period of the industry's history."¹⁴

When the air-transport industry was in its infancy all sections of the nation agreed that every possible effort should be made to provide it with the requisites for development. The situation at the present is quite different. Both government and competitive industries have begun to say that it is time the air-transport industry began to pull its own weight. These demands are justified to the extent that the burden placed does not amount to a thwarting of the opportunities within the grasp of the industry, opportunities which now appear attainable as a result of the encouragement extended during the early formative periods.¹⁵

The understanding of the very complex relationships within an industry and among industries and the determination of taxation policies certainly require true industrial statesmanship. It is hoped that the analysis here will be of some aid in judging that portion of the total problem which is related to the tax burden placed upon the rapidly expanding domestic air-transport industry.

SOME GUIDE POSTS FOR TAX POLICY

Rapidly-Growing Industries—It has become a well-recognized axiom that taxes should not be placed with a heavy hand upon that segment of the industry which is experiencing the most rapid growth. The tendency to do this always exists; if yielded to, it results in a stifling of the most dynamic section of the tax object. To encourage rapid increases in industrial production of all types, business taxes, which are certain under nearly all conditions to

¹³ In 1945 there were 400 commercial planes; in 1946 there were 550. It is predicted that in 1947 there will be 1,000 commercial planes flying regular routes.

¹⁴ Landis, James M., Chairman of Civil Aeronautics Board, address at the dedication of the Mansfield, Ohio, Airport, quoted in *The Columbus Dispatch*, Columbus, Ohio, July 21, 1946, p. 2-C.

¹⁵ See tables 6, 7, 8, 9, Appendix A, for data regarding tax burden on different types of transportation.

have a retarding influence, should, if possible, be placed upon and measured by that section of the tax object which has acquired a certain amount of stability. It is also true that this same principle operates between different industries. Industries which have become stabilized can bear a greater tax burden without the creation of undesirable effects than is true of rapidly-developing industries.

The data in Tables 6 and 7 indicate that the air-transport industry is a rapidly developing section of our economy, viewed either from the increase in revenue or the increase in traffic.

The whole of the air-transport industry has been very dynamic during the period under consideration—1938-1944. However, it is in the field of carrying express and freight that the industry

TABLE 6—PERCENTAGE CHANGE IN OPERATING REVENUE, BY SOURCES OF REVENUE ALL DOMESTIC AIR-TRANSPORT COMPANIES, SELECTED PERIOD, 1938-1946

OPERATING REVENUE SOURCE	PERCENTAGE CHANGE		
	1944 from 1943	12 Months Ending January 31, 1946 from 1943	1944 from 1938
Passenger	+ 33.10	+94.25	+468.37
Express and Freight.....	— .90	+27.13	+649.86
Excess Baggage.....	+ 18.04	....	+716.28
Charter and Special Flights...	+548.17	....	+ 14.26
Other	— 37.13	....	+151.03
Total Nonmail Revenue..	+ 29.04	....	+471.82
Mail	+ 37.60	+35.72	+210.90
Total Revenue.....	+ 30.72	+77.28	+375.61

Source: 1938, 1943 and 1944—Civil Aeronautics Board, *Annual Airline Statistics*, p. 21; 12 months ending January 31, 1946—CAB preliminary summary of operating revenues of domestic air carriers.

TABLE 7—PERCENTAGE CHANGE IN REVENUE PASSENGER-MILES, MAIL POUND-MILES, AND EXPRESS AND FREIGHT POUND-MILES, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, SELECTED PERIODS, 1938-1946

REVENUE SOURCE	PERCENTAGE CHANGE		
	1944 from 1943	12 Months Ending April 30, 1946 from 1943	1944 from 1938
Revenue passenger-miles.....	+38.57	+144.7	+471.92
Mail pound-miles.....	+41.80	+ 56.8	+686.58
Express and freight pound-miles	+13.21	+ 40.7	+811.16

Source: Same as Table 6.

appears to have been showing the greatest proportionate growth since 1938. As was also pointed out in an earlier portion of this chapter, it is also this section of the air-transport industry which has continued to be the most dynamic and is showing the most rapid growth during the first six months of 1946. The carrying of passengers appears to be a more rapidly developing section of the industry than the other major service provided—that of carrying mail.

Decreasing-Cost Industries—Another test that can be made to aid in the determination of whether or not the levy of additional taxes is more or less desirable if placed upon one industry or one segment of an industry than upon another is that of the comparison of changes in service rendered with changes in revenue receipts. By comparing Table 6 with Table 7, it is noted that passenger revenues and passenger miles increased at about the same rate between 1938 and 1944 and also between 1943 and 1944. This, however, was not true of either mail or express and freight. The situation regarding mail is unusual and not exactly comparable. The mail revenue received by the lines is determined by the Post Office Department which uses other bases than those commonly accepted in setting rates.¹⁶ The percentage increase in pound-miles of mail, and of express and freight carried was considerably greater than the percentage increase in revenues received in the performance of these two services, respectively. This relationship between services rendered and charges assessed indicates a decreasing-cost situation. Expansion under these conditions is extremely desirable and all possible hinderances should be reduced to the minimum. On occasion economists have recommended the granting of subsidies to decreasing-cost industries. The recommendation is based upon the arithmetic fact that the amount of subsidy would always be less than the benefit accruing to the community.

The rapid development which has taken place in the transportation of express and freight has largely taken place outside of the established domestic airlines. It has been charged that these new and increasing air-cargo lines have not been sufficiently regulated, and, certainly, in many cases they have been liable for only nom-

¹⁶ See Chapter VII for discussion of mail subsidy.

inal taxes. However, considerable hesitance in the imposition of additional regulation and taxation is probably desirable as long as this portion of the air-transport industry shows its present dynamic character and decreasing-cost relationship.

A comparison of the revenue received from mail and express and freight with the number of pound-miles flown in each case indicates that the revenue per pound-mile of mail was considerably higher than that of express and freight. In 1944, the pound-mile revenue received by the domestic airlines for the carrying of mail was 0.033 cents while for the carrying of express and freight it was only 0.023 cents.¹⁷ The difference is considerable—the amount received for the carrying of mail is over 40 per cent more than that received for the carrying of express and freight.

A situation of this sort amounts to the grant of a tax reduction or subsidy to those air-transport companies which carry mail and in addition express and freight; these are the domestic airlines. It tends to place in an unfavorable competitive position the most dynamic portion of the air-transport industry—the firms engaged in the exclusive carrying of express and freight; these are the “GI airlines.” The data in Tables 6 and 7 indicate that it would probably be much more desirable public policy to extend the tax reduction or the subsidy to segments of the air-transport industry not primarily engaged in the carrying of passengers.¹⁸ Or perhaps, better still, make the subsidy a general payment available to all sections of the industry including sightseeing and skywriter operators.

The payment of lower taxes than are paid by the typical industry and the actual granting of government subsidies continue to appear to be desirable government policy toward the whole air-transport industry. The tremendous expansion potentialities of the entire industry combined with the general decreasing-cost situation which continues to exist make desirable the expansion of its services at a more rapid rate than would be possible upon a strict pay-as-you-go basis.

Capital-Funds Sources for New Industries—An examination

¹⁷ Calculated from *Annual Airline Statistics*, Calendar Year 1944 (CAB-1946) p. 21.

¹⁸ Of the total operating revenues of all domestic carriers of \$160,928,224 in 1944, \$116,440,690 was obtained from the carrying of passengers and another \$2,030,444 from the carrying of excess baggage.

of the effect of taxes upon an industry must always include at least some approximations of the relationship between the taxes collected and the funds available to the industry. In addition, the funds available to the industry must be related to the industry's need for new funds. The rapid expansion of the air-transport industry has required continuous increments of capital. The ability of a company to obtain needed capital is obviously closely related to present and future profit-making possibilities. Thus the ability of a company or an industry to expand is increased or decreased by any factor which affects profits. The collection of taxes is certain to affect profits. The net effect is, however, uncertain as long as the present indistinct relationship exists between taxes paid by businesses to the various levels of government and the benefits received from government.

The airlines have made extensive use of profits as a source of funds for continuous expansion. That this is the case is illustrated by the relationship of dividends paid to profits after income taxes in 1945 (Table 8). The "big four" appear to have followed a policy of keeping a large share of their profits for reinvestment in the industry. TWA, with profits of \$1,806,345, made no dividend payments; the other three (American, Eastern and United) paid out in dividends only about a quarter of their net profits after income taxes. Of the seventeen airlines, only Braniff followed a liberal dividend policy.

The expansion of an industry from internal funds is desirable and there can be no objection to the retention of funds within a corporation when the corporation is able to use the funds for the economic expansion of its productive facilities. It is because of the desirability of this type of corporate-dividend policy that the undistributed profits tax was held by many to be so undesirable. The airlines, without exception, could have used, for expansion purposes, funds in addition to those retained from profits. The funds available to the big four for expansion from internal sources were reduced by nearly 50 per cent by income tax collections.¹⁹

New and rapidly expanding businesses have a greater need for additional capital funds than mature and relatively more stable

¹⁹ See the analysis in Chapter VI.

TABLE 8—PROFITS AFTER INCOME TAXES, DIVIDENDS PAID, AND DIVIDENDS PAID AS A PER CENT OF PROFITS AFTER INCOME TAXES, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, 1945

COMPANY	PROFITS AFTER INCOME TAXES	DIVIDENDS PAID	DIVIDENDS AS A PER CENT OF PROFITS AFTER INCOME TAXES
All American	\$ 74,216	None	....
American	4,339,458	1,290,485	29.74
Braniff	849,838	600,000	70.60
Chicago and Southern	168,891	77,477	45.87
Colonial	83,662	None	....
Continental	494,225	40,763	8.25
Delta	654,032	(No report)	....
Eastern	2,126,294	597,033	28.08
Inland	13,223	None	....
Mid Continent	171,973	None	....
National	68,578	Stock Div.	....
Northeast	—165,368	None	....
Northwest	928,708	269,535	29.02
Penn. Central	441,467	118,640	26.87
Transcontinental and Western	1,806,345	None	....
United	4,668,824	1,209,206	25.90
Western	195,902	None	....
Total	\$16,920,268	\$4,203,139	24.84

Source: Calculated from Carriers' Report, December, 1945, CAB Form 2780.

enterprises. However, new businesses have greater difficulty in obtaining funds from the capital markets than is the case with the more established types of business firms. The fact that they find it desirable to use internal sources for expansion rather than to obtain needed capital through the money markets is due partly to a reluctance to give up control of their expanding enterprises, and also to the difficulty experienced by new industries in obtaining additional capital upon reasonable terms.²⁰ These influences have no doubt been very strong factors in the determination of the managerial decisions of the seventeen domestic airlines. In 1945 the total profits of these seventeen companies after income tax payments amounted to \$16,920,268 but only \$4,203,139 were reported to have been paid out in dividends. This was 24.84 per cent of the funds available for dividend payment (Table 8).

²⁰ Cf. Butters, J. Keith and Lintner, John, *Op. Cit.*, p. 3.

CHAPTER III

FINANCING AIRPORTS AND AIRWAYS

In its report, *Public Aids to Domestic Transportation*, the Board of Investigation and Research of the 79th Congress, First Session, made the following statement regarding the general principles underlying government aid for transportation facility development:

It should be the aim of public policy in promoting each kind of domestic transportation, where expenditures of public funds are involved, to seek the development of each type in its relationship to an economical and adequate system of domestic transportation, with due regard for the effects of such expenditures on the transportation system as a whole.

GOVERNMENT AID—GENERAL

The facilities provided by governments for the use of airlines may be divided into four general categories:

1. Those facilities used indirectly by the airlines but which are also used indirectly by most other types of business enterprise. Within this category fall such government services as freedom from invasion, freedom of interstate trade, educated population, etc.

2. Those facilities used directly by the airlines but also used directly by most types of business enterprise. Within this category fall such services as police protection, fire protection, public highways, sanitary provisions and weather reports.

3. Those facilities used indirectly by the airlines but not used by other business enterprises. Within this category fall such government aids as government pilot-training programs, university aviation-training programs, planning and regulative aid provided by the Civil Aeronautics Administration and the Civil Aeronautics Board, and local airport facilities.

4. Those facilities used directly by the airlines but not used by other business enterprises. Within this category fall such government-provided facilities as airports, airways, wind and visibility reports and zoning restrictions.

The concern with government expenditures in this study is restricted primarily to category 4, expenditures for facilities used

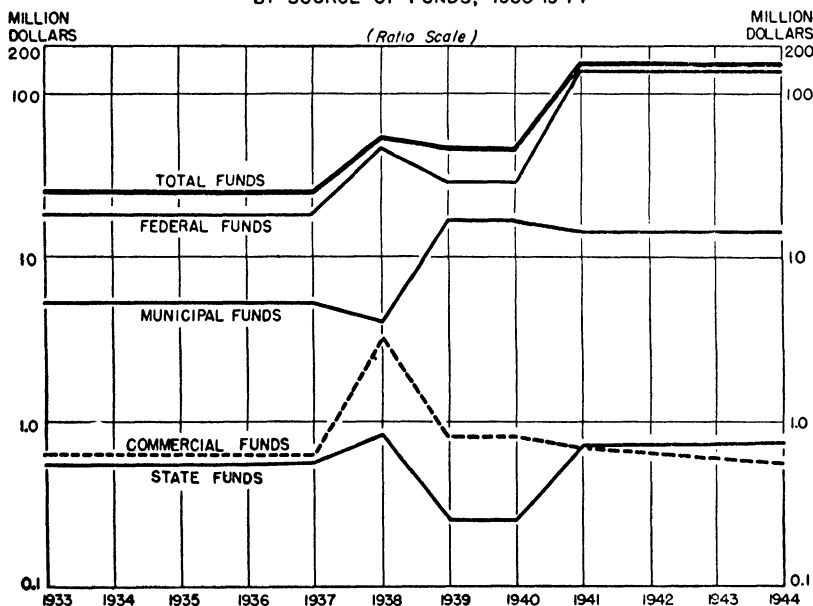
directly by the airlines and not used by other business concerns. For all practical purposes, this limits the analysis of government expenditures to those made in the provision of airports and airways, the most conspicuous and direct form of aid which the government has provided the air-transport industry as well as financially the most important.

AIRPORTS¹

CAPITAL EXPENDITURES, BY SOURCE OF FUNDS

Airports, of course, are not used exclusively by airlines; all airports used by the airlines are also used extensively by private flyers of various sorts, and by the flying services of the armed forces. Practically without exception, airport facilities have been

CHART 4 ESTIMATED ANNUAL CAPITAL EXPENDITURES FOR ALL CIVIL AIRPORTS, BY SOURCE OF FUNDS, 1933-1944



Source: Table 9

provided by government expenditures, primarily by Federal and municipal governments (Table 9 and Chart 4). The funds furnished by the states for capital expenditures upon civil airports

¹ See also Chapter V and Table 4, Appendix D.

since the start of the aviation industry, have amounted to only about 1 per cent of the total amount expended, and since 1939, have totaled only about one-half of one per cent of total capital expenditures² (Table 9).

TABLE 9—ESTIMATED ANNUAL CAPITAL EXPENDITURES FOR ALL CIVIL AIRPORTS, BY SOURCE OF FUNDS, 1933-1944

Year (Fiscal)	Federal Funds	State Funds	Municipal Funds	Commercial and Private Funds	Total
AMOUNT EXPENDED					
Prior to 1933 .	\$ 1,094,328	\$2,905,869	\$69,664,517	\$72,646,799	\$146,311,513
1933.....	18,290,000	550,000	5,530,000	665,000	25,035,000
1934.....	18,290,000	550,000	5,530,000	665,000	25,035,000
1935.....	18,290,000	550,000	5,530,000	665,000	25,035,000
1936.....	18,290,000	550,000	5,530,000	665,000	25,035,000
1937.....	18,295,786	552,491	5,537,780	665,592	25,051,649
1938.....	46,476,164	890,697	4,136,935	3,236,153	54,739,949
1939.....	28,435,000	250,000	16,930,000	820,000	46,435,000
1940.....	28,440,508	250,000	16,934,261	820,436	46,445,205
1941.....	136,200,000	776,000	14,406,000	700,000	152,082,000
1942.....	136,200,000	776,000	14,406,000	650,000	152,032,000
1943.....	136,200,000	776,000	14,406,000	600,000	151,982,000
1944.....	136,203,385	778,208	14,408,507	550,000	151,940,100
PER CENT OF TOTAL					
Prior to 1933 .	0.7	2.0	47.6	49.7	100.0
1933.....	73.1	2.2	22.1	2.7	100.0
1934.....	73.1	2.2	22.1	2.7	100.0
1935.....	73.1	2.2	22.1	2.7	100.0
1936.....	73.1	2.2	22.1	2.7	100.0
1937.....	73.0	2.2	22.1	2.7	100.0
1938.....	84.9	1.6	7.6	5.9	100.0
1939.....	61.2	0.5	36.5	1.8	100.0
1940.....	61.2	0.5	36.5	1.8	100.0
1941.....	89.6	0.5	9.5	0.5	100.0
1942.....	89.6	0.5	9.5	0.4	100.0
1943.....	89.6	0.5	9.5	0.4	100.0
1944.....	89.6	0.5	9.5	0.4	100.0

Source: Civil Aeronautics Administration, Airports Service, *Airport Survey*, 1944.

Through the year 1944, slightly more than a billion dollars had been invested in civil airports. Of this total, about three quarters of a billion was provided by the Federal government. Commercial and private funds expended for airport construction have been only about 50 per cent as great as those provided by munici-

² "The State is handicapped in not being able to offer any financial aid in airport construction." (Frank Mahr, "Airport Building in Indiana," *Airports*, April, 1946, p. 51.)

palities, although they were over 8 times as great as the capital investments made by the various states in airport construction.³

Definitely, airports have not, in the past, been provided by the states. State interest in aviation has lagged considerably behind that of the Federal government and the municipalities. Recently, however, states have shown an increasing interest in the developing air-transport industry. This has been evidenced by state legislative action aimed at the control and development of aviation generally, and, also, by legislative action aimed at obtaining for the states increased tax receipts from the industry. To date, the amount of and the increase in state expenditures over earlier years for the development of aviation has not been significant. Generally, states have shown a reluctance to spend general revenue funds for the expansion of aviation facilities.⁴ There is, however, a growing recognition of the responsibility of the states toward future development. The attitude of the National Association of State Aviation Officials is expressed by Sheldon B. Steers, Director, Michigan Board of Aeronautics and President of NASAO, as follows:

Certainly no particular area of government has a monopoly on the control of America's developing air age and, by like reasoning, no unit of government can evade its responsibility in this field. If we recognize these axioms, then the problem becomes one of cooperation.⁵

Number of Airports, by Classes—The number of airports by classes and the change in number at the end of 1944 from 1941 was as follows:

<i>Airport Class</i>	<i>Number 1944</i>	<i>Number 1941</i>	<i>Change 1944 from 1941</i>
Class I	1,215	1,523	—308
Class II	936	702	+234
Class III	464	187	+277
Class IV and over.	812	72	+740

As of December 31, 1944, there were 1,215 Class I airports,

³ In the past, some airports were built entirely with funds provided by the municipalities. On occasion, this type of financing still occurs. For example, Worcester, Massachusetts, has constructed a \$2 million municipal airport "financed solely through municipal funds." (*American City*, April, 1946, p. 87.)

⁴ Cf. p. 29, Table 9.

⁵ Council of State Governments, *The Book of the States 1945-46*, Vol. VI (1946), p. 306.

936 Class II airports, 464 Class III airports, and 812 Class IV and over airports. From 1941 to 1944, the number of Class IV and over airports increased from 72 to 812, and the Class III airports, from 187 to 464. There was an actual decrease in the number of Class I airports, from 1,523 in 1941 to 1,215 in 1944. During the same period, Class II airports showed an increase of 234 or from 702 airports to 936. Since the conclusion of the war, Class I and Class II airports have experienced a mushroom growth. It is estimated that the number has doubled since 1944.⁶

The airports provided by the states are the Class I and Class II ports unavailable for use by the typical air-transport plane. Since this is the case, it should be pointed out in passing, that it is questionable whether the costs of the construction and maintenance of these ports (Class I and II) should be met by the levy of a special tax upon the domestic airlines. This, however, is very apt to be the situation if the state collects an aviation gasoline tax.

MAINTENANCE AND OPERATING COSTS

The income obtained from publicly owned airports has been insufficient to make any payments toward capital investments and has actually been insufficient to cover maintenance and operating expenditures. The maintenance and operating deficits incurred have been largely borne by the municipalities. During the period 1936-1940 these deficits totaled \$5,900,189 (Table 10). Generally, the municipalities have made a serious effort to make their airports self sustaining.⁷ The data for the five-year period 1936-1940 indicate that publicly owned airports made a constant improvement in the portion of maintenance and operating expenses which were covered from airport revenues. The portion of maintenance and operating expenses covered by airport revenues increased from 57.4 per cent in 1936 to 77.1 per cent in 1940. The average per cent of deficit for the five-year period was 37.2.

The total expenditures for maintenance and operations of all publicly owned airports for the 1936-1940 period was \$15,896,923 of which \$13,169,001 or 82.8 per cent was allocated to the sched-

⁶ Air Transport Association of America, *Air Transportation*, 7th Edition, October 1, 1945, pp. 14-15.

⁷ See pp. 34-38 of this study.

TABLE 10—INCOME AND EXPENDITURES FOR MAINTENANCE AND OPERATION OF ALL PUBLICLY OWNED AIRPORTS, 1936-1940¹

YEAR (Calendar)	INCOME FROM AIRPORTS USED BY:			OPERATING EXPENSES FOR AIRPORTS USED BY: ²			PER CENT OF INCOME TO EXPENSES
	S.A.C. ³	Other	Total	S.A.C. ³	Other	Total	
1936	\$1,149,077	\$ 292,243	\$1,441,320	\$ 1,860,958	\$ 647,910	\$ 2,508,868	57.4
1937	1,338,545	385,588	1,724,133	2,360,237	619,796	2,980,033	57.9
1938	1,506,420	262,501	1,768,921	2,700,631	596,230	3,296,861	53.7
1939	1,951,507	255,802	2,207,309	2,928,296	480,404	3,408,700	64.8
1940	2,580,435	274,616	2,855,051	3,318,879	383,582	3,702,461	77.1
Total	\$8,525,984	\$1,470,750	\$9,996,734	\$13,169,001	\$2,727,922	\$15,896,923	62.8

¹ Includes leased and subleased fields and estimated amounts for airports not reporting. Exclusive of Washington National Airport and LaGuardia Field; the former did not open for operation until 1941, and information for the latter was not furnished upon request.

² Does not include depreciation or interest.

³ Scheduled air carriers. Other aircraft operate at these airports and income from such operations is included.

Source: Board of Investigation and Research, *Public Aids to Domestic Transportation*, Table 93, p. 496, from data compiled by the Civil Aeronautics Administration.

uled air carriers. The conditions existing during the war years changed this relationship drastically and the planes of the various armed services became by far the most important users of the airports. It is expected that normal postwar conditions will approximate those existing prior to the war.

INDIRECT COSTS IN REDUCED PROPERTY VALUES

Aviation enthusiasts at various times have emphasized that the modern airport should become a part of the general park and parkway plan of the city. By some, the airport has been seen as a factor which would increase existing land values of the area immediately surrounding the port, and as a result of these increased property values, the problem of financing airport construction would be lessened.⁸ On the other hand, recent studies reported to the American Society of Planning Officials show the construction of an airport in an area to be a very strong force tending toward the reduction of the value of property located within the area rather than a factor tending to increase property value. With the development of the larger planes, the increased number of planes, and the use of bright landing lights has come also a high nuisance value.⁹ The appraisers predict a \$12,962,000 loss in the value of the land surrounding the proposed site of a large airport within the Detroit metropolitan region.¹⁰ This is a loss in value for farm buildings and residential buildings. An estimate was not made regarding the increase in value due to the increased commercial possibilities within the area. Also, the calculation did not sufficiently consider the increase in the value of all land in the metropolitan area due to the availability of a new commercial port and the increased recreational opportunities provided by a great modern airport. It is quite likely that for some time to come the losses in property values will receive greater

⁸ "Tomorrow's airport should be an integral part of decentralized suburban planning in which it becomes a community center in itself, all operated as a self-supporting unit." *American Aviation*, May 15, 1946, p. 1.

⁹ Cf. *U. S. vs. Causby*, 14LW 4360 (1946). Justice Douglas handed down a decision based on the Fifth Amendment that reversed the Court of Claims' decision that the plaintiff could not collect damages arising out of reduced income and loss of sleep caused by planes flying low to land at nearby airport. Justice Black in dissenting opinion compared an airport to a busy highway and predicted that the opinion will cause great confusion.

¹⁰ *American City*, February, 1946, p. 15.

publicity than the gains. This will be true largely because the loss of value for a particular use can be more accurately determined than the gains, and the losses will be concentrated upon a smaller number of people and therefore will be felt more than will be the case of gains in property values. However, it may be that those who tend to see the airport as a blessing to citizens residing in the immediate neighborhood are a bit too optimistic. If the construction of an airport reduces surrounding property values the cost of its construction has increased.

It must not be forgotten in an analysis of the effect of a commercial establishment upon immediate-area property values that the value of all property is largely determined by the establishment and success of commercial enterprises. This fact, however, does not justify the distribution of commercial establishments in a manner which does not take into adequate consideration the fact that the net advantage of its operations is reduced by the extent to which it reduces the possibility of comfortable residential living. Cities planning the location of airports should take this into consideration.

AIRPORT REVENUES: FEES AND RENTS

Unless the various levels of government wish to give subsidies to the air-transport industry, the collections from the users of the airport facilities must be sufficient to meet all costs incurred in the construction and maintenance of the airports.¹¹ Since there are a variety of types of airport users, the problem of allocating proportionate costs for the use made of facilities becomes important. Theoretically, the amounts collected from an air-transport company must be equal to its allocated portion of total costs. However, it is doubtful if airport cost estimates will ever develop to the point where charges based on *costs* will be anything other than rough approximations, since the prevalent type of expense consists of joint costs, the allocation of which will always be to a large extent arbitrary. For this reason, the amount collected from any particular user of an airport will always be, to a certain extent, the result of a policy determined upon with other factors in mind

¹¹ Cf. Interstate Commerce Commission, *Coordination of Motor Transportation* (Docket No. 23400, Washington, D. C., 1932), p. 374.

than that of covering the portion of the total *cost* arising from the provision of facilities to a particular type of user.¹²

Governments have made exactions to cover airport costs principally in two different ways. First, a fee is charged each time the private or government user of the facility makes use of it. The fees charged can be raised or lowered from time to time as the total income from their levy varies in relation to the total costs incurred. This method has considerable flexibility and would make possible, of course, the use of the weapon of price competition as a method of inducing airlines to use one of a number of alternative airports. Second, a general tax is charged. This tax is measured by a particular item used in the industry the quantity of which varies directly with the extent to which particular users make use of the facility. The gasoline tax is this type of tax when applied to the trucking industry, however doubtful it may be as a suitable measure of airport use.

The direct levy of a fee is considered by many as preferable to more indirect methods of obtaining the funds; for example, George W. Mitchell in summing up his discussion of "Tax Policy for Commercial Aviation" states "The broad outline of a tax policy for commercial aviation thus involves . . . the elimination of state fuel taxes and the use of landing fees and rents to comprise the industry's payment toward the construction and maintenance of airports and related public facilities."¹³

The use of fees and the imposition of rental charges has become general, and apparently the trend is toward the increase in their use. This is desirable under most circumstances. However, there are certain dangers which must be guarded against. Some of the complexities which make the fee method something other than a panacea for all air-transport tax problems, may be summarized as follows:

1. The assessment of fees may be considered just another tax and will be levied in addition to fuel levies.
2. The assessment of fees as a direct charge for the cost of operating the port should include some control over the manner in which the port is

¹² Cf. LaGuardia, Fiorello, "Idlewild Airport or Sugar Mill," *PM*, July 14, 1946, p. 6.

¹³ The Chicago Association of Commerce, *Prospects and Problems in Aviation* (as analyzed by twelve national authorities), (1945), p. 199.

TABLE 11—PENNSYLVANIA-CENTRAL AIRLINES' CONTRACTS WITH VARIOUS MUNICIPALITIES, FEBRUARY 13, 1946

MUNICIPALITY	TERMS OF CONTRACTS ^(a) (as of February 13, 1946)
Detroit	Schedules: 1 to 4, inc., \$100 each per mo. 5 to 12, inc., 75 each per mo. 13 to 16, inc., 50 each per mo. Additional schedules: \$25 each per mo.
Knoxville	"Present" schedules: \$75 each per mo. Additional schedules: \$25 each per mo.
Buffalo	\$50 per schedule per mo.
Flint	7 schedules for \$112.50 per mo., plus or minus \$12.50 per schedule per mo. more or less than 7
Akron	\$50 per scheduled trip per mo. <i>Unusual arrangements:</i> minimum charge \$200 per mo.
Lansing	Schedules: 1 and 2, \$25 each per mo. Additional schedules: \$12.50 each per mo.
Chicago	Schedules: 1 to 3, inc., \$200 each per mo. 4 to 6, inc., 100 each per mo. 7 to 9, inc., 50 each per mo. Additional schedules: 25 each per mo.
New York LaGuardia Field	Schedules: 1 to 3, inc., \$200 each per mo. 4 to 6, inc., 100 each per mo. 7 to 9, inc., 50 each per mo. Additional schedules: \$25 each per mo. <i>Unusual charge:</i> \$5,000 per year license fee.
Idlewild	Schedules: 1 to 3, inc., \$200 each per mo. 4 to 7, inc., 136.36 each per mo. 8 to 12, inc., 68.18 each per mo. <i>Unusual charge:</i> Gate position \$9,000 per gate per year. (Information not available as to whether license fee will be charged similar to that at LaGuardia.)
Washington National Airport	Schedules: 1 to 4, \$75 each per mo. Additional schedules: \$25 each per mo. <i>Unusual charge:</i> Ramp service \$20 per schedule per mo.
Norfolk	<i>Unusual arrangement</i> with respect to control tower: \$163.60 charge per annum "for heating." In no other case does PCA have to pay separate specified charge for control tower, although such charges may be "hidden" in landing fees or other charges.
Chattanooga	<i>Unusual arrangement:</i> Flat rate of \$200 per month for landing fees and office space.
Knoxville	<i>Unusual arrangement:</i> \$5,000 per year in monthly installments. This is to include payment for the hangar, 1,168 square feet of office space, and one round-trip schedule; \$25 per month for each additional schedule.

^(a) The charges listed in the contracts with the exception of Chattanooga and Knoxville, cover only the charges for handling planes in and out of ports in direct transportation

operated. It is quite possible that the facilities desired by the operating airlines would be quite different from the ones considered desirable by the controlling government agency.

3. There does not exist an ecumenical directive requiring that fees should only be sufficient to cover cost of airport operation. In fact, past experience in the collection of airport fees shows that they have been only roughly levied upon the basis of covering operating costs.

4. It is possible to use the fee system in a manner which would be counter to the best interests of air-carriers and the development of an efficient national transport system. The danger of this would be especially great if a competing type of carrier was particularly influential in the local economy.

Rates—Although charges for airport use are not standardized, they are usually stated in terms of dollars per month per schedule, with a sliding scale of charges which decrease as the number of schedules increases. The contracts which the Pennsylvania-Central Airline holds with various airports as shown in Table 11 are typical of present practices. Table 12 provides data regarding the landing fees at various municipal ports for cargo planes. For the two airports reported in both summaries (Buffalo and Chicago) comparable charges for cargo planes and passenger planes are available. The information indicates that the same charge is made at these airports for a cargo-plane of a given weight as is made for a passenger-plane. Also, the same situation exists in Cincinnati where in February, 1946, cargo and scheduled passenger planes, regardless of ownership, which operated with scheduled landings at Lunken Airport (the municipal airport of Cincinnati) paid a fee of \$75 per year or \$6.25 per month for each daily scheduled landing. To the extent that this should become a general practice this method of equal assessment would place a heavier burden

service. Charges are separate for hangars, offices, ticket-office space, nonexclusive space such as baggage space, etc., gasoline storage, electricity, steam, water, air-compressor service, etc.

The charges (as listed above) are for gross landing weights varying from 25,000 to 30,000 pounds and less, depending upon the port (typical weight 26,000 pounds and less), which, from the standpoint of the scheduled airlines, means that for practical purposes these are the charges applicable to DC-3's. Charges for heavier planes, where provided, vary, but typically the additional charge is \$1.00 per month per schedule for each 1,000 pounds excess weight above the basic weight. (Information obtained by the author from legal department of PCA.)

Source: The Air Transport Association of America, *Airport Charges* (February 13, 1946, unpublished).

NOTE: Charges are based on landings or departures, usually the latter, but never both.

upon the cargo planes with their relatively lower pay loads. Also, the costs to the port of handling the load of a cargo plane should be considerably less than the cost of handling the load of a passenger plane. Finally, passenger traffic, for the present at least, can bear higher airport fees than cargo traffic. Because of these relationships it would appear logical for the airports to set cargo-plane fees below those assessed upon passenger planes.

TABLE 12—LANDING FEES FOR CARGO PLANES, VARIOUS CITIES, 1946

CITY	AIRPORT	FIRST TRIP PER MONTH	SECOND TRIP PER MONTH	THIRD TRIP PER MONTH	GROSS WEIGHT (Pounds)
Albany	Albany	\$ 50.00	\$ 25.00	\$ 25.00	50,000
Birmingham .	Birmingham . .	100.00	50.00	25.00	
Boston	Logan	100.00	100.00	100.00	
Buffalo	Buffalo	50.00	50.00	50.00	25,000
Chicago	Chicago	200.00	200.00	200.00	25,000
Cincinnati . .	Lunken	6.25	6.25	6.25	
Cleveland . .	Cleveland	150.00	150.00	150.00	
Dallas	Love	8¢ per 1,000 lbs.			
Detroit	Detroit	100.00	100.00	100.00	
Los Angeles .	Los Angeles . . .	(\$10 per departure per cargo plane. 15¢ per 1,000 lbs. or fraction thereof for gross weight in excess of 25,500 lbs.)			
Newark	Newark	(Rates vary from \$1.50 per landing for a plane with rated gross weight of 5,000 lbs. to \$50 for one with gross weight of 100,000 lbs. By paying for 30 landings in one month, a reduced rate is available, cost would be \$30 for the lightest class and \$1,000 for the heaviest.)			
St. Louis . . .	Lambert-St. Louis	100.00	100.00	100.00	

Source: *Air Transportation*, February, 1946, p. 55.

Economic Effects—the manner in which airport fees are graduated may have an important effect upon the development of the industry. The granting of very low rates to planes carrying air-freight could become an important competitive boost to the cargo lines. Differential rates favoring the scheduled airlines could retard the development of chartered air transportation. These possibilities are obvious. However, it is not so patent that the schedules of fees have the possibilities of influencing the type of commercial plane developed.

A study made by the Air Transport Association indicated that

with a basic fee of \$200 and \$1 per 1,000 pounds per schedule per month in excess of 26,000 pounds, the differential cost per seat per schedule was 22.1 cents less in the case of a Constellation with 64 seats than with a conventional 19-seat plane. Assuming the same fee schedule, this would be a difference of 0.67 mills per passenger-mile at a 65 per cent load factor and for a 530-mile haul.¹⁴ Definitely this type of fee schedule would encourage the development of larger planes. Also, it would in a sense be a subsidy to long-haul air travel for which the larger planes are, at present at least, better suited. It would, in addition, tend to be a subsidy to those planes flying between points possessing a high air-traffic density as against planes flying between points where the available traffic was such that only small planes could be used.

Legal Considerations—The legality of airplane registration fees has not been tested. However, there exists considerable justification for the belief that the fees levied, whether registration or merely for the use of a facility and not associated with registration, can be as high as necessary to raise funds sufficient to meet the costs of the facilities used or provided. In addition, a fee would most likely be legal if based upon the benefits reasonably attributable to the use of the facility. This certainly provides a sufficiently broad base for the assessment of fees that would be the major source of revenue used to defray the total costs of airport facilities. In fact, the concept of "benefits reasonably attributable to the use of the facility" leaves a suspicion that perhaps fees could be legally levied to an amount considerably above that required to meet costs incurred in the provision of the service. It is because of this latter fear and also because of a belief that landing fees will become just an additional charge that some leaders in the aeronautic industry have been opposed to the use of fees and take the position that the best guarantee that the air-transport industry will pay its just share (proportional share measured by conventional yardsticks) is for it to pay only those taxes assessed upon similar industries, and not be subjected to unique exactions.

Justification for Unique Levies—The opinion that airlines

¹⁴ The Air Transportation Association, *Airport Charges* (Unpublished Study, February 13, 1946).

should be taxed like similar industries is a line of reasoning akin to that which certain groups held when they advocated that the air-transportation industry should be placed under the control of the Interstate Commerce Commission. Fortunately, the individuals and organizations interested in the development of air transport were able to convince Congressional leaders of the desirability of setting up a separate agency for the development of air-carrier services. The essential difference in the aeronautic industry from other transportation industries is noted by Arne Wiprud in his book *Justice in Transportation*, when he states that "It is significant that air transport was not placed under the jurisdiction of the Interstate Commerce Commission. The inherent differences of air transport require essentially different treatment from that accorded railroads. Motor and water transport also require different treatment."¹⁵

It is by an understanding of these differences and incorporating them in a tax policy that it will be possible to collect from the air-transport industry its fair share of contributions to total government revenues, and at the same time prevent the levy of these taxes from retarding the growth of the industry or forcing the industry to develop in a manner other than that which would be considered to the best interests of consumers of air-transport services. For example, one great difference between the air-transport and the railroad industry is the manner in which the two industries are capitalized. The railroads have been largely financed by the sale of bonds (loan capital), while the air-transport industry has been practically entirely financed by the sale of common stock (equity capital). Under the existing method of taxing corporations (all rail-lines, as well as airlines, are incorporated) the interest paid out to meet the costs of a funded debt are deducted from income before calculating the taxable corporate income, but the dividends paid out to meet the costs of an equity debt are not deductible from income. Thus, corporate income taxes of the conventional type, work to the competitive disadvantage of airlines and to the competitive advantage of railroads. This fact

¹⁵ Wiprud, Arne Clarence, *Justice in Transportation* (Ziff-Davis, New York, 1945), p. 67.

must be taken into adequate account when a comparison is made of the tax burden of railroads with that of airlines.

In addition, the fact that the air-transport industry is young, and growing rapidly, must never be forgotten. The taxes levied on the industry must be of a nature to encourage the new and the small company. The assessments must be such as to encourage the introduction of improved techniques, or at least not discourage them.¹⁶ The collection from the airlines of the conventional transportation taxes does not necessarily accomplish this aim.

PAYMENTS BY AIRLINES

The airlines, even during the period of their infancy, have paid for a large share of the operating and maintenance cost of airports. In fact, in 1941 the airlines paid 20 per cent more than the share of airport operating expenses and maintenance which was assigned to them.¹⁷ Thus, the airlines are beginning to pay for a portion of the capital costs of the airports. It should be recognized that this is the case and an effort should be made to have other users do likewise. However, for the period 1936-1940, the revenue obtained by airports from scheduled airlines failed by \$1,215,387 or about 26 per cent to meet operating and maintenance costs allocated to them and were insufficient to pay any portion of the capital costs.¹⁸ The revenues collected from airlines by airport managers consisted almost entirely of fees and rental charges for use of facilities.¹⁹ Taxes paid by airlines have not been considered as payment for airport facilities. If, however, only the state gasoline taxes paid by the airlines had been considered, the airlines would have actually overpaid for airport facilities by about 100 per cent in 1941.²⁰

The record appears to justify the placing of the major reliance upon fees and rents as a means of collecting from the airlines

¹⁶ "A dollar spent now in helping communities visualize the revenue potential of local airports will mean many dollars saved in years to come from high landing fees and local charges of various types." (*American Aviation*, May 15, 1946, p. 6.)

¹⁷ Board of Investigation and Research, *Public Aids to Domestic Transportation*, p. 497.

¹⁸ *Ibid.*, p. 496.

¹⁹ Cf. Pool, Robert M., *Airport Accounting*, "Fees and Rental Charges" (Unpublished M.A. thesis, Ohio State University, 1944)

²⁰ State gasoline taxes collected from airlines in 1941 were \$802,895 (Appendix A, Table 1).

airport maintenance and operating costs. In fact, with increased traffic, it seems quite probable that it would be possible, by a slight increase in fees charged airlines and an increase in the fees assessed from the many airport users that at present are charged very little, if anything, to cover the total cost of airport maintenance and construction. The expected increase in air-freight and air-express should make a major contribution in increasing the available revenue obtainable from the assessment of fees and rents.

OTHER AIRPORT REVENUE SOURCES

The percentage of the expenses of publicly owned airports which was provided for from the various sources of revenue available to airport managers for the years 1936-1940 was as follows:

<i>Year</i>	<i>Gross Revenue Income as a Per Cent of Expense</i>
1936.....	57.4
1937.....	57.9
1938.....	53.7
1939.....	64.8
1940.....	77.1
Average.....	62.8

Source: See Table 10.

It should be remembered that there are sources of revenue other than that of levying fees upon scheduled airline departures or landings.²¹

After all, airlines account for only about 15 per cent of the total traffic moving in and out of airports. Also, revenues can be obtained from such sources as rent of office space at the port, conces-

²¹ For accounting purposes the sources of airport revenues may be summarized as follows according to Joseph M. Cunningham, First Deputy Comptroller of the City of New York:

Aviation Revenues
 Hangar rentals
 Scheduled-flight fees
 Airline companies
 Governmental agencies
 Local flying
 Non-scheduled flight fees
 Airline companies
 Governmental agencies
 Local flying
 Fees—Other
 Other aviation revenues
 Terminal building rentals

Concession Revenues
 Airport services
 Sale of petroleum products
 Land transportation facilities
 Terminal services
 Terminal sales

sionaires, taxi and bus stands, sale of public utilities, charge of a small fee from airport visitors, sale of display case space, garage space, etc. There seems to be no valid reason (except perhaps that of charging what the traffic will bear) why government planes and private planes other than airline planes should not pay a fee equivalent to that levied upon regular airline users of port facilities. If these sources of revenue in addition to the assessment of airline fees and rents are intelligently exploited, there would appear to be no justification for states or municipalities to levy any other special assessments upon airlines or other users of airport facilities.

Government (Federal, State and Municipal) capital expenditure upon all public airports at the end of the 1944 amounted to about \$942,000,000 and will be considerably more in the near future.²²

This is about forty-eight times the total operating profit of all United States domestic and international air carriers in 1944. These profits were not considered to be in excess of the amounts necessary to meet dividend requirements and provide sufficient inducement to enable the industry to convince capitalists to invest additional funds to meet the capital requisites of the expanding industry.²³ It is doubtful if the airlines at any predictable future date will be able to pay a considerable portion of the accumulated capital invested in airports and air routes. However, as has been previously indicated, if all sources of airport revenue were exploited and the airlines were assessed only for those facilities which they actually used airlines could meet their allocated portion of total airport costs and airports would be self-sustaining.

The new Idlewild Airport of New York City has been established with the expectation that it will be financially self-sustain-

²² Congress on April 30, 1946, passed the CAA \$500,000,000 airport bill. It is expected that over 3,000 airports will be built in the next ten years. Most of these ports will be small and unsuitable for the typical domestic transport plane. The bill as passed contains the Bulwinkle amendment which permits states to pass legislation which would specifically require cities to obtain federal grants through state aviation agencies. (*American Aviation*, May 15, 1946, p. 50.)

²³ Realized earnings are particularly important to a growing industry and to the individual firms within that industry. High earnings are needed to induce would-be investors to assume the increased risk inherent in the investment of funds in a young industry. (Cf. Butters, J. Keith and Lintner, John, *op. cit.*, pp. 33, 50, 60. Also see pp. 106 and 107 of this study.)

ing. In fact, a possible lucrative revenue source was abandoned without destroying the prospective balance between income and expenditures.²⁴ If the airports of the larger cities can be made self-sustaining, the amount of government subsidy to the air-transport industry will be substantially reduced. For during the period 1936-1940, it was the losses sustained by the airports in cities of over 500,000 population which reduced the proportion of total airport costs which were covered by direct airport income.²⁵

AIRPORT ADMINISTRATION

Airport administration must be removed from politics. The administration of the airport must be as closely related to airport functions as is possible. This can be most readily accomplished, perhaps, by organizing each municipal airport as a government corporation. The experience which the Federal government has had with government corporations should recommend their use to municipalities and states. A government corporation could easily provide the users of airport facilities with an opportunity to express their desires regarding the manner in which they would like to have the port operated and also enable the airplane owners to have some control over the manner in which the funds they contribute are to be spent. The operation of an airport is a technical business; also, it involves the making of many compromise decisions regarding the desires of cargo carriers and passenger carriers, chartered carriers and airlines, small-plane users and large-plane users, shippers and carriers, spectators and customers, and, finally, between public interest and private interest. It is best that these conflicts be thrashed out around the director's table of a government corporation possessing considerable autonomous power and with a board of directors representing the numerous divergent interests but, at the same time, possessing a central core around which agreement could always be concluded; namely, a

²⁴ Oertell, R. C., "Idlewild Fuel Concession," *Air Transport*, May, 1946. "At that time, I made it clear that we were abandoning the 1 1/2 cents per gallon charge on gasoline contemplated in the oil company proposals of October, 1943, because we had worked out a system of rentals and flight fees that would make the City's airport investment self-sustaining, which has been our sole object."

²⁵ Board of Investigation and Research, *Public Aids to Domestic Transportation*, 79th Congress, First Session, p. 496.

desire that the air-transport industry develop in a healthy economic manner.

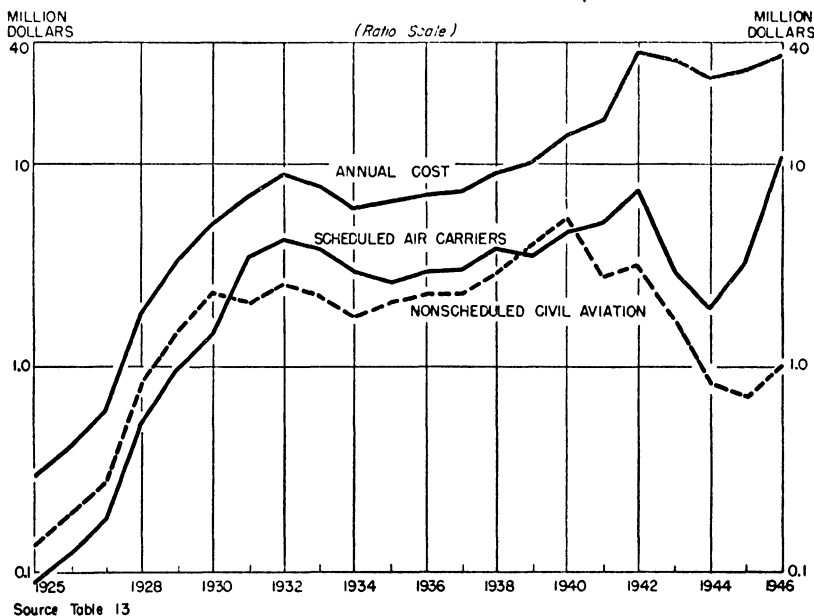
The government-corporation method of organization would also greatly facilitate intermunicipal cooperation in the establishment and operation of airports. This advantage will become increasingly important in the provision of airports for large sections of the more thinly populated areas of America. This fact has been realized by the state legislatures of the vast majority of the states and has resulted in suitable enabling legislation.²⁶

AIRWAYS²⁷

DIRECT COST

Airways have been developed and financed by the Federal government without material assistance from other levels of gov-

CHART 5 ASSIGNMENT OF FEDERAL COSTS OF THE DOMESTIC AIRWAYS TO SCHEDULED AIR CARRIERS AND NONSCHEDULED CIVIL AVIATION, 1925-1946

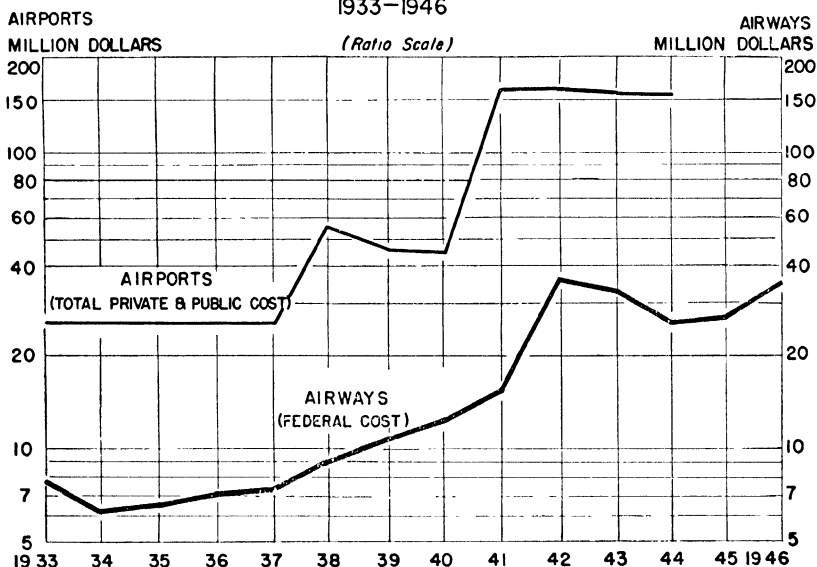


²⁶ "Intermunicipal Cooperation in Establishing, Maintaining, and Operating Airports," 12 *Journal of Air Law and Commerce*, 301, 311, (1941).

²⁷ A civil airway is a path through the navigable airspace (above the minimum altitudes of flight prescribed by regulations). These airways are designated by naming points on the earth and connecting them with straight lines. The width of the airway extends five miles on either side of the center line.

ernment or from private individuals or groups.²⁸ Although the nation is now covered by a network of airways, the total cost of maintenance and construction during a twenty-one year period, or from 1925 to 1946, has been only \$268,822,522. Table 13 and Chart 5 provide data regarding the total expenditure upon airways and the portion of that expense which should be allocated to scheduled air carriers and to nonscheduled civil aviation.

CHART 6—EXPENDITURES FOR AIRPORTS AND AIRWAYS,
1933–1946



Source: Tables 9 and 13

(Chart 6 shows the total expenditures for airways as compared with airports.) According to these data, the portion of the total amount expended upon airways which should be borne by domestic airlines, if they were to pay for the portion of the total cost which their use of the airways bore to the total use, would be \$69,838,171, or 26 per cent of the estimated cost. Of the \$34 million spent by the Federal government on airways in 1946 (if the allocation figure of 32.0 per cent is used) the airlines, to pay for their share of the expenditure, should have paid about \$10.9 million.

²⁸ See the discussion of Gasoline Tax and Income Tax, pp. 57–76 and pp. 97–115 also Tables 1, 2 and 3 of Appendix D.

Undoubtedly, some action will be taken in the near future aimed at collecting from the domestic airlines additional revenues to be earmarked for airway construction and maintenance. At the time this is being written both the Civil Aeronautics Authority and the Air Transport Association are attempting to think the problem out. The Civil Aeronautics Authority is considering it from the point of view of themselves as owners of airways, and the Air Transport Association, from the point of view of the payer.

It would appear that the development of airways has a quite different history regarding the relationship of the users and the providers from that of the public roads. Public roads were originally constructed as the result of the propaganda of good-roads groups distributed throughout the country. In order to put over their recommendation for the construction of more and better roads it was necessary for them to assure the citizenry that these roads would not be an additional tax burden upon those who did not use roads; rather, the roads would be paid for by the users. No such relationship existed during the original construction of the airways. The airlines never promised the Federal government that they would pay for the construction of airways. The airways were built as the result of national policy which was determined upon with little or no regard to the ability of the users to pay for the cost of the service. However, now that the airlines are becoming more prosperous it has been suggested that the airlines bear special taxes assessed to cover the cost of maintaining and constructing the airways.

ALLOCATION OF COSTS

If the cost of the airways is to be allocated among the various users, a decision must be arrived at regarding what costs should be covered and by whom. The determination of the portion of total costs to be met by the different users is part of this problem as is also the determination of the treatment to be given historical costs or costs that have already occurred.

Because of the nature of the reasons for expenditures upon airways, i.e., national defense requirements, rapid development of feeder airways, etc., the Federal government should not attempt

TABLE 13—ASSIGNMENT OF ANNUAL FEDERAL COSTS OF THE DOMESTIC AIRWAYS TO SCHEDULED AIR CARRIERS AND NONSCHEDULED CIVIL AVIATION, 1925-1946

YEAR (Fiscal Year)	ANNUAL COST	PER CENT OF TOTAL PLANE-MILES ^a		COST ASSIGNED TO:	
		Scheduled Air Carriers	Non- scheduled Civil Aviation	Scheduled Air Carriers	Non- scheduled Civil Aviation
1925.....	\$ 295,212	29.7	45.7	\$ 87,678	\$ 134,912
1926.....	405,849	29.7	45.7	120,537	185,473
1927.....	603,518	29.7	45.7	179,245	275,808
1928.....	1,805,532	29.7	45.7	536,243	825,128
1929.....	3,325,789	29.7	45.7	987,759	1,519,886
1930.....	5,014,584	29.7	45.7	1,489,331	2,291,665
1931.....	7,123,798	48.2	28.8	3,433,671	2,051,654
1932.....	8,830,071	48.2	28.8	4,256,094	2,543,060
1933.....	7,755,874	48.2	28.8	3,738,331	2,233,692
1934.....	6,049,364	48.2	28.8	2,915,793	1,742,217
1935.....	6,472,373	41.2	32.8	2,666,618	2,122,938
1936.....	7,041,099	41.2	32.8	2,900,933	2,309,480
1937.....	7,215,327	41.2	32.8	2,972,715	2,366,627
1938.....	9,015,986	41.2	32.8	3,714,586	2,957,243
1939.....	10,224,295	34.7	40.6	3,547,830	4,151,064 ^b
1940.....	13,967,328	33.8	38.7	4,720,957	5,405,356 ^b
1941.....	16,735,935	31.2	17.0	5,221,612	2,845,109 ^b
Total (1925-41)	\$111,881,934	38.9	32.1	\$43,489,933	\$35,961,312 ^b
1942 ^c	\$ 35,328,290	20.7	8.7	\$ 7,312,956	\$ 3,073,561
1943 ^c	32,569,275	9.1	5.3	2,963,804	1,726,171
1944 ^c	26,372,000	7.3	3.1	1,925,156	817,532
1945 ^c	28,543,023	11.3	2.5	3,225,362	713,576
1946 ^c	34,128,000	32.0	3.0	10,920,960	1,023,840
Total (1942-46) ^a	\$156,940,588	16.1	4.5	\$26,348,238	\$ 7,354,680
Total (1925-46)	\$268,822,522	26.0	16.1	\$69,838,171	\$43,315,992

^a Estimated relative utilization of the airways in military flying from 1926 to 1938 available only by the periods indicated by the constant percentages.

^b Does not include flying under the civilian pilot training program, begun in 1939.

^c The cost assigned after 1941 is underestimated due to the inability of obtaining costs of providing the weather services used by civilian flyers. In the CAA study entitled *Charging for Federal Airway Services*, by Frederick B. Lee, the total cost of strictly aviation services is estimated to be \$2,665,396 for 1946; \$3,237,725 for 1947; and \$4,238,209 for 1948. In the same study (Part II, p. 16), the following estimate is made of the cost of airways in fiscal year 1947:

Maintenance and Operations (Exclusive of Weather Services).....	\$32,906,746
Amortization	2,857,402
Interest on Unamortized Investment @ 2.5 per cent.....	569,494
TOTAL	\$36,333,642
Aviation Weather Services.....	3,237,725
TOTAL (Including Weather Services).....	\$39,571,367

Mr. Lee estimates that the total cost of Federal airways for the fiscal year 1948 will be \$50,000,00.

Source: 1925-1941—Board of Investigation and Research, 79th Congress, First Session,

to collect total allocated airway costs. Only current costs of the government in the maintenance and improvement of the airways should be considered. To attempt the inclusion of past expenditures of the government would make the burden of payment an unreasonable one as would also any attempt to add an imputed rate of interest upon the government's investment.²⁹ It would appear reasonable that current investments in equipment should be amortized over the period of expected life, but no attempt should be made to pay for the undepreciated portions of previous investments in fixed equipment.

It might be well to judge even the current investments and expenditures of the Federal government in the light of what a prudent investor would invest and spend for operation and maintenance in view of the expected use and revenue. The use of this basis would eliminate any private financial responsibility for airway expenditures that were determined entirely by military requirements, or that were determined, largely, upon a political basis, or the desire of the government to open new areas to scheduled air-transport service prior to the time when the revenues arising from the provision of such service would be equal to the allocated costs. Also, it is unjustifiable to assess private flyers for facilities used only by the airlines, and to assess the airlines for facilities made available because of the requirements of private flyers.

The factors which should be taken into consideration in a conscientious attempt to allocate airway costs among the different users are difficult to include under a uniform system of adminis-

Public Aids to Domestic Transportation (1944), H.D. No. 159, Table 85, p. 479; 1942-1946—Annual cost: estimated from expenditures of C.A.A. for airways as reported in *The Budget of the United States*. Per cent of total plane-miles: 1942-1945, C.A.A. *Statistical Handbook of Civil Aviation*, p. 18; 1946, unpublished estimate by Dr. R. V. Hobbah of the Air Transport Association.

²⁹ For example, Mr. C. E. Childe has criticized the use of an imputed interest in the calculation of public aids to transportation. In part he says, "Imputed interest is not actually paid, but is a theoretical 3.5 per cent return on the entire unamortized public investment. . . . The amount of inflation added by this imaginary interest charge is astonishing. . . . If taxes were collected for the use of public highways, waterways, and airways, on the basis of such computed annual costs there would be returned to the Treasury billions of dollars in excess of the actual public outlay for construction and maintenance." (Board of Investigation and Research, *Public Aids to Domestic Transportation*, pp. 33, 34.)

tration. For example, itinerant and military flyers often cause the operators of the airways considerable trouble. In fact, the cost of meeting the needs of the itinerant and military flyer operating a small plane are very apt to be greater than the costs of meeting the requirements of a large transport plane. Also, because of the inability of the itinerant flyer to use certain well-accepted modern airway facilities it is necessary to keep in operation two systems at one time. This requirement is similar in some respects to the operation and maintenance of parallel concrete and gravel highways.³⁰ Attempts to allocate the cost of airways encounter the additional problem that the costs of airways are apt to be the greatest where their use is the least. The cost of constructing and maintaining an airway over the bad terrain of Nevada and Colorado is apt to be 200 per cent to 300 per cent greater than costs incurred on an airway over typical mid-western terrain.³¹ This relationship between utilization and cost necessitates the use of the much abused pricing concept of charging what the traffic will bear.

A study completed by the Civil Aeronautics Administration in the Spring of 1947 entitled *Charging for Federal Airway Services*, by Frederick B. Lee (Part IV, p. 3), provides data regarding the utilization of airway facilities by different categories of plane operators. One type of service provided by the CAA is that of airport traffic control towers. The operation of these towers is part of the provision of airway facilities. The contacts made by these towers in 1945, which were with domestic airlines, accounted for only 3.0 per cent of the total contacts made. Many of this rather small number were considered unessential by the airlines.

The Air Transport Association has the following to say regarding the utility of airway beacon lights:

These facilities are of no essential navigational assistance to the scheduled airlines. The airlines, generally speaking, do not operate under the contact principle whether the flight is actually proceeding under instrument conditions or not. It is a well known axiom among airmen that when you

³⁰ An example of this is the present use of the low frequency system along with VHF ranges. The need of the airlines for rotating beacons and emergency landing fields is much less than in the case of itinerant flyers.

³¹ From notes taken when conversing with Frederick B. Lee of CAA in June, 1946.

can see you do not need the lights and when you need the lights you cannot see them.

The percentage of fix postings that are allocated to the various categories of air travel is another measure of use of airway facilities. During 1946 about 75 per cent of fixed postings were allocated by CAA to the scheduled air carriers. The remaining 25 per cent was divided about equally between "other civil" and "military."

The percentage of instrument approaches that are allocated to the scheduled air carriers is even greater than that of fix postings. In 1946, about 80 per cent of all instrument approaches was allocated by the CAA to the scheduled air carriers with the remaining 20 per cent divided about equally between "other civil" and "military."

Another measure of utilization of airway facilities is that of aircraft operations handled by airway traffic control centers. Here again, the percentage which is allocated to the scheduled air carriers by the CAA is greater than the per cent of total plane-miles allocated to scheduled air carriers. In 1946, about 50 per cent of operations handled by traffic control centers were allocated to scheduled air carriers, with 7 per cent considered "other civil," and 43 per cent classified as "military."

The scheduled air carriers make practically no use of intermediate landing fields maintained by the CAA. In 1946, only 0.4 of 1 per cent of landings on these fields was allocated to scheduled air carriers. The category "other civil" accounted for 88.7 per cent of the utilization of the fields in 1946, and "military" in the same year accounted for 10.9 per cent.

Each of the above measures can be used with considerable justification as a measure of airway utilization. However, the analysis in this study is based on the "plane-mile-flown" comparison. This basis is selected because it is just as good a measure of utilization of airways as any of the other single measures, and, in addition, it has the advantage of being related more closely to airline revenues and accepted measures of tax liability. In addition, plane-miles-flown is about midway between the extremes of several of the measures of airway utilization.

It is realized that the discussion of the allocation of airway costs has been inconclusive. This is perhaps the necessary case. Various methods of allocation will only yield approximations. The final figure determined upon will always be, to a certain extent, "picked from a hat." When allocation is finally determined upon, a method of collection must be selected.

REVENUE SOURCES

The collections could be made by a tax measured by airplane-miles, revenue-miles, and passenger-miles graduated by pay-load, horse-power and type of use made of airways. The use of ratios composed of these various types of data would very likely yield an amount of revenue most nearly approaching the just portion of the allocated cost to be paid by the various airlines and itinerant users. However, the difficulties encountered in administering such a tax are nearly insurmountable. It would also be possible for the Federal government to tax commercial users of the airlines in a manner similar to that used by the states in the taxation of trucking companies and railroads, namely, a gross revenue tax. This tax when levied upon the airlines would have the same defects that have been observed in its use in taxing trucking companies and railroads. The burden of the tax is much greater when collected from revenues received in the carrying of low-cost cargo than when collected from revenues arising from high-cost cargoes. Thus the tax would tend to place a greater burden upon the rising freight lines than it would upon the better-established passenger airlines.

A gross revenue tax could be improved by applying rates which vary directly with the ton-mile charges. This would greatly increase administrative costs and would bring forth interminable disputes regarding the proper tax rates to be applied to the various revenue sources. Also, the tax could be made less burdensome if small operators were exempted by making the tax applicable only if gross revenues reached a certain height. This modernized version of a gross-revenue tax would undoubtedly bring in revenues; it is doubtful, however, if it would bear any close relationship to airway utilization. The tax appears to have no particular advantage but does continue to possess, to a degree, the weak-

nesses of all taxes levied on gross receipts. It must be mentioned, also, that the levy of the tax would increase government expenditures to mail-subsidy lines and would tend, also, to increase government expenditures to compensatory airlines.

A transportation tax would be similar to a gross-receipts tax, the advantage to the airline is that the tax is slightly easier to shift than the gross-receipts tax. However, if airline rates are correctly set at the time the taxes are assessed there should be little difference between the shiftability of a gross-revenue tax and a transportation tax. The transportation tax rates could, of course, also vary between different types of cargo. Also, this tax would again increase the cost of airline services purchased by the Federal government and would not be closely related to airway utilization. As a method of general taxation of airlines it would possess the disadvantages of all taxes assessed upon consumption expenditures, and of taxes measured by gross rather than net returns.

It has been mentioned that airlines could repay the Federal government for its expenditures upon airways by giving the Federal government reduced rates upon the airline services which it purchases. The advantage of this method is that the government could directly benefit without placing an additional economic burden upon air transportation. The method would be similar in its effects to a net income tax in that the greater quantity of gross rate reductions would be made by the well established passenger airlines which are also the principal payers of the Federal corporate income tax. This method would also be only incidentally related to airway utilization, perhaps even less so than a net income tax.

A tax on revenue-miles flown would be more directly related to airway utilization than either of the other airline tax innovations discussed above. The weakness arises from the difficulty of calculating miles flown and the application of different weights to miles flown by various sized planes and also by planes receiving different monetary return for miles flown. The difficulties of the revenue-miles-flown scheme can be largely eliminated and the relationship of the measure to utilization of airways maintained by the use of a tax upon gasoline consumed.

It is doubtful if a use tax should vary merely because the utiliza-

tion is commercial rather than non-commercial. It is even more doubtful whether the collections should be greater if use is commercial rather than non-commercial. There are many sound reasons for favoring a greater tax burden upon non-commercial use of a facility than upon commercial utilization. The gasoline tax is neutral in its relative effect upon commercial and non-commercial users of airways. The tax tends to be a greater burden upon small non-profit and freight companies but it perhaps sins less in this respect than various types of gross-receipts taxes. The tax is definitely closely related to airway utilization. In addition, the tax is familiar and the administrative problems are not great.

It has been frequently mentioned that the best available method to collect for the use of the airways is to assess a Federal gasoline tax sufficiently high to bring forth the desired revenues. The arguments offered in favor of a Federal tax upon aviation fuel that would be considerably higher than the present tax of 1.5 cents are impressive and cannot be ignored. The fourth recommendation of the Board on Carrier Taxation is as follows:

4. That the Federal tax on gasoline be identified as a user tax, the tax on aviation gasoline being segregated for application to Federal airways by reference to the octane rating of the fuel or by requiring that such gas be given a distinctive color, and the tax on other gasoline being applied as highway-user tax.³²

The same Board recommended that the Federal tax upon lubricating oil be removed. A detailed discussion of the gasoline tax is given in Chapter IV.

It is estimated that the state and Federal motor-fuel and lubricating-oil tax collections from the seventeen domestic airlines will be about \$4 million in 1946, or \$6.9 million short of the estimated amount the Federal government will spend upon the Federal airways that should be allocated to airline users. Assuming a continuation of the present rate of expenditure upon airways and, also, a continuation of the rate of increase of domestic airline travel of the order experienced during the period just prior to the war, the allocated portion of the cost of the Federal airways could be paid by the airlines with the assessment of a gasoline tax of 3

³² Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, House Document No. 160, p. 1.

cents rather than the present 1.5 cents, and also a doubling of the lubricating-oil tax. Assuming that profits of the various domestic airline companies are in direct proportion to the amount of gasoline and oil consumed, the increase of this tax rate would reduce the receipts of the corporate income tax by about \$3 million. Rather than assessing additional taxes upon gasoline consumed, it might actually be preferable to consider \$6.9 million of the approximately \$16 million which airlines will pay in income taxes in 1946 as repayment to the government for airway facilities provided.³³

If the profits of the various airlines are approximately proportioned to gasoline consumption, it will be possible for the airlines to pay an additional \$6.9 million to cover their share of the costs of the airways (if gasoline taxes are considered user payments and income taxes are not), and increase the amount they pay to the Federal government in taxes by only approximately \$3.9 million. The assumptions of incidence and shifting are of the simplest possible order and are presented only as a basis for each individual to make his own estimates. It is quite possible that a portion of the increased tax bill will be shifted backward to the oil companies, and also possible that a portion of it will be shifted forward to the airline customers.³⁴

The airways, with rare exceptions, are not crowded. It is difficult to estimate how much additional air traffic the present airways and airway traffic-control equipment could handle, but, undoubtedly, a three to ten-fold increase could be taken care of with only a modicum of increase in expenditures. Thus it is quite possible, if scarcity of materials do not restrict aircraft production, that 1950 traffic would be sufficiently heavy to provide enough revenue from a 1.5-cent or 2-cent gasoline tax to repay the Federal government for the expenditure upon airways which should be allocated to the airlines.

³³ Beginning August 15, 1946, CAA will assess a \$15 fee for Federal registration and recordation of all aircraft titles—anticipated income, \$238,750. An additional \$8,400 will be collected for the issuance of air agency certificates. The expected expenses for these services are \$240,000 (*American Aviation*, August 1, 1946, p. 20).

³⁴ "With reference to carrier taxation, the point must be kept constantly in mind that the carriers are tax collectors, rather than taxpayers, in that the taxes they pay are passed along to consumers in the levels of transportation charges which enter into commodity prices. Taxes on carriers, therefore, are similar to sales taxes." (Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, p. 13.)

CHAPTER IV

GASOLINE TAXES

Gasoline is taxed by the Federal government and all of the state governments. However, in most states, gasoline tax laws are worded in such a manner that the tax is paid only by those who use the gasoline to operate motors used as the power to move vehicles along public highways. However, the Federal gasoline tax has no such relationship to the final use made of the fuel and is paid upon every gallon of gasoline, whatever the final method of consumption might be.

At present the Federal tax is 1.5 cents a gallon and is collected from the refiner or importer.¹ Although this is not a high gasoline

In the CAA study *Charging for Federal Airways Services* (Part VI, p. 7) Federal gasoline tax collections, assuming a tax rate of 1.5 cents per gallon, are estimated to be:

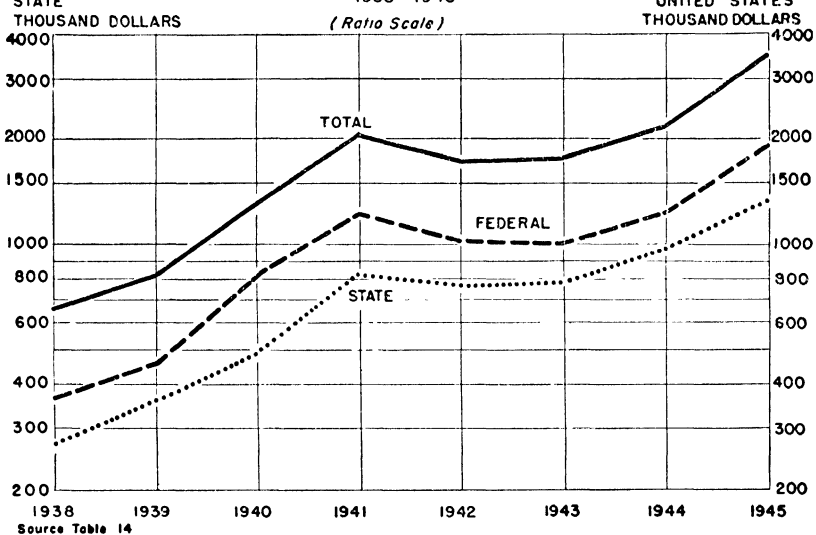
	1948		
Domestic Carriers.....			\$2,850,000
Private Carriers and Personal Aircraft.....			2,475,000
Total Gasoline Tax.....			\$5,325,000
	1950		
	<i>Conservation</i>	<i>Moderate</i>	<i>Liberal</i>
Domestic Carriers.....	\$3,375,000	\$ 5,760,000	\$12,050,000
Private Carriers and Personal Aircraft..	4,800,000	4,800,000	4,800,000
Total Gasoline Tax.....	\$8,175,000	\$10,560,000	\$16,850,000

tax, the Federal government collects about one-third more from airlines in gasoline taxes than do the states (Table 14 and Chart 7). The rate of tax levied by the twenty-four states which assessed some sort of tax upon aviation gasoline as of July 12, 1946, varied from 7 cents per gallon in Tennessee to four-tenths of a mill in Texas.

STATE GASOLINE TAX LEGISLATION

The state legislation which has been passed dealing particularly with the taxation of gasoline used in aircraft is of interest.

¹ Federal tax was imposed at 1 cent per gallon on June 21, 1932. On June 17, 1933, it was increased to 1.5 cents per gallon; on January 1, 1934, decreased to 1 cent per gallon; and on July 1, 1940, increased to 1.5 cents.

CHART 7—GASOLINE TAXES, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES
1938–1945TABLE 14—GASOLINE TAXES PAID TO FEDERAL AND STATE GOVERNMENTS,
SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, 1938–1945

TAXING UNIT	GASOLINE TAXES PAID (In Thousands of Dollars)							
	1938	1939	1940	1941	1942	1943	1944	1945
State	\$281	\$345	\$ 495	\$ 803	\$ 751	\$ 773	\$ 953 ^a	\$1,393 ^a
Federal	373	466	830	1,209	1,017	1,000	1,213	1,773
Total: State and Federal	\$654	\$811	\$1,325	\$2,012	\$1,768	\$1,773	\$2,166	\$3,166

^a Computed on the assumption that state gasoline taxes in 1944 and 1945 were the same percentage of total gasoline taxes as in 1943—44 per cent.

Source: 1938–1943—Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, H.R. No. 160, Table 85, p. 322, and Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, House Document No. 141, p. 75; 1944–1945—Carrier's Monthly reports, C.A.B. Form 2780.

This is true not only because of the variety of tax concepts indicated, but also as an indication of the trend which can be expected in state gasoline tax legislation of the future. For it is undoubtedly a fact that the reason many states do not tax gasoline used in airplanes is that they have not gotten around to amending legislation passed when the airplane was a very unimportant means of public and private transportation.

TABLE 15—STATE AVIATION GASOLINE TAX RATES, REFUNDS AND EXEMPTIONS, BY STATE, 1946 (*as of July 12, 1946*)

STATES	TAX RATE ON MOTOR FUEL (Cents per gallon)	REFUND AIRCRAFT	REFUND NON-HIGHWAY USE	EXEMPTION AIRCRAFT	TAX ON AIRCRAFT FUEL (Cents per gallon)	USE MADE OF FUNDS
Alabama	6			*	6	Aviation
Arizona	5		X			
Arkansas	6½		X	X		
California	3					
Colorado	4	X				
Connecticut	3		X			
Delaware	4	X				
District of Columbia	3	X				
Florida	7			X*		
Georgia	6			*	6	Highways and schools
Idaho	6				2½ ^a *	Aviation
Illinois	3		X			
Indiana	4	X				
Iowa	4	X				
Kansas	3*			X*	1*	
Kentucky	5	X*				
Louisiana	7				7*	Highways
Maine	4				4	Aviation
Maryland	4	X				
Massachusetts	3		X			
Michigan	3	1½*			3 ^a *	Aviation
Minnesota	4	X*				Aviation
Mississippi	6		5		1	Highways
Missouri	2		X			
Montana	5	4			1	Aviation
Nebraska	5	*			5 ^a	20% to relief 80% to aviation
Nevada	4		X			
New Hampshire	4		X			*Aviation
New Jersey	3	X				
New Mexico	5		*			
New York	4		X			
North Carolina	6			X*		
North Dakota	4			X*		
Ohio	4	3			1	General Fund
Oklahoma	7½			4½	3	*
Oregon	5	4			1	Aviation
Pennsylvania	4				4	*
Rhode Island	3				3	Gen. Fund for Approp.
South Carolina	6	*			6	Aviation
South Dakota	4				4	Aviation
Tennessee	7				7	Aviation
Texas	4	X*				
Utah	4				4	Aviation
Vermont	4				4	*
Virginia	6	2 or 5			*	Aviation
Washington	5			X		
West Virginia	5	X*				
Wisconsin	4	X				
Wyoming	4	2*			2	For local airports

* Aviation fuel is taxed by separate act instead of under gasoline tax law.

* See Notes accompanying name of state following table.

Source: National Highway Users Conference, Unpublished Summary dated July 12, 1946.

The state taxes levied upon aviation fuel are summarized in Table 15 and the accompanying notes. Typical state legislation is discussed briefly below.

Minnesota—In effect, the Minnesota law provides for the exemption of the large airlines from the payment of the greater portion of their gasoline tax. The law provides for a refund of from 1 cent to 3.5 cents per gallon depending on the amount of

NOTES

- Alabama..... By regulation issued November 17, 1939, sales of gasoline are exempt when made to any civil school of aeronautics under contract with the United States Government for gasoline used solely in airplanes owned by the United States and operated for training United States Air Corps flying cadets.
- Florida..... Aviation fuel testing 78 octane or higher is not taxed.
- Georgia..... Sales of gasoline to military air service are exempt if purchases are supported by federal exemption certificates.
- Idaho..... By a separate act, Laws 1933, Chapter 196, a tax of 2.5 cents per gallon is imposed on all airport fuel.
- Kansas..... Laws 1945, S.B. 306, provides for a temporary 1-cent increase in motor-fuel tax upon the happening of specified contingencies but failed to provide any exemptions on the increase. Fuel resold by exemption permit holders for delivery into tanks of airplanes are exempt. Also 40 or more gallons, for any purpose other than operating motor vehicles on public highways are exempt.
- Kentucky..... Refunds are granted on gasoline used by commercial aircraft in interstate commerce on regularly scheduled flights on compliance with statutory requirements. Laws 1942, Chapter 157; Baldwin's Ky. R.S. 1943, Sec. 138-345-6.
- Louisiana..... Fuel used by airlines certificated by the CAB, engaging in interstate commerce and bonded by the state is exempt from taxation. All other operators of aircraft must pay the tax.
- Michigan..... Aviation fuel is taxed by separate act, Laws 1931, Act No. 160. On gasoline used in aircraft 1½ cents of the 3 cents per gallon tax is refunded to airline operators operating interstate on scheduled flights.
- Minnesota..... Laws 1945, Chapter 412 (H.B. 883) imposes a tax of 4 cents per gallon on motor fuel used in aircraft subject to

refund of from 1 to 3.5 cents per gallon depending on amount of calendar year purchases. Effective 6-1-45.

- Nebraska.....Aviation fuel is taxed by separate act, Laws 1935, Chapter 3; R.S. 1943, Section 3-117. Tax on motor fuel used in aircraft in connection with any school of flying instruction approved by the United States Government is refunded.
- New Hampshire..Any balance of unrefunded tools (tax) on fuels used in aircraft is to be credited to commission having jurisdiction over aircraft and used to promote safety in air navigation. Laws 1943, Chapter 65, Sec. 41.
- New Mexico.....If 50 or more gallons are purchased at one time.
- North Carolina...Gasoline designed for and sold and used solely in aircraft motors.
- North Dakota...Under ruling of State Auditor aviation gasoline is sold tax exempt if purchased through a registered dealer.
- Oklahoma.....1 cent is imposed on aviation fuel by Laws 1941, Chapter 18b (H.B. 524) approved and effective 5-20-41. No specific provision was made respecting exemption of gasoline used in aircraft in Laws 1945, H.B. 470 which temporarily increased the gasoline tax by 2 cents per gallon from 4-16-45 to 12-31-46.
- Pennsylvania....Tax on aviation fuel is paid into Motor License Fund from which appropriations are made to aeronautics commission. Records indicate recent biennium 1942-1944 appropriation is practically equal to aircraft fuel revenues.
- South Carolina...Tax refunded on gasoline sold to any Army Primary Aviation School and certified to be used in planes owned by U.S. and used in training cadets, students or trainees, actually enlisted in the United States Air Corps and used under supervision of Army. Laws 1941, Act. No. 256; Code 1942; Sec. 2520-2.
- Texas.....Less 1 per cent deduction allowed distributors. Laws 1943, H.B. 247; Title 122, Chapter 1.5, Art. 7057.63.
- Vermont.....\$2,000 appropriated annually from proceeds of tax on gasoline used in aircraft for aeronautical purposes. To carry out purposes of Aeronautics Act of 1945, there is appropriated from the proceeds of the tax on gasoline used in aircraft for the fiscal year ending 6-30-46, \$9,400, and for the fiscal year ending 6-30-47, \$11,800.
- Virginia.....Grants full refund to interstate operators of aircraft. Interstate consumption and gasoline used for that part of

interstate trips which flight logs show to have been within Virginia will qualify only for a 2 cents per gallon refund. Laws 1942, Chapter 206.

West Virginia. . . . Refunds on purchases of 25 or more gallons when used in aircraft. Laws 1939, Chapter 125.

Wyoming. On purchases of 10,000 or more gallons per month for use in aircraft city, town or county where airport is located is required to refund 2 cents of the 4 cents per gallon gasoline tax; unrefunded 2 cents is to be used for maintenance of such airfields. Laws 1935, Chapter 72, Sec. 7; Code Supp. 1940, Sec. 115-1108.

calendar-year purchases. The maximum refund of 3.5 cents is given on purchases of over 50,000 gallons which is not disposed of to others. Despite these exemptions the net collections from the tax upon aviation gasoline was \$76,512.73 for the fiscal year ending June 30, 1946.²

Kentucky—Kentucky legislation states that the gasoline tax paid will be refunded if the gasoline is used for the operation of aircraft engaged in the interstate transportation of persons and property.

Michigan—Michigan legislation provides for the refund of 1.5 cents of the 3-cent-a-gallon tax paid if the gasoline is used in planes on scheduled interstate operations.

Virginia—In Virginia only a 2-cent-per-gallon refund is allowed on gasoline purchased by intrastate operators of airplanes and to interstate carriers on that portion of the gasoline which is used in propulsion of planes within the borders of Virginia. A 5-cent-per-gallon refund is permitted on other gasoline consumed by airplanes.

Wyoming—The Wyoming law states that if an airport purchases more than 10,000 gallons of gasoline per month, the municipality and county must refund 2 cents of the 4-cent tax paid. This is practically tantamount to a reduction by 50 per cent of the tax on gasoline used in aircraft.

If a trend can be deduced from these examples of legislation

² For the twelve month period ending August, 1946, the Minnesota gross aviation fuel collections were \$163,064 and refunds totaled \$82,076, giving a net figure of \$80,980. (Letter dated August 16, 1946, from G. Howard Spaeth, Minnesota Commission on Taxation.)

dealing with aviation fuel and the notes following Table 15, it would perhaps be that the states are tending to place a lighter burden upon gasoline used by large interstate transport lines than upon gasoline consumed by small operators mainly concerned with local flying. Also, recent legislation indicates a trend toward higher state taxes upon aviation fuel.³

Nebraska is one of the states that levies the full amount of the gasoline tax upon all gasoline used by airplanes. The tax, which resulted in revenues of only \$83,000 in 1941, raised \$396,583.94 from airplane operators in 1945. Of the total yield in 1945, about \$300,000 will be used for the expansion of small local airports. It is estimated that 80 per cent to 85 per cent of the tax paid is paid by airlines but the money raised is used to develop airport facilities which are of "little or no use to them."⁴

Similar situations are apt to exist in all states collecting taxes from air carriers, also, because of this relationship between collection and expenditure, it is very likely that small operators of aircraft will press their state legislatures to collect additional funds from the air-transport industry to be used to improve local airport and airway facilities. Typically, the state has never been a large contributor to the financial support of airports used by the principal airlines. It can be expected that a counter pressure will be exerted by the large cities which do contribute substantial sums to the support of airports used by the major airlines. These cities will demand that taxes collected from planes using airport facilities partially provided by them be made available to them to be used in meeting the expenses of the airport.

GASOLINE CONSUMPTION

The total amount of gasoline consumed by domestic airlines has, of course, risen with the increase in the amount of air travel (Table 16).

³ Segregated proceeds of state taxation of aviation gasoline allocated for aviation purposes: 1944—\$1,284,000; 1945—\$1,212,000. (Public Roads Administration, Federal Works Agency, *State Motor Fuel Tax Receipts*, 1945, Table G-1, issued 1946 and Table G-1, 1944, issued June, 1945.

⁴ From information received by the author from correspondence with I. V. Packard, Director of the Nebraska Department of Aeronautics.

TABLE 16—FUEL CONSUMED, NUMBER OF PLANES, AND DAILY AVERAGE MILES FLOWN, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, 1938-1945

CALENDAR YEAR	GASOLINE (Gallons)	OIL (Gallons)	NUMBER OF PLANES	DAILY AVERAGE MILES FLOWN
1938.....	37,218,743	644,768	253	190,873
1939.....	46,554,856	726,507	265	226,223
1940.....	64,906,284	1,087,208	346	297,269
1941.....	80,757,892	1,258,983	359	364,446
1942.....	68,030,246	898,103	179	301,652
1943.....	63,908,388	878,923	194	283,840
1944.....	88,143,732	1,238,941	228	390,974
1945.....	145,500,000	2,037,000	279	.....

Source: 1938-1943—Air Transport Association of America, *Air Transportation Today and Tomorrow*, 1945, p. 12; 1944 and 1945—Calculated from *Statistical Handbook of Civil Aviation*, December, 1945.

However, the improvements which have been made in airplane design and the increased passenger load have reduced the amount of gasoline consumed in moving a passenger a given distance by air. In 1930, domestic-airline planes consumed 136,000 gallons of gasoline to fly one million passenger miles; in 1935 it required only 86,000 gallons to accomplish it, and in 1944, only 38,000 gallons. Despite the improvement which the domestic airlines have experienced in the gasoline consumed per passenger-mile ratio, it is still true that it requires from seven to twenty times as much gasoline to transport a passenger one mile by air as it does to transport him one mile by bus. For this reason, and because most of the money collected from state gasoline taxes goes for facilities that are of no value to the airlines, and, also, because most of the money is collected from the airlines, many air-transport enthusiasts are of the opinion that a state gallonage tax on fuel is, by far, the most unfair method of taxation that could be imposed upon scheduled airlines.

The expenditure upon motor fuel and motor-fuel taxes is a considerable portion of the total expenses of all air-carriers. Of the total flying-operations-expenses-per-mile of 18.93 cents, 6.77 cents is used to purchase motor fuel and an additional 1.47 cents to pay taxes upon aircraft engine fuel. This total of 8.24 cents is 43 per cent of flying-operations expenses and is about 10 per cent of the total operating expenses of 83.46 cents per mile. The

expenditure upon engine oils is an additional 0.33 cents per mile, and the engine oil tax, 0.05 cents.⁵

Table 17 shows the relationship between gasoline consumed and the total tax paid. This is perhaps the most important single comparison which can be made regarding the trend of the tax upon aviation fuel.

The tax per gallon of gas consumed by the seventeen domestic airlines rose from 1.76 cents in 1938 to a high of 2.77 cents in 1943 and then decreased during both 1944 and 1945. This relationship

TABLE 17—TOTAL GASOLINE CONSUMED, TOTAL GASOLINE TAXES PAID AND PER CENT CHANGE FROM PRECEDING YEAR, SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES, 1938-1945

YEAR (Calendar)	Gasoline Consumed (Gallons)	Total Gasoline Tax (in thousands of dollars)	Tax Per 100 Gallons	PER CENT CHANGE FROM PRECEDING YEAR	
				Gasoline Consumed	Gasoline Tax Paid
1938.....	37,218,743	\$ 654	\$1.76		
1939.....	46,554,856	811	1.74	+25.1	+24.0
1940.....	64,906,284	1,325	2.04	+39.4	+63.4
1941.....	80,757,892	2,012	2.49	+24.4	+51.8
1942.....	68,030,246	1,768	2.60	-15.8	-12.1
1943.....	63,908,388	1,773	2.77	- 6.1	+ 0.3
1944.....	88,143,732	2,166	2.46	+37.9	+22.2
1945.....	145,500,000 (est.)	3,166	2.17	+65.1	+46.2
Total ...	595,020,141	\$13,675	\$2.30		

Source: Tables 14 and 16.

between gas consumed and total gasoline tax collections is strikingly illustrated by the per cent of change from the preceding year. For example, in 1943 when gasoline consumed decreased by 6.1 per cent, the collections from the gasoline tax increased 0.3 per cent. In 1945 gasoline consumption by the domestic airlines was up 65.1 per cent but total gasoline tax payments increased only 46.2 per cent from 1944 to 1945.

These changes in the relationships between the amount of gasoline purchased and the total gasoline taxes paid have been largely the result of increases and decreases in the amount of state gasoline taxes paid. The situation in 1940 is an exception. The

⁵ Civil Aeronautics Board, Economic Bureau, Accounting and Rates Division, *Annual Airline Statistics of Domestic Carriers for Calendar Year 1944* (1946) pp. 28, 29. For additional motor fuel tax data see Tables 1 and 4, Appendix A.

Federal gasoline tax increased from 1 to 1.5 cents on July 1, 1940. The increase by approximately one-fourth cent in average tax per gallon of gasoline in 1940 over that of 1939 reflects this one-half cent rise for the last six months of 1940. The amounts of gasoline taxes paid to the various states are largely determined by two factors, namely: (1) the gasoline tax rate prevailing in the different states, and (2) the ability of the airlines to purchase their gasoline in the no-tax and low-tax states. The state gasoline tax rates applicable to aviation gasoline have continued upward in 1944 and 1945 in many states (See notes to Table 15), thus the reduction in the average gasoline tax paid upon a gallon of gasoline indicates an increasing ability on the part of the airlines to avoid the purchase of gasoline in the high-tax states.

POINTS OF VIEW RELATIVE TO THE TAX

In view of the historical development of the gasoline tax and its continued close relationship to the benefit concept, its carryover to the air-transport industry presents a number of problems. The Federal tax upon gasoline consumed by airlines is usually considered to be a fair method of obtaining revenue from the airlines for the investment and the annual maintenance expenditure of the Federal government upon airways.

A review of the discussion of the taxation of airplane fuel reveals a number of points which can be considered basic in the understanding of the tax. The most important of these are summarized below.

1. The fact that airplane fuel is taxed is largely the result of the fact that gasoline is used both in automobiles and airplanes, and that the taxation of automobile fuel is well established.
2. The gasoline tax was developed as a user tax, a highway-user tax. The airplane, of course, does not use the highways.
3. The tax was levied to defray expenses incurred by the states in providing highways for automobiles. The states have not spent any considerable sum of money to provide facilities for airplanes.
4. The payment of a gasoline tax is not an equitable method to collect funds to be used in the construction or maintenance of airports.
5. A Federal airplane-fuel tax is a desirable method to be used by the Federal government to recoup the funds spent upon airway development.
6. A large portion of the *collections* made by states in their imposition

of the airplane-fuel tax comes from scheduled domestic airlines while a large portion of the *expenditures* are for the sole benefit of owners of planes for private use or of nonscheduled carriers.

7. The taxation of airplane fuel is an unjustified levy which will retard the development of the industry, and provide the industry with an artificial disadvantage in its competition with railroads.

Many of these points are obvious and are freely admitted by all parties; others have been discussed in considerable detail in connection with other segments of this study.⁶

STATE ATTITUDES

It is felt by some state tax officials and by tax experts attached to companies concerned with competitive means of transportation that the state taxation of gasoline used by airlines should not be considered a serious problem or one that should involve injustice or that should prevent the natural expansion of the domestic air-transport industry. It is pointed out that the funds collected from the aviation gasoline tax by the states are used to provide facilities for the industry in the same manner as have been the funds collected from the automobile gasoline tax. For example, the Director of the Petroleum Division, Minnesota, is quoted in the report of the Civil Aeronautics Board, *Multiple Taxation of Air Commerce* as follows:

A brochure of the State of Michigan showing its accomplishments over the 15 years of aviation taxation, is astounding when we consider the developments of airports, beacon systems, and other sundry air-commerce necessities. Other States have had similar developments and after years of experience will be able to show like accomplishments.⁷

However, one state tax official stated that his state "would not seem to have any immediate right to tax aviation gasoline."⁸ Another tax official recommends that all aviation gasoline should be taxed, but that the portion of the tax collected from gasoline used in commercial airplanes should be made available to the Federal government. The taxes collected from gasoline consumed in other

⁶ See pages 28-45 and pp. 116-118.

⁷ Haedecke, E. B., Director, Petroleum Division, Minnesota, *Multiple Taxation of Air Commerce*, p. 124.

⁸ Long, Henry F., Commissioner of Corporations and Taxation of Massachusetts. *Ibid.*, p. 132.

planes should be available to the states and each state should determine the rate it would assess upon this gasoline.⁹

It appears doubtful if the states will at any time provide facilities for the use of airplanes which would justify the taxation of aviation fuel in the sense that the provision of highways for automobiles has justified the state taxation of automobile fuel. However, there is the argument that the funds spent for small airfields and feeder airlines will, in time, become very helpful to the airlines. Nevertheless, it is doubtful whether forcing the airline companies to pay for these facilities prior to the time when the airlines themselves will derive a direct financial benefit can be justified. The levy is particularly questionable during a period when the industry is already receiving and is enjoying many public benefits for which it is only partially able to pay, and, also, when the airlines are engaged in a very active competitive battle. However, it would appear as though there would be considerable justification for the states to levy a tax upon gasoline used by private users of planes and intrastate carriers. Such a tax would become a means whereby the air enthusiasts of the state would provide part of the funds necessary for improvement of state facilities. Certainly, in this latter sense, the state taxation of airplane fuel cannot be considered an unjust burden.

ECONOMIC CONSIDERATIONS

The State aviation gasoline taxes, undoubtedly, have had some effect upon the air routes followed and the manner in which domestic airlines have developed. Certainly, if at all possible, the airlines will purchase their fuel in tax-free areas. However, the extent to which this can be accomplished is definitely limited by the necessity that airlines provide service to those areas having a high passenger and freight potential, and by the fact that the more gasoline carried in the plane the smaller the pay load. Unnatural development of an industry brought about by the type of taxes levied is certainly, under all conditions, undesirable.

It is virtually impossible to determine the tax burden borne by

⁹ Ayers, E. W., Chief of the Gasoline Tax Division, North Carolina, *Ibid.*, p. 132.

the types of fuel used by the railroads and the type used by the airlines. However, it is readily realized that a direct tax paid upon one type and not upon another does not mean that the one upon which a direct tax is paid bears a greater tax burden than the other. The taxation of coal varies depending upon the area in which it is mined and processed; this is true, also, of petroleum products which are used by both railroads and airlines. However, in the case of petroleum products most of those used by the railroads do not bear an additional user-tax burden as is the case of fuel used by airlines. To this extent certainly the tax burden borne by airline fuel is greater than that borne by railroad fuel. In addition to coal and petroleum products, the railroads use a great amount of electric power, much of it hydro produced. It is perhaps fairly accurate to assume that the tax burden placed upon coal, electricity, and petroleum is approximately the same up to the point where an additional user tax is placed upon gasoline. If this is true then the levy of the gasoline tax is not justifiable as a general revenue measure, but must always be closely associated with the expenditures made to aid the payer of the tax. This is true, unless it is considered socially desirable to place a heavier tax burden upon those who use gasoline.

In another sense, however, the whole discussion of the relative tax burden placed upon various types of fuel is irrelevant. Taxes can be considered the same as other costs. If one type of transportation uses a fuel that is more expensive than another, then, in order for that type of transportation to exist, it will be necessary for it to effect substantial economies in other areas. It is doubtful if many businessmen have such a fatalistic attitude toward taxes. Certainly, the vast majority of government and business leaders see that taxes are ways in which the government collects revenue, and that there are a number of alternative ways in which the desired revenues may be obtained. Some methods will place a greater burden upon particular groups, businesses, and individuals than others, and it is up to those concerned to do everything in their power to point out the advantages and disadvantages of particular schemes under consideration. This latter point of view is

the one possessed by groups interested in the imposition of taxes upon airplane fuel. It is our purpose to examine these claims and judge them upon the basis of the community's well-being.¹⁰

LEGAL ASPECTS

The taxation of gasoline by the states has been the subject of a number of United States Supreme Court decisions. These decisions have been important in the determination of the direction and limits of development of the state gasoline tax. It is possible, under a few leading Supreme Court decisions, to summarize what the states can do and cannot do in the way of gasoline-tax levies, if additional Federal legislation is not passed.

State gasoline taxes are considered to be of three distinct types. The tax may be (1) a use tax, (2) a tax upon the purchase, or (3) a tax upon storage and withdrawal of gasoline. Certain definite and separate restrictions appear to be applicable to each type.¹¹

Use Tax—A tax levied by a state upon gasoline used in interstate commerce which is termed an use tax possesses certain general specifications. The tax is not legally considered a tax upon gasoline but rather it is a payment for the use of certain facilities usually state provided. This tax is measured by the amount of gasoline used within the area in which the government has made provision for the facility utilized by the taxpayer. In order for the tax to be acceptable to the United States Supreme Court and not considered a burden upon interstate commerce, the item (gasoline in this case) must be considered a good measure of the use made of the facility by the taxpayer, and, in addition, the amount collected must be an approximate equivalent (at least it cannot be a great deal larger) of the cost of providing the facility by the governmental unit receiving the tax. If a tax is an use tax, it is,

¹⁰ Additional detailed information regarding state taxation of airplane fuel is given in Appendix A, Tables 4, 6, 9 and 10.

¹¹ The following classification was used by Professor John A. Eubank:

1. A tax on the sale of gasoline within the state.
2. A tax on the use or consumption of motor fuel within the territory of the taxing jurisdiction.
3. A tax on gasoline as property within a state, after it has been brought into a state, stored, withdrawn, used or sold.

(*Aero Digest*, Vol. 38, February, 1941, p. 102.)

of course, not necessary that fuel used as a measure be purchased in the state assessing the tax.¹²

Sales Tax—It is not necessary that a gasoline tax which is a sales tax have any relation to the benefits received by the payer from the government receiving the tax payment. Thus, at least up to the point where the tax is not considered a burden upon interstate commerce, states can legally levy sales taxes upon gasoline without providing the airlines with any special benefits. Certainly, sales taxes levied upon aviation fuel could be as high as those levied upon gasoline purchased by busses and trucks before they would be considered by the United States Supreme Court to be a burden upon interstate commerce.

The legality of these state gasoline sales taxes is obviously based on the right of a state to tax various goods used by businesses operating in a state. If this right were limited to only those goods used to produce goods not going into interstate commerce, a tax upon goods purchased and sold in a state would become unenforceable and impractical. The important point regarding a sales tax is the area where the transaction takes place. If it is within the jurisdiction of the government levying the tax, then the tax, up to a maximum indicated above, is a constitutional levy.¹³

Several court decisions have recently dealt with the levy of a sales tax upon gasoline consumed by airlines. However, the leading decision is undoubtedly that handed down by Mr. Chief Justice Hughes in 1932 in the case of *Eastern Air Transport Inc. vs. South Carolina Tax Commission*.¹⁴ This decision rests heavily upon the fact that the tax is a sales tax and not a use tax. Chief Justice Hughes points out that the decision of the Court in the

¹² The leading decision is that of *Interstate Transit, Inc., vs. Lindsey, County Court Clerk*, 283 US 183. The decision was given by Mr. Justice Brandeis 13 April 1931. The pertinent portion for our purpose is found on p. 190, and is summarized as follows:

But since a State may demand of one carrying on an interstate bus business only fair compensation for what it gives, such imposition, although termed a tax, cannot be tested by standards which generally determine the validity of taxes. Being "valid only if compensatory, the charge must be necessarily predicated upon the use made, or to be made, of the highways of the States."

¹³ Regarding constitutionality of a sales tax levied upon sales outside of the taxing jurisdiction of the taxing authority, see *McGoldrick vs. Berwind-White Coal Mining Co.*, 309 U.S. 33 (1940).

¹⁴ 285 U.S. 147 (1932).

*Helson vs. Kentucky Case*¹⁵ does not apply for "The Court found that the tax was laid directly upon the use of the gasoline in interstate transportation . . . Such a tax is manifestly different from a general property tax or a tax upon purely local sales."

A law levying a tax upon gasoline sold for use in airplanes has recently been passed by the state of Virginia and found constitutional by the Supreme Court of Appeals of Virginia. The tax is only upon that portion of the gas purchased by interstate carriers which is consumed within the borders of the state of Virginia. No attempt was made by the state's attorneys to justify the tax by the extent of the benefits provided by the state for the use of airline airplanes. The fact that a tax is paid only upon that portion of the gasoline used in flying over Virginia gives the law a considerable amount of the flavor of an use tax. However, the Supreme Court of Appeals of Virginia did not so find.¹⁶

Storage and Withdrawal Tax—The taxes upon the withdrawal of gasoline from storage have been enacted largely as an aid to the enforcement of the gasoline sales tax.¹⁷ They have been declared to be a legal levy, however, even though they have no relation to use or sales taxes and are merely a tax measured by the amount of gasoline withdrawn from storage. The tax was a legal levy considered by itself and it was declared not necessary that the rates charged have a relationship to the amounts collected from the sale of gasoline or use of gasoline in internal combustion engines.¹⁸ In the case of *Trinityfarm Construction Co. vs. Grosjean*, the Supreme Court defined the word "use" as applicable to gasoline to be as follows:

After the gasoline came to rest in appellant's storage tanks, it was 'used' in four ways, in the broadest possible sense of the word. It remained stored where it was; it was withdrawn from storage; it was put in appellant's fuel tanks; and it was exploded and consumed as engine fuel in actual levee construction.¹⁹

¹⁵ 279 U.S. 245 (1929) quoted on p. 153 of U.S. 285.

¹⁶ *American Airlines Inc. vs. Battle*. (23 S.E. (2d) 796, 1943). "The tax itself, paid at the time of purchase is on the purchase, based on the gallonage. The use or consumption of that gasoline in the propulsion of aircraft is the classification of the gasoline upon which the tax is paid" (*Ibid.*, p. 802).

¹⁷ Cf. *Gregg Dyeing Company vs. Query*, 286 U.S. 472 (479-480) (1932).

¹⁸ *Edelman vs. Boeing Air Transport, Inc.*, 289 U.S. 249 (1933).

¹⁹ 291 U.S. 468 (1934).

Thus, in the eyes of the Supreme Court, the taxation of gasoline withdrawn from storage is just another "use tax." The concept that gasoline can be used a number of times with the final use that of explosion within a gasoline engine gives gasoline the characteristics of a capital good. This definition of the word "use" is unusual and reduces it to a tautology.

FEDERAL TAX

The Federal airways have a similar relationship to air transport that the highways have to automobile transport. The Federal airways are the highways of the airplanes, but the use of gasoline as a measure of airway use is less accurate than is the use of gasoline as a measure of highway use. The airways are not worn out more rapidly if large airplanes pass over them than if they are traversed by small planes. However, the amount of tax paid if determined by gasoline consumption would be considerably greater for the owner of the large plane than would be the case for the owner of the small plane. Much of the expense of the provision of Federal airways arises as a result of providing facilities which will enable planes to pass along them safely during the night and during periods of bad weather. It is also true that a considerable portion of the expense of highway construction results from this same necessity. The proportion is, however, much smaller than is true of the Federal airways. The users of the Federal airways requiring facilities making night flying and bad-weather flying possible and safe are the domestic scheduled airlines, and the military services. It is also true that the large planes and the large fuel-consuming planes which will be using the Federal airways are the same plane operators who require airway facilities which make night and bad-weather flying feasible.

Attempts have been made to assign Federal airway and airport costs to the users. Table 18 presents such an estimate and compares these costs to taxes paid upon gasoline consumed in airplanes.

The gasoline taxes collected from the domestic airlines by the states, amounting to seven-tenths as much as that collected by the Federal government, are, prevailingly, not used for the financing of facilities usable by the airlines. The taxes collected are generally

used to aid local flying. Under these conditions, the domestic airlines in 1940 were paying, in gasoline taxes to the Federal government only about 20 per cent of the cost of Federal airways expense assigned to them.

The total cost of Federal airways in 1945 was \$28,543,023 (Table 13). It is estimated that 80 per cent of the use made of Federal airways was made by military planes during this year. The portion of the expenses which should be allocated to the

TABLE 18—COMPARISON OF GASOLINE-TAX PAYMENTS OF THE SCHEDULED DOMESTIC AIR CARRIERS WITH THE NET COST OF PUBLIC AIDS ASSIGNED TO THEM, 1938-1940
(In Thousands of Dollars)

ITEMS	1938	1939	1940
Assigned cost of public airports less nontax payments.....	\$2,285 3,228	\$3,237 3,122	\$3,780 4,272
Assigned cost of Federal airways.....			
Total assigned cost of public aids	\$5,513	\$6,359	\$8,052
State gasoline taxes.....	281	345	495
Federal gasoline taxes.....	373	466	830
Total gasoline taxes.....	\$ 654	\$ 811	\$1,325
Excess of aids over gasoline taxes..	\$4,859	\$5,548	\$6,727

Source: Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, Table 85, p. 322.

domestic airlines in 1945 would be about \$5.6 million or about \$1.4 million more than assigned to them in 1940.²⁰ Gasoline and lubricating-oil tax payments made to the Federal government in 1945 were approximately \$1.8 million.²¹ Thus the airlines, in gasoline and lubricating-oil taxes, paid the Federal government for about 35 per cent of the cost of Federal airways allocated to them, and if the gasoline taxes paid by the airlines to the various states were included, the payment of this type of tax would amount to about 50 per cent of the total expenditure upon Federal airways.

Early in 1946, the request for additional funds for the development of airways made by the Civil Aeronautics Administration

²⁰ Statement of T. P. Wright, Administrator of the CAA (Hearings before the Subcommittee of the Committee on Appropriations, United States Senate, 79th Congress, Second Session, on H.R. 5890, April 15, 1946, p. 148). Notice difference in estimates. See Table 13.

²¹ Calculated on basis of revenue passenger miles which were twice as great in 1945 as in 1943 (Annual Report of the Civil Aeronautics Board 1945, p. 28).

was rebuffed by the Senate Committee on Appropriations. The Senate committee was of the opinion that the airlines should pay for the additional services they may desire. The Committee was of the opinion that the airlines were sufficiently well financed to pay for services considered necessary.²²

Several recently completed tax studies have recommended that a division of the general field of gasoline taxes should be made. The studies recommend consideration of the advisability of the states having the exclusive right to tax gasoline used in vehicles operating on the surface and the Federal government having the exclusive right to tax gasoline used in vehicles operating in the water and through the air. If the gasoline tax is to retain its character of being largely a benefit tax, then certainly the recommended division should be carried out.²³

Other taxes could be devised, perhaps, that would be more equitable in the assessment of airplane owners for the expenditures made upon the Federal airways.²⁴ However, none of these newly devised schemes would be readily accepted and although greater equity is in their favor it is perhaps outweighed by their strangeness, and by the additional amount of supervision and inspection which they would require.²⁵

CONCLUSION

The possibilities open to the states in the levy of various combinations of gasoline use and sales taxes apparently provide ample opportunity for the assessment of taxes upon gasoline used by airlines before the limit is reached where the taxes would be considered a burden upon interstate commerce. Recent United States Supreme Court decisions indicate that taxes must be substantial before this point is reached. Also, it would appear that it would

²² Senator McKellar: "We cannot just give them the service that the aircraft companies may want . . . they must pay us a reasonable amount for the service we give them." (Hearings H.R. 5890, April 15, 1946, p. 147.)

²³ Cf. Committee on Intergovernmental Fiscal Relations, *Federal, State and Local Fiscal Relations*, p. 527. Also, Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, p. 65.

²⁴ For example, the tax could be based upon the number of hours of flight, with higher rates applicable to the hours of flying taking place in the night than during the day and during bad weather than during good weather, and over mountainous areas than over level terrain.

²⁵ See analysis on pp. 45-56, Federal expenditures on airways.

be quite possible for gasoline used by a plane to be taxed twice, or perhaps even more often, if one state could justify the assessment of an use tax while the other states assessed a sales tax.

The trend of state legislation is definitely toward the assessment of taxes upon the gasoline consumed by airplanes.²⁶ The development is undesirable. It is not the correct manner to accomplish the purpose, or what at least should be the purpose, of all taxes levied upon airlines, to reiterate (1) the payment by airlines of their just share of general governmental expenses, (2) the payment by airlines for the benefits furnished them by different levels of government. The gasoline consumed by airplanes is not a good measure of use of airports; it is a good measure of use of airways, but airways are not maintained or constructed by states or local governmental units. The payment by users for airport facilities is most efficiently accomplished by the use of a fee system.²⁷ There are no extraordinary expenses to local government that arise as the result of the sale of gasoline. Also, the taxation of gasoline is not a good tax to be used either as a levy in lieu of a gross receipts tax or a general property tax.

A tax levied to pay for the general benefits of government enjoyed by a particular business is certainly much better if measured by property or profits than if measured by gasoline consumption (See pp. 77-89 and 111-115).²⁸

²⁶ In 1943 the committee reporting in Senate Document No. 69 stated that only one-third of the states were taxing aviation gasoline. As of January 1, 1944, House Document No. 160 (1944) indicates that interstate air carriers were subject to the full tax in 12 states and to a lower rate in 8 more states. In December of 1944, 21 states retained a net tax on gasoline fuel of one cent a gallon or more as reported by House Document No. 141 (1945). In 1946 the state of Kansas enacted legislation levying a tax of one cent upon gasoline used in airplanes, to make the number of states 22. There are no reported cases of a state removing the tax upon aviation fuel after it had once levied it.

²⁷ See pp. 34-38 of this study.

²⁸ "Looking to the future, it is suggested that Federal and State separation of sources in the motor fuel tax field might take the form of exclusive Federal taxation of fuel used in aviation and exclusive State taxation of other motor fuel." (*Federal, State and Local Fiscal Relations*, Senate Document No. 69, 78th Congress, First Session, p. 527.)

"That the Federal tax on gasoline be identified as an user tax, the tax on aviation gasoline being segregated for application to federal airways by reference to the octane rating of the fuel or by requiring that such gas be given a distinctive color, and the tax on other gasoline being applied as a highway-user tax. Also, that State taxes on motor fuel and on carriers and transportation facilities, except general taxes and taxes for administrative and regulatory purposes, be identified as user taxes to be expended on the public facilities provided for transportation use." (Board of Investigation and Research, 79th Congress, first session, *Carrier Taxation*, pp. 1 and 2.)

CHAPTER V

PROPERTY TAX

In its liability to the property tax, air transportation possesses a characteristic advantage, but also an annoying disadvantage, over other methods of transportation. The advantage possessed by airlines is that little property is involved in the enterprise; the annoying disadvantage is that the properties of the airlines are apt to be in many different taxing jurisdictions during the period of a day or a year.

Ad VALOREM PROPERTY TAX

TAXATION OF PERSONAL PROPERTY

The amount estimated to have been paid out by the airlines in ad valorem property taxes during recent years is shown in Table 19 and Chart 8.

TABLE 19—AD VALOREM PROPERTY TAXES PAID BY SEVENTEEN DOMESTIC
AIR-TRANSPORT COMPANIES, 1938-1945
(In Thousands of Dollars)

TYPE OF TAX	1938	1939	1940	1941	1942	1943	1944	1945
Ad Valorem Property Tax. .	\$102	\$159	\$167	\$196	\$221	\$216	\$274 ^a	\$348 ^a

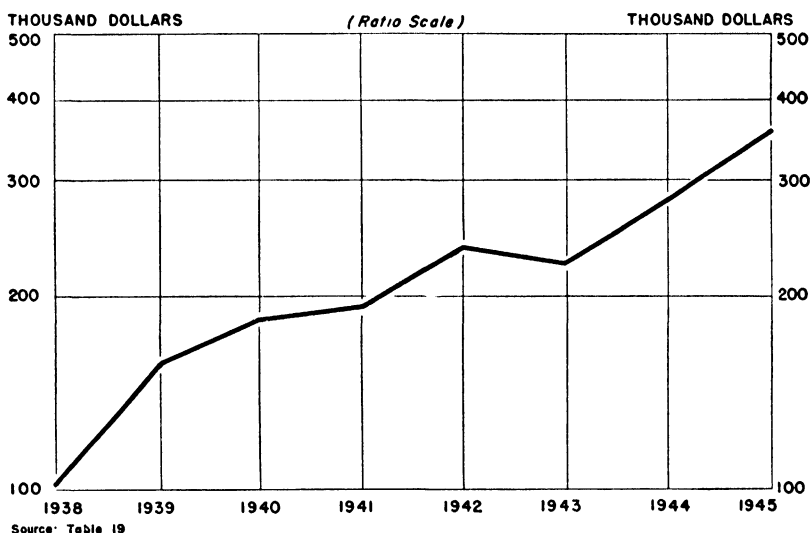
^a Estimated.

Source: 1938—Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, H.D. No. 160, (1945), Table 84, p. 316; 1939-1943—Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. No. 141, p. 75; 1944-1945—Calculated upon the basis that "total property taxes paid" in 1944 and 1945 bore the same relationship to "total depreciated assets" as in 1943.

This relatively light property-tax burden is explained by the small property holdings required by the nature of the industry and by the fact that such a large proportion of the airports used by the airlines are publicly owned. In addition, the tax burden of airlines has been lightened because of the legal difficulties encountered in the assessing and taxing of the highly mobile personal property which constitutes their principal property holdings.

The investment pattern of scheduled domestic air carriers as

CHART 8—PROPERTY TAXES , SEVENTEEN DOMESTIC AIRLINES 1938-1945

TABLE 20—PERCENTAGE DISTRIBUTION OF TOTAL ASSETS
OF SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES
BY TYPE OF ASSETS, 1940-1941

TYPE OF ASSET	1940	1941
	Per cent	Per cent
Current assets	47.1	49.6
Fixed Assets:		
Land and buildings	6.2	5.4
Aircraft	23.9	23.7
Other flying equipment	13.7	15.4
Other fixed assets	1.5	.9
Investments	3.5	1.1
All other assets	4.1	3.9
Total	100.0	100.0

Source: Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, H.D. No. 160, p. 317.

shown by the percentage distribution of total assets in 1940 and 1941 (Table 20) indicates a large amount of intangible property, over 50 per cent, and a large amount of migratory, tangible property, about 25 per cent. Thus, a total of 75 per cent of airline

property is of the type which is particularly difficult to assess and levy a tax upon.¹

The smallness of the amount of property tax paid indicates that airline properties are escaping taxation by the ad valorem property tax. It was estimated in 1940 that the book value of air-transport properties was \$46 million and that about \$20 million of this was tangible. The ad valorem property taxes paid by these airlines indicates an average property tax rate of only about 9 mills. It is estimated that half of the property taxes paid by airlines in 1941 were paid as the result of the assessment of taxes upon real estate which, however, amounted to only about \$4 million or about one-fifth of the tangible property possessed by the airline companies. These comparisons indicate that a large share of airline tangible personal property is escaping assessment.²

The personal property of airlines is apt to escape taxation entirely or to be subject to an undue tax burden. The data given above indicate that, at present, the former is the more apt to be the situation. It is very difficult for local assessors to set a value upon the highly mobile property of airlines. In addition, their difficulties are multiplied by the dubious legal rules governing the assessment of property which is not continuously located within a particular taxing district. It would appear that the only method of assessing airlines for the full value of their personal properties

¹ "It has been estimated that there was an unamortized public investment of \$6,250,000 in Federal airways and \$118,000,000 in airport facilities as of the beginning of 1940. The scheduled air carriers were assigned fractional parts of these investments totalling approximately \$40,000,000 or about twice their own investment in tangible carrier properties. At a rate of 1.9 per cent, privately-owned property with a market value of \$40,000,000 would yield taxes of \$760,000 which is more than four times the 1940 property taxes paid by the carriers on their own assets.

"Occasionally a publicly-owned airport is subject to property taxes because it is situated in one political subdivision and owned by another.

"Questionnaires returned to the Civil Aeronautics Administration by most of the 240 publicly-owned airports authorized for scheduled stops in 1940 listed taxes of less than \$50,000 for that year." (Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, H.D. No. 160, 1944, p. 321.)

² The existence of a similar situation in the case of the railroads brought forth central assessment of railroads. (Cf. Jensen, Jens, *Property Taxation in the United States*, University of Chicago Press, 1931, p. 435.)

Also it is interesting to relate this large amount of avoidance of property tax by the airlines to the situation existing in respect to the railroads. In this regard the following quotation (from the report of the Board of Investigation and Research of the 79th Congress) is of interest: "The data at hand indicate that property tax rates of the air carriers are at least *no lower* than the railroads." (*Carrier Taxation*, p. 9.) Also, see Tables 1 and 2, Appendix A, for additional property-tax data.

would be a provision for national central assessment. However, the recommendation is no sooner given than a host of difficulties become immediately apparent. For example, who is going to do this central assessing? In what manner is the total value going to be distributed among the various taxing districts? However, these difficulties are not insurmountable and definitely their removal does not necessarily require, as some critics claim, the relinquishment of valuable state prerogatives.

It is to the best interests of the airlines that an equitable method for the valuation of their personal property be established; also this is true of the valuation of the airline's intangible assets. Although full assessment may increase the present property-tax burden of airlines, it would undoubtedly be to their long-run benefit, since the establishment of an equitable method of central assessment and allocation of the total value would largely remove the need for the airlines ever to set up elaborate tax divisions which have been made necessary by the methods used in the taxation of railroad property. It would also prevent development of double taxation of properties which might become very important if clarifying Federal legislation is not provided. (See discussion of *Northwestern Airlines case*, p. 86-90) Furthermore, full assessment and taxation of airline property will go a long way toward preventing the passage of various special airline-tax statutes.

Minnesota's Taxation of Flying Property—Partially as a result of the *Northwest Airlines* decision of the United States Supreme Court, the legislature of the State of Minnesota has enacted legislation which represents, perhaps, the most comprehensive attempt yet made to tax the aviation industry by the use of the ad valorem property tax.³ In April of 1945, two pieces of legislation were adopted which made special provision for applying the property tax to flying property, one applying to smaller planes, the other to the airlines. The Act applying to small-plane owners provided for the assessment of a tax upon "certain aircraft using the air space overlying the State of Minnesota and the airports thereof."⁴

³ See pp. 80-84.

⁴ 411 Minn. Sess. Laws 787 (1945).

The Act further provides that the rate will be "one per cent of value provided that the minimum tax on all aircraft subject to the provisions of this Act shall be \$10.00." This tax is "in lieu of all other taxation."

Section 5 of the Act provides that for an aircraft to become subject to the tax it must use the air space overlying Minnesota "for more than 90 days continuously in any calendar year." Special provision is made for the exemption of planes owned by other governments and planes held by dealers for sale. The tax is assessed and collected by the State Tax Commissioner. Central assessment and collection will assure rather uniform treatment in the determination of planes subject to the tax and in the actual assessment of the tax.

Section 16 of the Act makes provision for the disposition of the amounts collected. "The proceeds of the tax—and all fees and penalties provided for herein shall be collected by the commissioner and paid into the state treasury and credited to the State Airports Fund." Thus, this ad valorem property tax which is assessed upon airplanes operating in Minnesota is made available to meet expenditures which are directly beneficial to the owners of the planes required to pay the tax. Also, the tax is not in excess of that paid upon similar property, which does not benefit directly from the expenditures of the funds collected. This is tantamount to the assessment of a lower tax upon airplanes than is assessed upon other similar types of property.

This method of raising funds to be made available for state expenditure upon airports possesses a number of advantages. The tax is superior to a general state tax upon gasoline used by airplanes in that the people paying the taxes, the owners of small planes, are also the people who will benefit directly from the expenditure of the funds collected. The value of the airplane is at least as good a measure of the use of an airport as would be the amount of gasoline consumed by the plane, although neither is a very good measure of airport use.⁵ The provision for centralized assessment and collection will make uniformity in the tax burden possible, which was impossible prior to the enactment of the

⁵ See pp. 57-76 for a discussion of the use of the gasoline tax.

legislation. The tax makes possible the undertaking cooperatively of activities considered desirable individually by Minnesota owners of planes but which could be accomplished only by forced group action. This type of business tax is not a burden and is not a deterrent to industrial growth.⁶

The same session of the Minnesota legislature also passed an Act providing for the taxation of airline companies. The law defines an airline company as "any person who undertakes directly or indirectly, to engage in the business of air commerce," and defines air commerce as "the transportation by aircraft of persons or property for hire in interstate, intrastate or international transportation on *regularly scheduled flights*."⁷ The inclusion of the phrase "regularly scheduled flights" appears to exclude chartered air-transport companies from the terms of the law. It is also doubtful whether the flying property of chartered air-transport companies would in many cases meet the requirements for taxation set down in 411 Minn. Sess. Laws 787.

The law taxing airlines is aimed only at the assessment and taxation of flight equipment. The remaining property of airlines will be taxed "as otherwise provided by law." Which means that the remaining personal property and all real property will be assessed locally and will pay the local tax rate.⁸ This Minnesota tax on airline flying property will be administered by the State Tax Commission and the rate applied will be the average rate used by local communities during each particular year.

In the writing of this act, the Minnesota legislature has attempted to eliminate the obvious injustice inherent in the method of taxation considered in the Northwest Airlines case. The determined full and true value of the flying property of the airlines will be allocated upon the following bases:

(1) $33\frac{1}{3}$ per cent of the percentage which the total tonnage of passengers, express and freight first received by the airline company in this state (Minn.) during the preceding calendar year plus the total tonnage of passengers, express and freight finally discharged by it within this state

⁶ See pp. 137-138 for an analysis of the burden of business taxes.

⁷ 418 Minn. Sess. Laws 811 (1945) Sec. 1; Subd. 3 and Subd. 6.

⁸ *Ibid.*, Sec. 6, Subd. 1. The Minnesota State Department of Taxation permits a 25 per cent annual depreciation allowance, but a plane remaining in commercial use will not be reduced below 50 per cent of original value.

during the preceding calendar year is of the total of such tonnage first received by the airline company or finally discharged by it, within and without this state during the preceding calendar year.

(2) $33\frac{1}{3}$ per cent of the percentage which, in equated plane hours, the total time of all aircraft of the airline company in flight in this state during the preceding calendar year, plus the total time of such aircraft on the ground in this state during the preceding calendar year is of the total of such time in flight or on the ground within and without this state during the preceding calendar year.

(3) $33\frac{1}{3}$ per cent of the percentage which the number of revenue ton-miles of passengers, mail, express and freight flown by the airline company within this state during the preceding calendar year is of the total number of such miles flown by it within and without this state during the preceding calendar year.⁹

The second and third bases apply to the airlines a method which has been used in the allocation of the portion of the property of surface transportation which was taxed by different geographical areas. The justification of their use in the apportionment of the property and the income of surface transport is much greater than it is in the case of air transport. This different relationship was emphasized in the concurring opinion of Mr. Justice Jackson in the Northwest Airlines case.¹⁰ It is very doubtful whether the period of time an airplane spends flying through the air above a certain geographical area or the weight of the loads carried have any real tax meaning. And certainly the problem of enforcement is much greater in the case of the airlines when this method of apportionment is used than when it is applied to surface transport.¹¹

The Minnesota legislature realized the possibilities of double taxation of air-transport flying property despite the establishment of an allocation formula. To avoid this, the Act makes provision for the negotiation of reciprocal agreements with other states.¹² However, confusion, double taxation, and avoidance of taxation are certain to result unless uniform laws are passed by the states. And it is very doubtful that all other states when passing legisla-

⁹ *Ibid.*, Sec. 6, Subd. 1.

¹⁰ See p. 88.

¹¹ See p. 79.

¹² 418 Minn. Sess. Laws 811 (1945).

tion aimed at the taxation of airline flying property will adopt the same allocation formula accepted by the Minnesota legislature.

The funds collected under the Act will go into the State Airports Fund. This fund will be used primarily to aid in the construction of airports which cannot be utilized by the airlines. Thus the funds will be spent in a manner that will provide little if any direct benefit to the airlines. This is the reverse of the situation resulting from the assessments upon flying property other than that of the airlines. Because this is the case, the tax will be a burden upon the industry and will retard its growth. If the funds were used directly to improve the airports used by the airlines, and if the airlines desired to pay for these improvements by the levy of this type of tax rather than by the assessment of fees and rents then the tax would not be a burden upon the industry, but rather would increase the rapidity of its growth.¹³

TAXATION FOR THE USE OF PUBLIC PROPERTY

There is considerable support for the position that airlines should bear the average ad valorem property-tax rate upon that portion of the public facilities made available for airplane use which can be fairly allocated to scheduled airlines. Perhaps about 33 per cent of the value of airports and airways used by scheduled airlines would be a fair allocation figure.¹⁴ In 1940, this would have given a property valuation of about \$236 million upon which taxes could have been levied and distributed among the various airlines.¹⁵ Certainly operators of other methods of transportation, railroads and trucklines, who pay property taxes upon their terminal properties are likely to regard the exemption of airlines from this burden as providing them with a competitive advantage.

However, regardless of the desirability, any attempt to levy taxes upon the airlines based upon the value of terminal and air-route facilities is fraught with a number of difficulties. First, there would be faced the problem of equitably dividing the total value

¹³ See pp. 41-44. The receipts from the tax upon flight property of airlines were \$10,700 for the year 1945.

¹⁴ Cf. Board of Investigation and Research, 79th Congress, First Session, *Public Aids to Domestic Transportation*, House Document No. 141, p. 479.

¹⁵ *Ibid.*, pp. 479 and 488. Twenty-five per cent allowance for depreciation and obsolescence was made.

allocated to airlines among the various airline companies using the facility. Second, the difficulty encountered in the levying of taxes upon property largely paid for by one governmental unit for the benefit of another governmental unit would have to be resolved. Without examining each of these principal difficulties in detail, it would appear that neither of them is impossible of resolving. The airlines themselves could be requested to determine the fairest method of allocating the total assessed value among the various companies. The solution of the second difficulty could be largely eliminated if the Federal government gave up its right to claim certain portions of the taxes received. The Federal government could make its relinquishment of these rights the basis for the obtaining of certain desirable local guarantees.

The allocation of a proportion of the cost of publicly-owned facilities to the airlines as the basis for the levy of ad valorem property taxes entails a considerable amount of arbitrary treatment. The trucklines and the railroads paying a tax upon the value of their terminal facilities also had it within their power to determine how much was to be invested in these terminal facilities; such, however, is not the case regarding airlines. The airlines do not have an official voice in the determination of the amount which is going to be invested by different levels of government in terminal facilities. Therefore, to require them to pay a tax upon facilities concerning which they have no voice in determining the type of structures to be built, the location of the land to be purchased or the cost involved is not the same as requiring the railroads and trucklines to pay ad valorem property taxes upon their terminal properties. Also, as has been previously mentioned, this same weakness is apparent in the proposals that the airlines should be taxed sufficiently to repay the various levels of government for their investments in air-transport facilities.

In cases where an airport constructed with public funds has been leased to a private person for operation, it would appear that the terminal should be considered taxable under the ad valorem property tax, and such would be the case in most states. However, any attempt to collect ad valorem property taxes under these conditions would encounter a number of important difficulties:

(1) a group of legal uncertainties; (2) it would, in some respects, run counter to any attempts which might be made to levy an ad valorem property tax upon the airlines for that portion of publicly-owned facilities which might be allocated to them.¹⁶

This brief analysis has brought forward some of the difficulties encountered in taxing airlines for a share of publicly-owned facilities. It is at least doubtful whether the direct taxing of the airlines on their proportionate use of public facilities would be preferable to the assessment of charges to airlines for the use of port facilities, sufficient for the governments in which the facilities are located to meet the general governmental expenses allocated to the facility.¹⁷ One important advantage of the fee method is that it violates fewer of the accepted tax conventions. However, it does not solve the problem regarding the taxation by one government of property owned by another government. In any event, since investment in airlines is, to such a large extent, in intangibles and migratory tangible property the payment by airlines, in some manner, of an in lieu ad valorem property tax charge is justifiable despite the difficulties involved.

LEGAL ASPECTS

It is, perhaps, because of the unusual characteristics of the air-transport industry that the United States Supreme Court handed down a rather unexpected decision regarding the taxation of airline personal property in the Northwest Airlines case. The value of the entire fleet of Northwest Airlines' planes was assessed by the county assessor of Ramsey County, Minnesota, for the purpose of levying the county property tax. The tax was declared constitutional by the Minnesota Supreme Court in 1942.¹⁸ The basis for the Minnesota decision was the fact that United States Supreme Court decisions have sanctioned multiple taxation of inheritance intangibles, and that the multiple taxation of aircraft did not unconstitutionally burden interstate commerce or violate

¹⁶ Cf. Buehler, A. G., "The Taxation of Federal Property," *National Tax Association Bulletin*, November, 1945, p. 5.

¹⁷ Cf. *Ibid.*, p. 47.

¹⁸ 213 Minn. 395, 7 N.W. (2d) 691 (1942) and 322 U.S. 292 (1944).

the due-process clause of the Fourteenth Amendment. The important consideration, seemingly in this case, was that none of the ships had acquired situs in another state by being continuously throughout the year located within one state, and that both the legal and commercial domicile of the corporation was the State of Minnesota. The old legal rule of *mobilia personam sequuntur* (that moveables follow the person of the owner) is not dead, despite the belief back in 1903 that the decision of the United States Supreme Court in the case of *Louisville and Jeffersonville Ferry Co. vs. Kentucky*¹⁹ forbade the taxation of personal property by the state of legal domicile of the owner and again by the state in which the property has its physical situs. However, in the Northwest Airlines case, it was not decided that the taxation of a portion of the fleet of the corporation by three different states was legal; it was merely decided that the taxation of all the ships in the fleet by Minnesota was legal.²⁰ Certainly, if the principle is applied that a moveable good, to acquire taxable situs based upon physical location, must be continuously within the state during the taxable period, there is no danger of the personal property of the airlines bearing double taxation; rather the likelihood is much greater that they will avoid entirely, or nearly so, taxes levied upon personal property. It had been expected that the United States Supreme Court would follow the principle of apportionment. However, a careful reading of the apportionment decisions does not indicate that such an attitude could have been confidently expected.²¹ In his dictum, Mr. Justice Frankfurter states his disbelief that it would be necessarily just or correct to place upon the

¹⁹ 188 U.S. 385 (1903).

²⁰ The decision might remove, at least for a time, the possibility of states taxing a fraction of the value of planes flying over its territory. This should be considered desirable. It does not, however, remove the possibility of using this mileage as a basis of taxing a portion of the capital stock of the corporation.

²¹ In the *New York Central Railroad vs. Miller* case (202 U.S. 584, 1905), the Court declared the State of New York could tax the railroad upon its entire fleet, although a large portion of the cars were out of the state, most, if not all, of the time. In the *Pullman's Palace Car Co. vs. Penn.* case (141 U.S. 18, 1888) the tax declared legal was levied not upon the cars, but upon such proportion of the *capital stock* of the company as the number of miles of railroad over which its cars were run in Pennsylvania bore to the entire aggregate of its mileage everywhere. The *Oklahoma vs. Wells, Fargo & Co.* case (223 U.S. 298, 1911) decision merely stated that a gross receipts tax could be apportioned.

air-transport industry, the same tax rules which have been gradually developed and applied to land commerce.²² Mr. Justice Jackson, in his concurring opinion, also indicated a doubt that it would be possible through "decisional law" to develop from the rules of taxation of land commerce, satisfactory principles for the taxation of air commerce.²³

It would appear that if adequate principles for the taxation of air commerce are desired, they should be provided by legislative action and that they will not arise as the result of bringing particular disputes before the Supreme Court. This point of view has been accepted by those interested in the aviation industry and has resulted in a fine study by the Civil Aeronautics Board titled *Multiple Taxation of Air Commerce*,²⁴ and in the introduction, on June 12, 1945, by Hon. Alfred L. Bulwinkle of North Carolina of H. R. 3446, aimed at providing legislation for carrying out the recommendations of the study.

It would seem obvious that the relations between the states and the airlines arising from an airline passing over a state are quite different from those arising from a railroad or truckline passing through a state. Yet for some reason, many persons seem to think that these fundamental differences are not of sufficient importance to warrant special tax provision. However, Mr. Justice Jackson is definitely not of this opinion as indicated by a portion of his concurring opinion in the Northwest Airlines case:

A state has a different relation to rolling stock of railroads than it has to airplanes. Rolling stock is useless without surface rights and continuous structures on every inch of land over which it operates. Surface rights the railroad has acquired from the state or under its law. There is a physical basis within the state for the taxation of rolling stock which is lacking in the case of airplanes.²⁵

²² Mr. Justice Frankfurter stated (322 U.S. 300): "Although a part of the taxing systems of this country, the rule of apportionment is beset with friction, waste and difficulties, but at all events, it grew out of, and has established itself in regard to, land commerce, to what extent it should be carried over to the totally new problems presented by the very different modes of transportation and communication that the airplane and the radio have introduced . . . raises questions that we ought not to anticipate; certainly we ought not to embarrass the future by judicial answers which, at best, can deal only in a truncated way with problems sufficiently difficult even for legislative statesmanship."

²³ 322 U.S. 307 (1944).

²⁴ *Multiple Taxation of Air Commerce*, House Document No. 141, 79th Congress, First Session (1945).

²⁵ 322 U.S. 306 (1944).

It is difficult to determine at what point taxes of the type assessed by Ramsey County upon the Northwest Airlines would be considered a burden to interstate transportation and thus considered under the commerce clause rather than the Fourteenth Amendment. Mr. Justice Frankfurter stated in the Northwest Airlines case, "It is too late to suggest that this taxing power of a state is less because the tax may be reflected in the cost of transportation."²⁶ This statement indicates that the mere fact that a tax increases transportation charges does not make it a burden upon interstate transportation but it does not state when a tax upon interstate transportation would be considered a burden. This statement seems to indicate, however, that the legality of a tax will not be determined by its rate.

The foregoing discussion serves to emphasize the fact that the problem of the taxation of airline property is in reality a number of problems, and that the various types of property used by airlines necessarily make it so. The problem of the taxation of hangar and passenger and freight-handling facilities is that of the taxation of publicly-owned property acquired through the expenditure of public funds. The nature of the problems involved in the taxation of the airlines for the use of such publicly-owned property was discussed above.

Some mention should probably be made in passing of the possible taxation of governments property holdings. Gradually, public opinion has developed to the point where not only is the taxation of property owned by the government considered desirable but, in many areas, it has been demanded. However, it is not admitted, in many cases, that these payments of one government to another government are taxes; but rather they are still labeled payments in lieu of taxes. However, we are certainly not far away from the open taxation of properties owned by governments.²⁷ Recent removal of legal restrictions upon the taxation of government instruments and the apparent willingness of the Supreme Court to accept Justice Holmes' position that "the power to tax is not the power to destroy while this court sits," makes the outlook

²⁶ 322 U.S. 295 (1944).

²⁷ Cf. Buchler, A. G., *op. cit.*, p. 47.

for intelligent development of the taxation of government instruments particularly bright.²⁸

The taxation of the moveable air-carrier personal property raises difficulties largely as a result of the many taxing jurisdictions in which the property will be located during a portion of the year. The only solution which will assure all states a fair share of the tax base provided by this type of property is special national (and international) assessment and allocation to the states by a formula which will be a compromise between the various commonly accepted measures of apportionment.

CAPITAL-STOCK TAX

The taxation of intangible corporate property by the use of the crude, property-tax tool is as difficult as it is undesirable. Those states which have not adopted the corporate income tax will have to make some sort of attempt at taxing corporate intangibles, none of which will be entirely successful, and all of which will place an inequitable tax burden upon airlines operating in some areas. More than likely, the Supreme Court will find acceptable, measures of the amount of capital stock to be allocated to an area which are based upon common measures of the percentage of its business which is performed by the corporation in the area. The capital-stock tax without adjustments for borrowed capital would place a heavier burden upon aviation corporations than upon other types of transport. This weakness is also inherent in the corporate income tax. Also, the capital-stock tax is seldom assessed in a manner which makes for accurate differentiation between non-profit corporations and profitable corporations. This weakness is particularly harmful in the case of a new and rapidly expanding industry.

A few states attempt to tax the value of corporate intangibles by assessing what is called the corporate excess tax. This tax is an attempt to avoid the double taxation inherent in the capital-stock

²⁸ "It must be concluded that, as far as rights-of-way are concerned, railroads are undertaxed in comparison with motor carriers and overtaxed in comparison with water and air carriers. Compared with public airports and, possibly, public water terminals, railroad terminals are relatively overtaxed." (Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, H.D. No. 160, p. 10.) Also see Tables 6 through 9, Appendix A.

tax, by taxing only that value which the corporation possesses over and above the value of its physical property.²⁹ This type of tax would also tend to bear unduly heavily upon the air-transport industry since the amount of physical property of a partially outworn and outmoded character which the airlines would have available to deduct in the calculation of the corporate excess would be considerably less than in the case of companies in some other types of transportation.

If a capital-stock tax is to be assessed, it appears that it will inevitably bring with it the "frictions, waste and difficulties"³⁰ of apportionment. In addition, it brings with it a tendency to place a tax burden of a particularly undesirable type upon business enterprise in an inequitable manner, for the burden is the heavier upon the new and the expanding industries whose current profits are apt to be very moderate, and whose capitalization is apt to be largely equity. At least one of these difficulties could be eliminated without reducing state revenues. The tax burden upon no-profit and small-profit corporations could be made more equitable by enacting a state corporate income tax. This change in tax procedure would not only be beneficial to air-transport corporations, but would aid all, new and old, small-profit corporations to meet the fiscal requirements of continued operation.

GROSS-RECEIPTS TAX

Before leaving, what necessarily becomes a rather inconclusive study of domestic air-transport-property taxation, the gross-receipts tax which is frequently levied by the states upon public utilities should be mentioned. This tax is usually levied in lieu of the general property tax or a tax upon corporate intangibles, and is levied only upon those receipts which can be fairly apportioned to the state collecting the tax. The states found it necessary to include these features in the tax to make it acceptable to the United States Supreme Court.

Generally, domestic air carriers, because they have not as yet

²⁹ Cf. Lindholm, Richard W., *The Corporate Franchise as a Basis of Taxation* (University of Texas Press, 1944), pp. 153-156. See Table 5, Appendix A for capital-stock tax data.

³⁰ Cf. Mr. Justice Frankfurter. 322 U.S. 300.

been included in the various listings of companies considered to be public utilities, have not been required to pay the gross-receipts tax. Perhaps as an indication of the future, three states now specifically include airlines within the term "public utilities" as used for taxation purposes.³¹ The gross-receipts tax was adopted by states in many cases because of the complicated nature of most public utility properties and the great difficulty of accurately assessing them. It is doubtful if this difficulty will be so apparent in the case of air-transport companies. Instead of having large physical investments as is the case of the typical public utility, the airlines have a small investment in fixed plant and distribution facilities. The use of the gross-receipts tax also requires elaborate arrangements for apportionment. A National Tax Association committee reporting upon a recommended measure for apportionment of gross receipts of railroads endorsed a composite formula of five-year averages of all track mileage, the value of physical property, car mileage, gross receipts, and so-called traffic units. Needless to say, the formula has been criticized as being too difficult to employ.

State collections from the gross-receipts tax levied upon domestic air-transport companies are shown in Table 21.

TABLE 21—TOTAL STATE GROSS-RECEIPTS TAXES PAID BY SEVENTEEN DOMESTIC AIR-TRANSPORT COMPANIES OPERATING IN CONTINENTAL UNITED STATES, 1939-1943

TYPE OF TAX	1939	1940	1941	1942	1943
Gross Receipts Tax: Total . . .	\$2,693	\$8,235	\$14,947	\$13,492	\$10,917

Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, House Document No. 141, Table VII, p. 80.

It would be undesirable to extend the use of gross-receipts taxes as a method of obtaining revenues from domestic airlines. The allocation of the total gross receipts of the domestic airlines

³¹ The New York law includes aviation within its group of taxable transportation and transmission companies. Aviation is taxed like all other means of transportation.

In Kentucky "air transport" is subject to the special public utility taxes.

In Oklahoma all airports and airways, except those operating in counties having a population in excess of 25,000 or less than 16,000 owned and operated by municipalities, shall pay a tax.

The Utah and Washington laws taxing public utilities are so broad that airlines could be included or excluded.

would certainly be as difficult a problem as that which has been encountered in attempting to apply the tax to railroads. In addition, however, the tax would be undesirable because its burden would not be distributed among the airlines in proportion to their ability to pay. Small struggling airlines may find the tax upon their gross receipts the expense which forces them to abandon an enterprise that might have developed and prospered and become the payer of many dollars of taxes. Also, during a period of business recession when all airlines would be finding it difficult to meet expenses, the gross-receipts tax would continue as an expense and might force a weak airline into bankruptcy.

Business taxes that are not closely related to the tax-paying ability of the firm tend to retard the development of new firms and new industries and also tend to reinforce cyclical business fluctuations. This weakness is evident in the gross-receipts tax as well as in all taxes levied upon corporate property. It is impossible accurately to reflect in the assessed value of property the changes which take place in the earnings of a company during the different phases of the business cycle and also during the different changes in the comparative competitive position occupied by a particular firm.

ALLOCATION FORMULAE

The taxation of airline property is complicated by the difficulty of determining which property and what portion of various properties should be taxed by different political divisions. The Northwest Airline case³² pointed up this inherent difficulty. In its recent study of multiple taxation the Civil Aeronautics Board has attempted to come to grips with the problem and has arrived at definite conclusions resulting in the recommendation of certain legislative action. The recommended legislative action was introduced as a bill in the House of Representatives by Congressman Bulwinkle of North Carolina, but failed to pass during the sessions of the Seventy-ninth Congress.

The policy recommended attempts a compromise between exclusive Federal taxation of airlines and the taxation of airlines in

³² See p. 89 of this study. See Table 2, Appendix B, for detailed allocation data by state.

the same manner that the surface transportation industries are at present taxed. The compromise resulting provides that a Federal commission, upon the basis of a definite formula, determine the amount of taxable property of an airline and allocate it to a particular state. The states may levy whatever tax rate they desire upon the portion of the airline property which the Commission has allocated to them. It is believed by the Civil Aeronautics Board that the adoption of this procedure would eliminate the danger of multiple taxation of air commerce. It is not claimed, and it must not be assumed, that the recommended plan will remove the danger of excessive taxation of air commerce, or the danger of uneconomical taxation of the air industry.³³

A number of allocation formulae have been recommended as desirable for the basis of the Commission's property allocations to the states. The committees recommending a particular formula have attempted to take into consideration the peculiarities of air commerce property.

TABLE 22—ALLOCATION FORMULAE FOR PROPERTY AND GROSS RECEIPTS BY FOUR SPECIFIED COMMITTEES

BASIS OF TAX	FORMULAE OF COMMITTEE SELECTED BY THE:			
	Civil Aeronautics Board	Air Transport Association	National Tax Association	National Association of Tax Administrators
	<i>Per Cent</i>	<i>Per Cent</i>	<i>Per Cent</i>	<i>Per Cent</i>
Revenue ton-miles.....	..	50	33⅓	33⅓
Arrivals and departures.....	20	..	..	..
Originating and terminating tonnage.....	40	50	33⅓	33⅓
Originating revenue.....	..	..	..	..
Plane hours.....	..	..	33⅓	33⅓

Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. No. 141, p. 58.

All of the formulae with the exception of that recommended by the Civil Aeronautics Board make use of a mileage factor. If a justification exists for the use of revenue ton-miles as a factor in determining the apportionment of the taxable property of airlines, it must be found entirely in tradition as developed in the

³³ See pp. 137-139.

taxation of surface transport, for certainly there is no logical reason why it should be used as a method of allocating airline property. In addition, it is a type of measure which would be very difficult to administer. This would be particularly true of bridge states. Also, the tax could be avoided by flying over international territory; for example, flying over the Gulf of Mexico in the flights between New Orleans and Florida, or flying over the Atlantic Ocean in the flights between New York and Florida, etc.

The great variation indicated in the factors selected by the different committees shows that, as yet, not even the experts are agreed upon the best measures of airline property. There is agreement, however, that "originating and termination tonnage" should be one of the factors to be used in the allocation of airline property among the various taxing jurisdictions.

The Bulwinkle bill proposes the following factors:

(b) For taxes on, or measured by, operating property, operating revenues, or capital stock (or capital stock plus indebtedness) representing investment in operating properties, the allocation formula for the distribution of the taxable base for any air carrier shall be comprised of three factors, weighted as hereinafter indicated:

(1) The sum of its passenger, freight, and express tonnage originating in the State and its passenger, freight, and express tonnage terminating in the State, divided by twice the total passenger, freight, and express tonnage carried by it, with a weight of two;

(2) The sum of its passenger, freight, and express revenues originating in the State, divided by its total originating passenger, freight, and express revenues, with a weight of two; and

(3) Scheduled aircraft arrivals in the State and aircraft departures from the State (both equated according to the size of the plane), divided by its total equated scheduled aircraft arrivals and departures, with a weight of one.

These proposals are the same as those recommended by the Civil Aeronautics Board and do not contain a mileage factor. The originating revenue factor will encounter legal difficulties in the determination of the situs of revenues. Also, the factor would appear to be a poor determiner of the situs of flying property. This would be particularly true if the originating revenue situs was determined to be the place where tickets were sold. It would be quite possible for most passenger tickets, for example, to be sold

at a small office in the center of a great metropolitan area while the airport and all air-transport facilities to be used by the purchasers of the tickets were located in an adjacent state.³⁴ When mail, express, and freight revenues increase in importance, the "originating revenue" factor will become a better measure of airline property to be apportioned to a particular political area. It would, nevertheless, still be very imperfect.

It is worthy of special mention that the committees representing the air-transport industry consider revenue and business done as an adequate measure of allocable property, while the National Tax Association and the National Association of Tax Administrators consider that revenue and business done should be tempered by some consideration of the period of time physical personal property is actually within the borders of the state.

³⁴ Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, p. 56.

CHAPTER VI

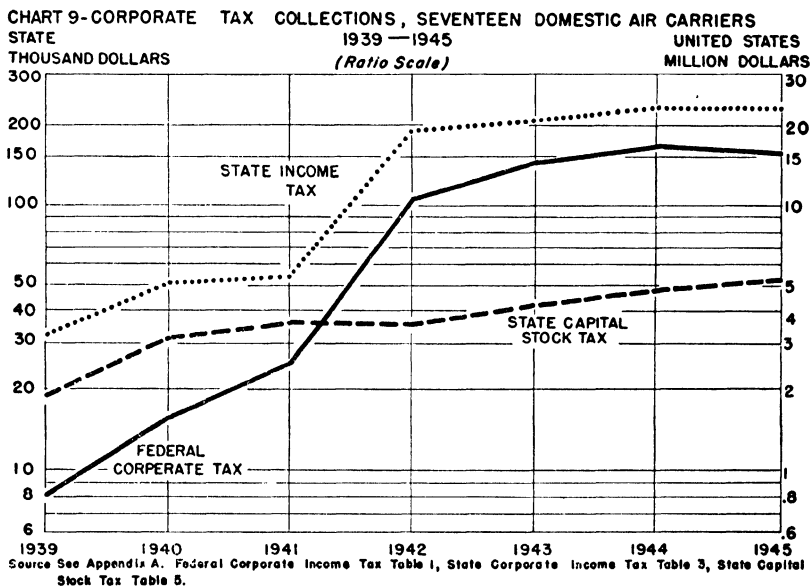
CORPORATE NET INCOME AND CAPITAL- STOCK TAXES

The domestic air-transport corporations in common with all corporations are subject to both the state and the federal corporate-income and capital-stock taxes. However, a few states have segregated corporations operating airlines and tax them in the special manner which the state has established for the taxing of public utilities.¹ The first portion of this chapter is concerned with state corporate income and capital-stock taxes; the second with federal taxes using the same measures of tax liability.

STATE CORPORATE TAXES

STATE COLLECTIONS

Corporate Income Tax Collections—During the period 1939-1945, 27 states and the District of Columbia levied income taxes



¹ Airline taxes for these states are discussed under gross-receipts taxes. See pp. . .

upon domestic air carriers. The state receipts from corporate-income taxes levied upon airlines have increased steadily since 1939, but the increase has not been nearly as rapid as the increase in payments of Federal corporate income taxes (Chart 9).²

However, the amount of corporate-income taxes collected by the states has not been great, ranging from around \$31,000 in 1939 to an estimated \$216,700 in 1945 as shown below.

STATE CORPORATE-INCOME TAX COLLECTIONS FROM
SEVENTEEN DOMESTIC AIR CARRIERS, 1939-1945

Year	<i>Amount of Tax³</i> <i>(In Dollars)</i>
1939.....	\$ 31,037
1940.....	50,049
1941.....	52,061
1942.....	190,144
1943.....	203,230
1944.....	217,001 ^(a)
1945.....	216,789 ^(a)

^(a) Estimated from total income tax figures for domestic airlines reported by the Civil Aeronautics Board for calendar years 1944 and 1945. Estimate based on the relative increase in growth of state and Federal income tax collections in calendar year 1943 from 1942.

Source: See Appendix A, Table 3.

NOTE: For amount of corporate income taxes collected by states, see Appendix A, Table 3.

In all cases, income taxes levied upon airlines went to the support of general government activities and were not earmarked for purposes related to the air-transport industry.

Capital-Stock Tax Collections—In addition to the corporate-income taxes, the air carriers were also subject to the regular capital-stock taxes which were levied by twenty-eight states in 1943. Many of the same states which levy a corporate-income tax

² See p. 97 and also Tables 1 and 3, Appendix A.

³ The reliability of these airline state-tax data reported in *Multiple Taxation of Air Commerce* (CAB) becomes doubtful when they are compared with the data reported in *Carrier Taxation* (Board of Investigation and Research, 79th Congress). It is true that a brief introduction to tables presented in the multiple taxation study states, "The payments here shown should be distinguished from tax accruals to which they will bear only approximate relationship from year to year." While this statement can be accepted, it is doubtful whether this would account for variations as great as those shown below:

<i>Study</i>	<i>1939</i>	<i>1940</i>	<i>1941</i>
Multiple Taxation	\$31,037	\$50,049	\$52,061
Carrier Taxation	5,000	14,000	44,000
Difference	\$26,037	\$36,049	\$ 8,061

also collect a capital-stock tax. However, the usual situation is that if the capital-stock tax is relatively heavy, the state does not levy a corporate-income tax. The amount collected by the various states in capital-stock taxes was only \$42,019 in 1943, about one-fifth of the amount collected from the state corporate-income taxes.⁴ The amount collected, by years, from 1939 through 1945 was as follows:

STATE CAPITAL-STOCK-TAX COLLECTIONS FROM SEVENTEEN
DOMESTIC AIR CARRIERS, 1939-1945

<i>Year</i>	<i>Amount of Tax (In Dollars)</i>
1939.....	\$19,243
1940.....	31,369
1941.....	35,976
1942.....	35,902
1943.....	42,019
1944.....	48,742 ^(a)
1945.....	52,944 ^(a)

^(a) Estimated upon basis of increase in total capital stock of domestic airlines.
Source: See Appendix A, Table 5.

The funds collected through the application of the state capital-stock tax are either used for general expenditures of the state, or are set aside to be used by the state department having as its duty the regulation of corporate registration and control.

The principal problem discussed in the analyses made by the Federal government of air-carrier corporate-income and capital-stock taxes is that of allocation—in other words, the problem of determining what portion of an airline's total profits and what portion of its total capital stock should be taxable by the various states. This problem is important and will be discussed, but it is not unique to the domestic air-carrier industry. Another problem that is associated with the collection of corporate-income taxes is that of the relative burden borne by corporations financed with equity capital and those financed with loan capital. This problem is discussed in some detail later in this chapter. At this point, in connection with the state taxation of corporations for general revenue purposes, the problem of state taxes and the encouragement of new industries is briefly analyzed.

⁴ Appendix A, Table 5, gives data for capital-stock tax collections by state.

REQUIREMENTS OF MODERN STATE BUSINESS TAXATION

Many states, particularly in the southern section of the United States, are actively engaged in programs aimed at attracting industry to their areas. It is doubtful if a tax program aimed at attracting corporations to locate in a particular area will be signally successful, largely because there are so many other factors which, in most cases, are so much more important than the local tax burden, or lack of burden, which, in any case, may be only a temporary situation. State tax programs should, however, be considered in the light of the possible retarding or encouraging influence they might have in the development of new industries and the modernization of old ones. This type of analysis is of much greater importance than one dealing with methods of inducing industry, by low tax rates, to locate in particular areas. The goal of modern business taxation should be the provision of the proper tax environment for the birth of new industries, for the prompt purchase and use of the most efficient equipment, and the provision of adequate employee retirement, sickness, and injury benefits; also, to provide a cushion to be available during periods of business crisis. In addition, business should pay society for the portion of the national heritage it consumes and for the general services provided by government which directly benefit business.

The danger is that the latter and the older concept of general business (and secondary in importance) taxes will predominate and work in a direction counter to that required if business taxes are to perform their primary function. The possibility of negating the desirable effects of one tax by the levy of another is very great in the relationship between state and national levies.⁵

Fiscal policy is not concerned merely with aggregates of expenditure and collection; rather this is perhaps of much less concern than the manner and for what purposes the expenditures

⁵ "Local governments...incurred continuous deficits from 1920 through 1932.... From these data it is evident that the pattern of local income and outlay augmented the disposable income of individuals in the twenties when it was already high owing to prosperous business conditions, and, due to the lag between appropriations and actual expenditures, it bolstered up the declining income during the early depression years. The net effect of such a fiscal policy is to accentuate the amplitude of the prosperous phase of the general business cycle and reduce somewhat the amplitude of the depression phase." (*Public Finance and Full Employment* by the Board of Governors of the Federal Reserve System, 1945, p. 118.)

are made, and the manner and from whom the taxes are collected. It is in this area where specialized knowledge of particular industries and relationships of expenditures of particular types become the important bases for analysis. Equal amounts of money spent for different purposes have greatly different effects in the material advantages accruing to the whole community, in the material advantages accruing to the direct recipients, and in the mental attitudes and outlook of different segments of the population.

It is to these specialized and differentiated effects arising from the levy of taxes by local units of government that attention will be directed in this section of the study.

It is generally desirable that collections which governments take from business enterprise decrease during periods of business recessing and increase during the prosperity periods. This is, also, always the actual situation in the aggregate amounts collected. This variation in the total yields of various taxes during periods of differing total national incomes is sometimes referred to as the yield elasticities of taxes. In the past it has been customary to judge a tax partly upon the basis of these fluctuations of aggregate collections. A tax which brought in relatively stable receipts (collections did not fluctuate much from prosperity to depression) was considered a desirable tax to finance those types of governmental expenditures which also remained relatively constant from one period to the next. And, necessarily following from the same logical reasoning, those taxes which had a relatively high elasticity of yield were considered desirable in the financing of government outlays which varied considerably from period to period. Looking at the taxes merely in the aggregate this seems plausible enough. The corporate income tax would, on this basis, if levied by the state, become a tax the revenues from which would be used for the financing of state expenditures which fluctuated, the returns from the tax being considerably less in depression than during prosperity periods.

However, if the corporate income tax is thought of as a tax levied upon business and also, as a tax that brings in large revenues when business is healthy (prosperous) the time when business does not require government aid or solicitude, and that brings in

small revenues when business is sick and finds it difficult to meet expenses, thus making it difficult for the state and local governments to obtain the necessary funds required to give the private enterprise system the needed shot of extra invigorating vitamins, perhaps in the form of public works expenditures,⁶ then the corporate income tax becomes a particularly undesirable type of tax.

The revenues from the corporate-income tax fluctuate, and historically they increase when state expenditures are increasing and decrease when state expenditures are decreasing, however, the cause of the increase and decrease is the receipt of taxes rather than the desirability of expenditure. To be compensatory, state expenditures should increase when business expenditures decrease, and decrease when they increase. The corporate-income tax does not fit into this sort of pattern of fluctuating state expenditures. The corporate-income tax revenues decrease when the state should be increasing its expenditures and increase when the state should be decreasing its expenditures.

If the state is justified in collecting taxes from business, business in turn should have something to say regarding the way in which the funds should be spent. Just as the collection of funds from business is different from the collection of funds from individuals and will have a different effect, so, also the expenditures desired by business are different from those desired by individuals. As individuals, we desire that funds be expended upon projects aimed at beautifying an area, construction of good libraries, provision of adequate playgrounds, etc. As individuals, this is also usually true of business leaders who as citizens approve expenditures of public funds for such purposes. However, these types of expenditures are seldom considered desirable by these same men as heads of operating businesses. The obvious reason, of course, is that the profits resulting from such expenditures will not be sufficient to justify them. In other words, they are not self liquidating expenditures.

It has been true in the past that governments often spent funds collected in a manner dictated by pressure groups. There have

⁶ "To repeat, money spent or withheld for capital outlays is high-powered money, whether in the upswing or in the downswing." (Hansen, Alvin H., Hearings, TNEC, 76th Congress, First Session, Part 9, "Savings and Investment," p. 3503.)

been no examples of an attempt to divide funds into two groups; those collected from individuals and those collected from businesses, and then spend those funds collected from individuals in the manner that individuals desire to have them spent and those funds collected from businesses in the manner business desires to have them spent. As a larger and larger portion of the total national income is channeled through government the problem of expenditure control becomes increasingly important; it may be desirable to consider expenditures more carefully in relation to revenue source.

The fluctuating portion of state and local government expenditure is largely associated with tax income varying with business activity. However, the manner in which the receipts are spent is, to a great extent, determined by the desires of individuals not directly associated with the operation of a business establishment. If revenues collected from business enterprise were looked upon as revenues obtained from business and to be spent in the manner desired by business, it is quite possible that the compensatory activity of the state and local governments would be considerably increased. If this point of view were accepted, business taxes might be looked upon as a necessary and desirable business expense required to maximize profits. Taxes might become the manner in which business firms purchased those materials and services required by business but which can be more advantageously provided by forced group participation through government than by voluntary group action or individual action. As long as taxes collected from businesses are spent in a manner largely determined by individuals, business taxes will be considered a profit-decreasing expenditure. Because this is true, increased business taxes will discourage business activity and business initiative for they will decrease the net returns resulting from these activities. All business activity must necessarily be determined by the probable effect it will have upon profits. No other considerations can possibly play an important role. By the very nature of business, nothing else other than the profit and loss statement can possibly have any effect upon business activity. Also, counterwise, anything which affects the profit and loss statement

will have an effect upon business activity. The failure to recognize this fact has been an insufficiently-considered, basic weakness of all business taxes.

Recently, considerable interest has arisen regarding, what is often called, business incentive taxes. The phrase "business incentive taxes" appears to be an anomaly very difficult to reconcile with observations of the results of all taxes levied upon business. However, it is pointed out by those advocating the adoption of business incentive taxes, that if taxes are sufficiently higher for a particular businessman because he had not purchased new equipment or has not conducted expensive experiments to devise new production methods, then he will be encouraged to perform these types of activities which are considered advantageous to a developing economy and to the maintenance of prosperity and full employment. The fact that this is apt to be the actual result is due to the particular attitude held regarding business taxes outlined in the preceding paragraphs.

If only those taxes were collected from businesses which could be used efficiently by business in group action, then the need and the possibility of incentive taxes would largely disappear. Any activity by business which would not be profitable would not be undertaken. The test of an activity would be true profitability as determined by expenses arising in the production process over which the industry has a control, deducted from proceeds of the sale of the products upon the market. An activity would not be undertaken because it becomes profitable as the result of the fact that its undertaking will decrease the amount of the tax burden which the corporation has to bear by an amount greater than the unprofitableness of the particular undertaking. The performance of unjustified activities and the waste of the resources of the nation can take place just as truly in an industrial plant that is induced to perform certain types of activities because of resulting tax reductions as it can take place in the continuation of types of government activity after the need is gone or which are continued with personnel that are not particularly qualified to perform the functions for which they are employed. Boondoggling is no respecter of type of activity or type of ownership.

Under a profit system there is no other way in which a business can be operated other than along the lines dictated by procedures which will maximize profits. The levy of business taxes, the expenditure of which are not controlled by business, violates this principle. Also, in the same sense, the inducement of business to perform activities by reduction in tax liabilities violates the profit dictum and to that extent makes business policy uncertain. However, if only those funds are collected in business taxes which business firms desire to spend jointly rather than individually, then the undertaking of research, and the purchase of new equipment, and the establishment of new business can be undertaken as the result of the calculation of the probable profit resulting from the sale of goods, with both selling price and cost of production predictable by the entrepreneur.

The levy of business taxes by the states has borne little relationship to the expenditures made by the states that were directly related to business activities. Business has been regarded as just another source of revenue. However, the burden of taxes levied upon business has often been considered, in a sense, quite different from the manner in which it is considered when related to individuals. This has been recognized in studies which have been made regarding the burden of state business taxes, in the various tax inducements made by states interested in attracting industry, and also in the special manner in which some states have provided for the expenditure of collections made from certain businesses.⁷

The levy of state corporate income taxes is a variable burden which is borne by all corporate businesses. The taxes collected become a part of the state's general revenue. The expenditure of the funds collected is only generally or incidentally related to expenditures desired by business firms and not at all related to the contributions made by a particular business firm. The amount collected is determined by net profit and does not take into consideration the greater or less need for the accumulation of surplus by a particular business. The collections do not consider the

⁷ Cf. Leffler, G. L. and Groves, Harold M., *Wisconsin Industry and the Wisconsin Tax System* (University of Wisconsin Press, Madison, Wisconsin, 1930).

greater need for the payment of dividends by new industries as compared with well-established industries. The collections do not take into consideration the difference in the degree of business fluctuation of various industries. Usually inadequate regard is given to the differences in methods of finance. For these rather generally recognized reasons and for numerous specialized ones, the levy of the corporate-income tax along with all other business taxes have an influence upon the development of businesses, an influence frequently uneconomical and, in many cases, from any point of view, undesirable.

The new interest which has arisen in the burden of business taxes is closely associated with the desire in a democratic-capitalistic country that the vast majority of economic activity be conducted by privately owned and managed establishments, the extent of whose operations is determined by the profit possibilities. The trends apparent in Europe and the United States are of such an order that it has become apparent to even the most casual observer that business enterprise of the non-monopolistic type must be provided with an environment more favorable than that which has existed during the past decade. Taxes levied upon business, particularly the corporate-income tax in the United States, have been seen to have a restrictive influence upon the development of growing enterprises.⁸

It has been pointed out frequently that a corporate-income tax reduces the attractiveness of investment in a new and untried business firm. This is true because the tax will cut down the rate of the return if the venture is a success and will contribute nothing if it is a failure. In addition to this widely-accepted relationship between corporate-income tax collections and the development of business enterprises, Dr. Butters and Mr. Lintner as the result of their investigations have discovered that the corporate-income tax as now levied has other retarding influences. Their study, however, did not attempt to take into consideration the beneficial effects which might have arisen from the expenditure of the funds collected and from the fact the taxes were not levied upon individuals. Nearly all of the benefits were found to be indirect in

⁸ Cf. Butters, J. Keith and Lintner, John, *op. cit.*, p. 7.

their effects, while the retarding influences were found to be direct and of immediate importance.

On the other hand, the findings indicated that the restrictive effects of high personal taxes appeared to be much less. Certainly this was partly due to the desirability of using the corporation to retain realized earnings and the fact that the tax upon capital gains was considerably less than the individual income tax rate on large incomes. However, it was the opinion of Dr. Butters and Mr. Lintner that the most important reason why high personal taxes had less restrictive effects arose from the fact that the effect of personal taxes on management incentives was much less direct.⁹ The opinion of Professor Groves is in many respects similar to the above noted findings. For example, he states "There is reason to believe that decisions concerning production and expansion are influenced more by management's interest in the company's earning record than by hope of a high return for investors." And later he notes that "The company's success, with which management identified personal success, is measured first by corporate net earnings, next by dividends, and least by dividends net of personal tax."¹⁰ The same opinion is expressed by Professor Hansen in his discussion of a postwar tax program.¹¹

Income of individuals can be separated from income of business by definition or by custom. The economic effect will not differ. For example, if it were declared that all profits of corporations were the property of the individual stockholders, whether dividends were paid or not, then each individual would have to pay a tax upon undeclared "dividends."¹² The burden of this tax would not be upon the corporation, and the corporation could not possibly consider the tax a burden and an expense which must be considered in determining prices. The same would be true, for example, in the taxing of individuals upon unrealized capital gains. This type of tax would not be considered a business expense and burden as is the tax upon the capital stock of a business. The

⁹ Butters, J. Keith and Lintner, John, *op. cit.*, p. 3.

¹⁰ Groves, Harold M., *Production, Jobs and Taxes* (McGraw-Hill, New York, 1945), pp. 24, 25.

¹¹ Hansen, Alvin H., "A Postwar Tax Program," Chapter XVI of *Economic Reconstruction*, edited by Seymour E. Harris (McGraw-Hill, New York, 1945), p. 295.

¹² Cf. Groves, Harold M., *op. cit.*, pp. 42, 43.

same decisions based upon the same possible profit margin could be made and would be made whether the tax were levied or whether it were not.

This type of attitude necessarily requires that funds collected from individuals would never be made available to business. If business wishes to benefit from large government expenditures during periods of stress, then business should be sufficiently taxed during prosperity to repay the debt accumulated as a result of this compensatory spending program.

The fact that states do not have the resources to engage in compensatory activity similar to that of the Federal government should be recognized in the method adopted by states in their taxation of corporations, which means that states cannot enter into programs aimed at modification of the business cycle in the same manner as the Federal government. However, there is an area in which they can appropriately operate.

The states by a rigid distinction between individual and business tax collections can aid in the development of new enterprises and the expansion of the old. The taxes levied upon business, if considered strictly revenues for the aid of business, can be used in the manner which will provide the greatest direct benefit to business. By the nature of their fiscal operational limits states are restricted in the aid which they can give business by approximately the amount which they collect in taxes.

Taxes levied upon business can never be considered to be available for general expenses in the same sense as taxes levied upon individuals. This is true because of the great divergency of the two in their capacities to enjoy a generally recognized benefit from expenditure. Individuals enjoy expenditures in many different ways, most of which have very little to do with the direct increase of their cash balance. Businesses, however, can enjoy expenditures of the state in one manner only; that one way is by how much those expenditures increase the profits of the concern. This fact is often forgotten in justifications of business taxation which vaguely speak of business paying, in an equitable manner, its share of the general expenses of the governmental units under which it operates.

APPORTIONMENT

State taxation of interstate firms brings with it the difficulty of apportionment. The basic problem is the same whether the corporation is engaged in the transport business or in some other less mobile type of endeavor. However, new difficulties arise in the apportionment of the total business of transportation companies and these problems are multiplied when apportionment of the activities of the domestic airlines is attempted. Suitable factors for the allocation of taxable income of a typical manufacturing or processing corporation or special allocation formulae developed for the transport industries are quite apt to be unsuitable for application to airlines.¹³

There are a number of allocation factors which have been considered appropriate in the determination of the portion of the total income of an airline which one state should tax. These factors have been combined into formulae in various ways by students of the problem (Table 23). These formulae are con-

TABLE 23—FORMULAE FOR ALLOCATION OF NET INCOME TENTATIVELY
RECOMMENDED BY THE VARIOUS COMMITTEES OF TAX EXPERTS

ALLOCATION FACTORS	ALLOCATION FORMULAE OF:			
	Civil Aeronautics Board	Air Transport Association	National Tax Association	National Association of Tax Ad- ministrators
	<i>Per Cent</i>	<i>Per Cent</i>	<i>Per Cent</i>	<i>Per Cent</i>
Revenue ton-miles.....	..	33 $\frac{1}{3}$	..	..
Originating and terminating tonnage	40	33 $\frac{1}{3}$	..	..
Originating revenue	40	33 $\frac{1}{3}$	X ^(b)	X ^(d)
Ground pay rolls.....	20	..	X ^(a)	..
Overhaul base pay rolls.....	..	..	..	X ^(c)

^(a) Weight = Percentage of ground pay rolls to total pay rolls.

^(b) Weight = 100 minus percentage of ground pay rolls to total pay rolls.

^(c) Weight = Percentage of overhaul base pay rolls to total pay rolls.

^(d) Weight = 100 minus percentage of overhaul base pay rolls to total pay rolls.

Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. No. 141, p. 58.

¹³ "The fact that specified businesses are accorded special tax treatment in certain states is not a valid or sufficient reason for devising another special type of tax for airlines or using the differential forms applicable, for example, to certain other transportation agencies. Such special treatment may or may not be suitable to airline operations." (Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, p. 43.)

sidered by their proponents to be uniquely suitable to the airline industry.

The following provisions were included in H. R. 3446, introduced in the House of Representatives on June 12, 1945, by Mr. Alfred L. Bulwinkle, member of Congress from North Carolina:

(c) For taxes on, or measured by, net income, the allocation formula for the distribution of the taxable base shall be comprised of three factors, weighted as hereinafter indicated.

(1) The sum of its passenger, freight, and express tonnage originating in the State and its passenger, freight, and express tonnage terminating in the State, divided by twice the total passenger, freight, and express tonnage carried by it, with a weight of two;

(2) The sum of its passenger, freight, and express revenues originating in the State, divided by its total originating passenger, freight, and express revenues, with a weight of two; and

(3) Wage and salary payments to persons employed by it within the State (exclusive of payments to flight crews), divided by its total wage and salary payments (exclusive of payments to flight crews), with a weight of one.

With the exception of the allocation formula recommended by the Air Transport Association, all of the formulae exclude bridge states from a taxable share of an airline corporation's net income.¹⁴ At present, the omission of bridge states from the allocation formula seems to be the most desirable solution; however, it is possible that considerable litigation may arise from this exclusion. This possibility would be especially likely between states bordering upon a large airport which received a great portion of its revenue from business originating in actions of citizens of the border states. If this allocation formula which excludes bridge states has the tendency to determine the location of airports upon the basis of political division eligible to collect taxes rather than geographic and economic considerations, then a factor should certainly be included which would allocate some of the net income of the various airlines to these bridge states. However, great difficulties arise in attempting to determine upon an allocable factor suitable for use in determining a tax base useable by the bridge states.

¹⁴ See also allocation formulae of tax values, p. 109.

All mileage factors involve the possibility of avoidance, especially by airlines not flying scheduled routes. Also, there is the problem of flights made over international territory. For example, if mileage flown over a state became a factor, many airlines would decide to fly from New York to Miami by passing over the water of the Atlantic Ocean rather than the land of the various states between New York and Florida. The cost of both compliance and enforcement of any law including a mileage factor would be high. For these reasons, it would appear undesirable to include mileage as a factor in the taxation of airlines, despite the frequent and successful use of mileage in determining the taxable portion of surface transport property or taxable income available to a particular political unit. In addition, the claim of a state to exact taxes upon the basis that planes went through the air several miles above the earth is considerably weaker than that based upon the passage of a vehicle over a route constructed upon the surface of the earth.¹⁵

FEDERAL CORPORATE TAXES

The corporate tax levied by the Federal government upon air-transport companies developed during the war into the greatest single tax paid. This has been the result of two factors working in the same direction: first, the profitableness of all types of transportation during the war; and second, the sharp increases which took place in the Federal corporate tax schedule. In 1943, the Federal income taxes paid by the domestic airlines amounted to over \$14.3 million or about 77 per cent of the total taxes paid in 1943, which totaled \$18.5 million. The estimated Federal income tax was 72 per cent of total taxes paid in 1945. The total income tax collections of the Federal government from domestic airlines during the 1939-1945 period is shown below. The data reported include collections from the normal-income tax and surtax, excess-profits tax, and the declared value excess-profits tax. In future reference to these totals, the label, "Federal corporate taxes" will be used.

The collections of Federal corporate taxes from the airlines are treated in the same manner as collections from industries which

¹⁵ 322 U.S. 292, 306, Mr. Justice Jackson (1944).

FEDERAL CORPORATE INCOME TAX COLLECTIONS FROM SEVENTEEN
DOMESTIC AIR CARRIERS, 1939-1945

<i>Year</i>	<i>Federal Corporate Income Taxes: Total (In Dollars)</i>	<i>Per Cent of Total Taxes Paid^(a)</i>
1939.....	\$ 807,161	28
1940.....	1,456,119	33
1941.....	2,590,715	40
1942.....	10,889,436	74
1943.....	14,349,127	77
1944.....	17,984,601	79 ^(b)
1945.....	16,915,207	72 ^(b)

^(a) 1939-1943—computed from data in Table 1, Appendix A; 1944 and 1945 computed from preliminary data of the Civil Aeronautics Board.

^(b) Estimated from total income tax figures for domestic airlines reported by the Civil Aeronautics Board for calendar year 1944 and 1945. Estimate based on the relative increase in growth of state and Federal income tax collections in calendar year 1943 from 1942.

Source: See Appendix A, Table 1.

have not received extensive direct government benefits. Under present governmental accounting methods, this is perhaps unavoidable. However, it would be desirable if an account were set up that showed the receipts of the Federal government from the airlines and the expenditures of the Government in the provision of facilities directly beneficial to domestic air transport. The government collections from an industry such as the airlines should be placed in a category quite different from that assigned to the typical American corporation. If the reasonableness of this position is accepted, then corporate taxes paid by the airlines are not for the payment of the general government expenditures as they have so often been considered to be.

The corporate-income tax is paid only by those corporations making a profit. The tax, by the very nature of the measure selected, is determined to be a tax from which non-profit corporations are exempt. The deduction from the profits of the different domestic airlines of the annual expenditures made directly by the municipalities and the Federal government plus a reasonable depreciation charge would eliminate the profits of the majority of the airlines.

The payment of dividends to individuals owning stocks of various domestic air carriers must be considered as the cost of

obtaining these funds and not as the payment of profits. Thus, dividend payments of domestic air carriers correspond to the interest payments of the railroads. To a great extent this is the actual situation, and in the degree that it is not true the government must be considered to have subsidized the investors in domestic air-carrier securities.

Table 24 provides estimates of the 1945 rate of return earned by the domestic air carriers upon their total depreciated assets. Although the number of corporations experiencing net losses was greater in 1944 than in 1945 (four in 1944 as against one in 1945)

TABLE 24—NET EARNINGS AFTER INCOME TAXES, TOTAL DEPRECIATED ASSETS, AND NET EARNINGS AS A PER CENT OF DEPRECIATED ASSETS, SEVENTEEN DOMESTIC AIRLINES, 1944-1945

COMPANY	TOTAL DEPRECIATED ASSETS		NET EARNINGS AFTER INCOME TAXES		NET EARNINGS AS A PER CENT OF DEPRECIATED ASSETS	
	1944	1945	1944	1945	1944	1945
All American	\$ 1,519,866	\$ 1,634,113	\$ 198,485	\$ 74,216	13.1	4.5
American . .	39,262,397	45,857,964	4,396,163	4,339,458	11.2	9.5
Braniff . . .	8,659,355	9,117,391	861,868	849,838	9.9	9.3
Colonial . .	2,187,616	3,329,315	127,703	83,662	5.8	4.6
Chicago & Southern .	906,908	1,835,439	—28,839	168,891	—3.2	5.1
Continental	3,819,182	2,782,420	201,589	494,225	5.3	17.8
Delta	3,285,425	5,524,318	549,811	654,032	16.7	11.8
Eastern . . .	25,507,760	31,515,709	1,499,338	2,126,294	5.9	6.7
Inland	670,066	674,333	—57,492	13,223	—8.6	2.0
Mid-Continent	2,275,902	2,414,907	125,879	171,973	5.5	7.1
National . .	2,815,598	5,628,198	—28,807	68,578	—10.2	1.2
Northeast . .	2,344,131	2,789,351	—77,042	—165,368	—3.3	—5.5
Northwest . .	8,508,259	13,119,413	635,466	928,708	7.5	7.1
Penn. Central	6,260,525	17,842,121	404,636	441,467	6.5	2.5
T. W. A. . . .	26,194,779	45,758,409	2,741,088	1,806,345	10.5	3.9
United	51,154,158	55,492,191	7,024,463	4,668,824	13.7	8.4
Western . . .	3,867,256	3,867,256	185,610	195,902	2.8	5.1
Total . .	\$189,239,183	\$249,182,846	\$18,759,919	\$16,920,268	9.9	6.8

Source: 1944—Civil Aeronautics Board, *Annual Airline Statistics* (1944), pp. 31, 33-35; 1945—December, 1945, CAB Form 2780.

the earnings of all domestic airlines as a per cent of total depreciated assets were greater in 1944 than 1945. The average earnings of all airlines in 1944 was 9.9 per cent of total depreciated assets while in 1945 it fell to 6.8 per cent. Two of the airlines which indicated a net loss for 1944 but a profit for 1945 (Chicago and

Southern and National) approximately doubled the value of their total depreciated assets during the same period. Only one airline (Northeast) found it impossible to make profits during both years; however, even this line found it possible to expand its total depreciated assets by about 14 per cent.

If 1945 is accepted as a rather typical year (certainly there are many reasons why it should not be considered typical), the generalization can be made that the average profits of the seventeen domestic airlines were not in excess of those required to provide the owners of equity in the corporations with a fair return upon that type of investment. Some of the airlines did not experience sufficient earnings to provide the equity owners with an adequate return upon their investment. However, in some cases this was obviously a temporary situation due largely to rapid expansion (for example, Pennsylvania Central and T.W.A. Airlines). A few airlines found it possible to maintain consistent earnings considerably above the average and at the same time experience a rapid expansion. Within this fortunate group fell such lines as Delta, American, and Braniff. However, the earnings for the first six months of 1946 indicate that expansion activities have eaten up the profits of most of the airlines.

It is certainly true that it would be hard to find a better basis on which to judge the value of the benefits which an industry has received than that of profits earned. Also, the profits measure separately those firms of the industry able to make a contribution toward the payment of benefits received from those unable to do so.

The capital used in the financing of all domestic airlines was largely obtained from sale of stock. This nearly universal use of the equity method of financing makes the corporate tax a much more equitable tax between different airlines than is typically the case. Since the tax (in the sense considered here) is not a tax levied upon the airlines for the payment of general government expenses from which the airlines would not receive direct proportional benefits, the fact that the tax falls more heavily upon the airlines than other types of transportation loses a considerable portion of its importance. The difference in burden arising from

different methods of finance continues to exist. This becomes, however, a comparison between the portion of government subsidy paid by the various forms of transportation, and the portion of such subsidy which should be paid considering the total effects upon the efficiency of the economy arising from the payments of different portions, rather than that of the total amount collected by the government from different industries in relation to their ability to contribute.

The amounts that airline corporations pay to the Federal government in income taxes vary considerably from year to year and also considerably from corporation to corporation in a given year. Table 25 indicates the calculated income tax liability of the do-

TABLE 25—AMOUNTS PROVIDED FOR INCOME TAXES, DOMESTIC AIRLINES, BY COMPANY, CALENDAR YEARS, 1943-1945

COMPANY	1945	1944	1943
All American	\$ 76,738	\$ 246,645	\$ 7,137
American	3,831,667	4,078,148	3,520,078
Braniff	458,883	669,990	415,586
Chicago & Southern.....	122,300	126,000	86,277
Colonial	64,600	(1,504)	2,600
Continental	337,443	152,739	144,284
Delta	120,344	623,012	189,700
Eastern	6,211,923	4,237,502	3,750,622
Inland	20,900	12,416	30,760
Mid-Continent	142,442	129,605	64,295
National	45,719	....	6,000
Northeast .....	....	....	....
Northwest	619,796	609,885	369,132
Penn. Central	311,400	340,000	220,000
T. W. A.....	1,167,061	2,039,193	1,567,614
United	3,402,001	4,744,400	3,477,867
Western	521,804	158,476	48,087
Total.....	\$17,455,021	\$18,168,011	\$13,900,039

Source: 1943-1944—Civil Aeronautics Board, *Annual Airline Statistics*, pp. 29, 31; 1945—data obtained by author from CAB Form 2780, December 31, 1945.

mestic airlines for the calendar years 1943, 1944, and 1945. The provision for income taxes of Eastern Airlines in 1945 was 50 per cent greater than American or United Airlines while in 1943 it was approximately the same. All three of the big three (American, TWA, and United) provided for more income tax payments in 1944 than in 1945.

AIRLINES AND RAILROADS COMPARED

The chief competitors of the airlines are the railroads. This is true in the field of long distance passenger service, mail service, and express. As yet the airlines have not entered actively into the transportation field exploited by the bus and truck lines; i.e., cheap short hauls. Because this is true, this study has largely concerned itself (when considering taxes and the relative competitive position) with a comparison of the situation in the railroad industry and the air-transport industry.

It has been argued frequently and pointed out in this study that the corporate tax in its present form is unjust because of the unequal burden it places upon industries financed by the use of funded debt and those financed with equity capital. The Federal corporate-income-tax law provides that interest paid out may be deducted as an expense while dividends may not. This means that the cost of providing capital if the debt is funded is deductible in arriving at the total taxable income while it is not deductible if the debt is in the form of common or preferred stocks. Because this is true, it is generally believed that the corporate-income tax places an additional burden upon equity-financed corporations. Although the general outline of this position must be accepted as true, it should be modified by pointing out that corporations have not been forced to finance their operations by the use of equity capital and that most of them could have, if they had desired, obtained their funds by the sale of bonds rather than the sale of stock. Thus it would seem that the advantage of equity financing overbalances the extra tax burden it entails.

Airlines have largely financed their operations by the sale of common stock while the railroads have made major use of bonds. This relationship is indicated by Table 26.

Table 26 indicates in a striking fashion the different methods employed by these two types of carriers in obtaining their capital requirements. The difference means that the corporate-income tax falls much heavier upon the airlines than it does upon the railroads. It is very nearly impossible to determine the exact extent to which the corporate-income tax has favored the railroads

over the airlines.¹⁶ However, with corporate taxes going up to 38 per cent of taxable income, the amount cannot be considered negligible.¹⁷

The peculiar relative vulnerability of the airlines to corporate taxes is due to their nearly exclusive use of equity capital for

TABLE 26—PERCENTAGE DISTRIBUTION OF LIABILITIES AND NET WORTH,
AIRLINE AND STEAM RAILWAY GROUPS, 1940

ITEMS	STEAM RAILROADS	AIRLINES
Current liabilities	3.4	21.9
Long-term debt	47.0	7.3
Other liabilities	7.2	2.4
Net worth, total	42.4	68.4
Capital stock	32.6	62.9
Corporate surplus	9.8	5.5
Total	100.0	100.0

Source: Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, p. 36.

financing and the proportion of total property owned which is high earning property. Largely as the direct result of these two facts the corporate-income tax in 1940 constituted a larger portion of the total tax bill of airlines than was true of any other carrier group with the exception of water carriers and pipe lines.¹⁸

¹⁶ It is, of course, realized that the relative tax burden cannot be determined by merely comparing tax payments. The extent of government subsidy to the two types of transportation must also be matched. This was previously emphasized on p. . . . of this study. However, the determination of the degree of government subsidy to the different types of transportation is a very complicated problem, and will not be attempted here. If additional information regarding government subsidies to domestic transportation is desired, the reading of *Public Aids to Domestic Transportation*, the study made by the Board of Investigation and Research, 79th Congress, First Session, House Document No. 15, 1944, is recommended.

¹⁷ The air carriers have been exempted from the surplus profits tax to the extent that their earnings consist of airmail grants.

¹⁸ Cf. Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, p. 38. "Air carriers are relatively overtaxed on income tax, undertaxed on pay-roll and special taxes, undertaxed for the use of public airports, and not taxed for airways." (*Ibid.*, p. 10.)

CHAPTER VII

THE AIR-MAIL SUBSIDY¹

The recent reduction in the air-mail postage rates has reminded everybody that the Federal government through the rates charged for different types of postal service has a definite effect upon the industrial development of the nation. Moreover, one is again reminded that the charging of prices by the government can be an important source of government revenue, the expenditure of which can have additional important economic effects.

The airlines have been used extensively for the transport of mail. The air-transport industry was founded upon a financial foundation of mail contracts. Also there has arisen considerable controversy regarding governmental expenditures for the transport of mail. The controversy has revolved about the amount of benefits which have accrued directly as the result of swifter movement of mail and the indirect benefits accruing to the citizens of the United States through the accelerated development of commercial aviation in the United States. Also, there is some disagreement, not, however, on the popular level, regarding the manner of considering the revenues collected by the Post Office Department from the sale of air-mail postage. The former discussion has centered about the following two points:

1. Should receipts arising as the result of the sale of air-mail service be deducted from the amount of the grants to the airlines in arriving at the amount of the government subsidy?
2. Should the necessary cost of transporting the mail by air be considered the base and the amount which the postal grants to airlines exceed this necessary amount be considered a subsidy to the airlines?

Actually, the cost of sending mail by air (air-mail postage rates) was not determined by the cost of such service but rather it was the result of public policy. The postal officials could dras-

¹ "A subsidy is wrong, not for itself, but only if it disadvantages those not so favored or if it proves ultimately disadvantageous to the recipients themselves." (Joseph H. Spigelman, *Harpers Magazine*, August, 1946, p. 188.)

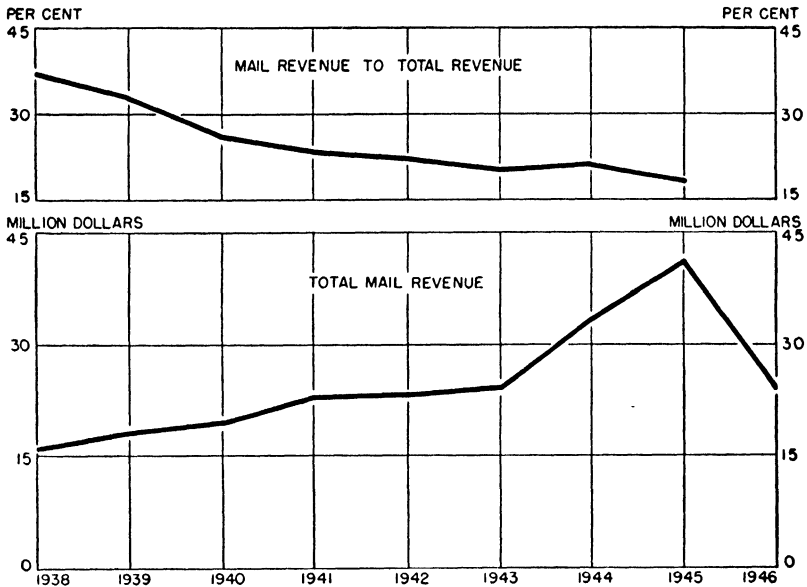
tically lower the cost (cost to consumers of air-mail service) of sending mail by air and thereby considerably reduce the total receipts from sale of air-mail postage (how low the rate would have to be reduced before this reduction would take place would depend upon the elasticity of demand for air-mail service) and thus, in accordance with the argument that receipts from sale of air-mail postage should be deducted from the amount of government grants to airlines, would greatly increase the amount of government subsidy. To many, this type of relationship indicates the obvious shortcomings of considering postal receipts when attempting to determine the amount of airline subsidy. This, however, is not a well-considered attitude. In the case of the low air-mail rate, the users of air-mail service rather than primarily the airlines were being subsidized. However, it is quite possible for the government at one and the same time to subsidize both the users of air-mail service and the carriers of air mail. This most likely was the situation during the early stages of the development of air-mail in America. The postage charge did not equal the actual cost of providing the service, and the grants to the airlines were in excess of necessary costs arising from the provision of the service.

AIR-MAIL REVENUES

Table 27 summarizes the importance of mail revenues to the domestic air-lines. Mail revenues of the domestic airlines increased from \$15,797,988 in 1938 to about \$41 million in 1945 (a sharp drop indicated for 1946). The percentage of total revenues represented by mail receipts decreased continually from 1938 to 1945 (Chart 10). In the future, the portion of the total receipts which will be mail revenues is expected to be much less than the estimated 17.6 per cent in 1945. During the first four months of 1946, mail ton-miles flown by twenty domestic airlines decreased 40.7 per cent while the revenue passenger-miles increased 74.1 per cent during the corresponding period.² The trend undoubtedly approximates that of the seventeen domestic airlines the operations of which have been the basis of this study.

² Civil Aeronautics Administration Press Release of July 22, 1946.

CHART 10—TOTAL MAIL REVENUE, AND MAIL REVENUE AS PER CENT OF TOTAL REVENUE, SEVENTEEN DOMESTIC AIR CARRIERS, 1938-1946



Source Table 27

TABLE 27—TOTAL MAIL REVENUE, AND MAIL REVENUE AS A PER CENT OF TOTAL REVENUE, SEVENTEEN DOMESTIC AIR CARRIERS, 1938-1946

YEAR (Calendar)	TOTAL MAIL REVENUE	MAIL REVENUE AS A PER CENT OF TOTAL REVENUE
1938	\$15,797,988	37.3
1939	18,263,077	33.1
1940	19,833,010	26.2
1941	22,436,775	23.4
1942	23,202,761	22.1
1943	24,071,281	20.0
1944	33,171,940	21.0
1945 (Est.)	41,000,000	17.6
1946 (Est.)	24,600,000	...

Source: 1938-1944—Civil Aeronautics Administration, *Statistical Handbook of Civil Aviation*, 1945, p. 33; 1944 and 1945, CAA Press Release, of July 22, 1946.

AIR-MAIL PROFITS

It is undesirable to remove entirely from consideration the fact that a subsidy to an industry is of a different sort if consumers are willing as the result of free choices to pay an amount above the

cost of providing the service than when the industry is paid an amount in excess of cost but the funds for making the payment are not forthcoming from the users of the goods or services provided by the firm or industry. Recent data regarding postal grants to air-lines and air-mail postal collections are given in Table 28, and the relationship between air-mail receipts and expenditures is shown in Table 29 and Chart 11.

TABLE 28—PAYMENTS MADE TO AIRLINES FOR AIR-MAIL SERVICE, AND POSTAL RECEIPTS FROM AIR MAIL, 1941-1946

YEAR	FUNDS GRANTED TO AIRLINES FOR CARRYING MAIL	AIR-MAIL POSTAL RECEIPTS
1941	\$20,794,943	\$23,920,465
1942	23,586,342	33,417,366
1943	23,427,686	62,818,568
1944	28,528,559	79,412,510
1945	35,503,566	81,237,389
1946	25,212,271 ^a	.....

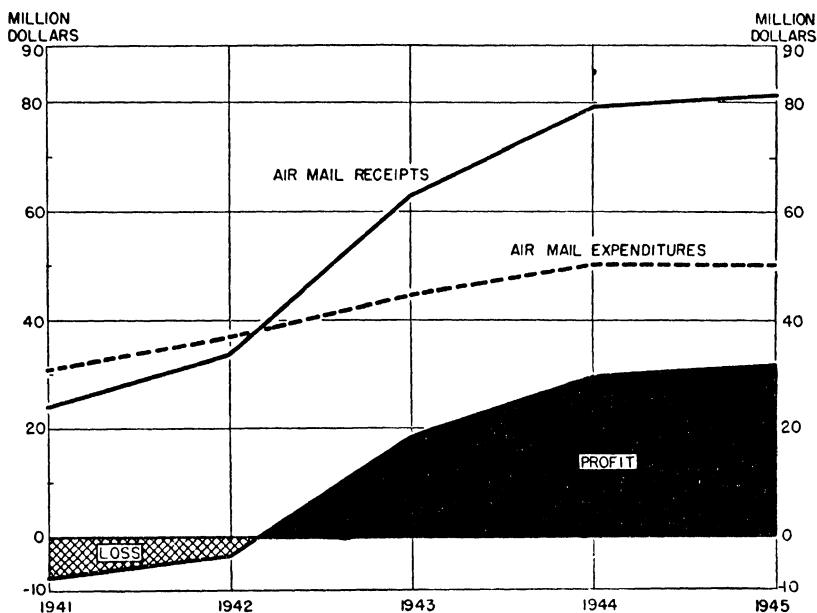
^a For 12-month period ending July 31, 1946.

Source: 1941-1944—Table 30; 1945—Annual report of the Civil Aeronautics Board, 1945, p. 29 and U. S. Post Office Department, Cost Ascertainment Report, 1945, p. 8; 1946—Civil Aeronautics Board Press Release, November 14, 1946.

There can be little doubt that prior to the October, 1946, \$0.05 rate, the users of air-mail were paying a subsidy to the Post Office Department; also, that, in a particular sense, the airlines have been paying a similar subsidy. For certainly the number of pounds of mail carried by the airlines could be substantially increased by a reduction by the Post Office Department in air-postage rates to a level which would just cover amounts paid to the airlines for transportation, plus costs of handling. Also, it is apparent that the airlines could make the carrying of mail a very lucrative private undertaking. If the excess which the Post Office Department collected from the sale of air-mail service in 1944 had been made available to the Civil Aeronautic Authority, it would have been only \$2 million short of covering the total estimated expenditures of that agency.³

³ Estimated total CAA expenditures on airways in 1945 were \$28,543,023 (Table 13). Profits from sale of postal air service were \$31,300,348. It is estimated that in 1945, only 2.5 per cent of the total cost of airways should be allocated to airlines. This means that the postal air-mail profits were about \$24 million greater than the allocated expenditures of CAA upon airways.

CHART 11—EXPENDITURES AND RECEIPTS OF DOMESTIC AIR MAIL SERVICE 1941-1945



Source. Table 29

TABLE 29—EXPENDITURES AND RECEIPTS OF DOMESTIC AIR-MAIL SERVICE, 1941-1945

ITEM	1941	1942	1943	1944	1945
Total air-mail receipts	\$23,920,465	\$33,417,367	\$62,818,568	\$79,412,510	\$81,237,389
Total expenditures	30,981,836	36,508,587	44,463,208	49,881,593	49,937,041
Profit or loss from sales of postal air service	-\$7,061,371	-\$3,091,220	\$18,355,360	\$29,530,917	\$31,300,348

Source: 1941-1944—Table 30; 1945—Cost Ascertainment Report, Post Office Department, 1945, Table I, p. 8.

Despite the necessity of recognizing the formal relationship that air-mail postal receipts must not be considered a direct offset of grants to airlines by the Post Office Department, the fact that the Federal government is able to collect considerably more from the sale of air-mail postage than it pays to the air-transport industry in providing the air-carrier service, puts the expenditures of the Federal government upon airline facilities, up to the amount

of this surplus, upon what resembles a sound business basis: A profit is made by one government agency in the purchase of the services of an industry; this profit is then reinvested in the industry by another agency of the same government. It might be desirable for air-mail postal rates to continue at a height that would provide funds for government provision of airline facilities that can be provided much more efficiently by the government than by each of the airline firms.⁴

In fact, the determination of air-mail postage rates at a height which would compensate the government for a portion of its expenditures upon air-transport facilities would be nothing more than charging for the cost of providing the service. For certainly, the cost of transporting mail by air consists of two parts: first, the costs of the private airline, and second, the expenditures of the government agencies providing airline facilities of various types, which are in excess of the amounts received from the airlines in payment for these aids. It is to be expected that the airlines, in accepting contracts for the carrying of mail, would take into consideration only the costs of transport which they must meet, but certainly it is not necessary that the government do so in setting the charges to be made for air-mail service.

AIR-MAIL RATES

The government, in making its charges for air-mail service, should take into consideration not only the amounts paid to the airlines to carry the mail and the costs of the Post Office Department in handling air mail, but it should also consider the desirability of continuing the grant of a subsidy to various mail service users and the expenditures by different levels of government upon various types of airline facilities. This is particularly practical, as such a large portion of the air-transport subsidy provided by the

⁴ Even if the air-mail ground expenses are accepted as determined by the Post Office Department, it still would be incorrect to measure the public aid to carriers in terms of the relationship between air-mail revenues and total expenses of the Department involved in air-mail service. Such calculations serve a useful purpose in showing the extent to which air-mail service has been self-supporting, but they do not indicate whether or not there has been public aid or subsidy to the carriers which transport the mail. (Cf. Board of Investigation and Research, *Public Aids to Domestic Transportation*, House Document No. 159, 79th Congress, First Session, 1945, p. 440.) In addition see Tables 5 and 6, Appendix D.

different levels of government has been provided by the Federal government which, of course, is also the level of government under which the Post Office Department functions. What is most important is that this type of price policy makes it possible to pay for a portion of the air-transport subsidy. The trend of air-mail revenues indicates that the traffic will bear charges considerably above the private expenses of the airlines to carry the mail and the Post Office Department's allocated expenses to air mail. To refuse to recognize this marketing fact and the possibility it provides for financing a portion of the grants made by the Federal government to airlines would be, upon nearly any basis, considered the use of bad judgment.

All business managers more or less follow the price policy of charging what the traffic will bear. This means that the profits from the handling of some articles are considerably more than are the profits obtained from the sale of other articles. This difference in profit may be due to a number of factors, a few of which are greater turnover, smaller sales cost, smaller handling costs and, finally a larger absolute and relative gap between sales price and purchase price. The same sound and accepted business procedure should be used in setting the price of airline services. Certainly the Federal government should not avoid its use in pricing air-mail service. Moreover, there is little emotional justification and no logical basis for the belief that governments should use the most disagreeable method of obtaining funds—payment of taxes. Rather, governments should be permitted to take advantage of the most suitable revenue-raising devices which may be at hand. It would appear desirable to set air-mail postal rates at a level which would provide a portion of the funds spent by the Federal government in providing facilities, i.e., airways, weather service, and airports, for the airlines.

Recently the Post Office Department has made some calculations regarding the amounts of revenue which could be expected from the sale of air-mail service at different prices. The calculations are not particularly useful as they assume that a rate change will have no effect upon the quantity of mail being sent by air mail. In addition, the Post Office calculations are all based upon

**TABLE 30—REVENUES AND EXPENDITURES, DOMESTIC AIR SERVICE,
1918-1944**

FISCAL YEAR (ending June 30)	TOTAL EXPENDITURES FROM APPROPRIATIONS	TOTAL EXPENDITURES (direct and apportioned by Cost Ascertainment)	POSTAL REVENUES ^a	POSTAL REVENUES AS A PER CENT OF:	
				Appro- priations	Direct and Appor- tioned Cost
1918..	\$ 13,604.00 ^b		\$ 42,794.40	314.6	
1919..	717,177.00 ^b		552,602.40	77.1	
1920..	1,264,495.00 ^b	Not	1,263,787.20	99.9	
1921..	2,653,882.00		2,690,044.80	101.4	
1922..	1,418,146.00	determined	2,639,335.20	207.3	
1923..	1,897,151.00		4,073,550.40	214.7	
1924..	1,498,674.00	prior to	3,600,081.60	240.2	
1925..	2,743,750.00		558,031.20	20.3	
1926..	2,872,175.71	1929 ^c	855,938.40	29.8	
1927..	3,619,146.82		1,135,448.80	31.4	
1928..	4,209,091.16		4,468,320.00	106.2	
1929..	11,169,015.13	\$ 12,649,786.83	4,250,546.90	38.1	33.6
1930..	14,670,878.29	15,168,778.58	5,272,616.45	35.9	34.8
1931..	16,991,327.06	17,593,410.00	6,210,344.86	36.6	35.3
1932..	19,995,217.91	23,771,367.26	6,016,280.02	30.1	25.3
1933..	19,449,602.82	23,033,856.27	6,116,441.57	31.4	26.6
1934..	11,782,271.34	15,290,032.86	5,737,536.00	48.7	37.5
1935..	8,891,043.83	12,584,828.35	6,589,534.44	74.1	52.4
1936..	12,239,430.44	16,879,349.65	9,702,676.46	79.3	57.5
1937..	13,229,401.87	19,177,129.28	12,439,579.24	94.0	64.9
1938..	14,817,157.08	21,790,259.36	15,301,210.50	103.3	70.2
1939..	17,113,620.38	25,061,292.85	16,326,358.27	95.4	65.1
1940..	19,519,002.40	28,039,249.71	19,122,905.61	98.0	68.2
1941..	20,794,943.03	30,881,838.55	23,920,465.00	115.0	77.5
1942..	23,586,342.56	36,508,586.78	33,417,366.68	141.7	91.5
1943..	23,427,686.11	44,463,207.84	62,818,568.13 ^d	268.1	141.3
1944..	28,528,559.00	49,881,593.00	79,412,510.00 ^d	278.4	159.2
Total .	\$299,112,791.94	\$392,774,567.17	\$334,833,870.53	111.9	
Total: 1918-28— Direct Expenditure . . .		22,907,292.69 ^b			
Total: Over-all Expenditures		\$415,681,859.86			
Total Postal Revenues . . .		334,833,870.53			
All-Time Deficit		\$ 80,847,989.33			

^a During the fiscal years 1918 to 1928, inclusive, no segregation of air mail postage revenue was made and no determination of such revenue was made by the Post Office Department. During that period various air mail postage rates were in effect ranging from a minimum rate of \$0.02 per ounce, to special service and zone rates reaching as high as \$0.24 per ounce. Also, mail carried by air was not entirely confined to matter paid at the air mail postage rate. It is estimated, however, that the average revenue was approximately \$0.06 per piece of mail carried. Estimated revenues for the years 1918 to 1928, have been obtained by applying a rate of \$0.06 per piece to the known number of pieces of mail transported by air during those years.

^b In the fiscal years 1919, 1920 and 1921, appropriations made for star route, power boat and railroad service were used by the air mail service.

^c The figure of \$22,907,292.69 below represents the only available record of expenditures for the period 1918-1928. Direct expenditures only are included; indirect costs have not been determined, as no data are available.

^d Does not include revenue from 6-cent per one-half ounce air mail to and from members of the Armed Forces overseas.

Source: Data supplied by J. J. Haggerty, Comptroller, Post Office Department, Bureau of Accounts, April 12, 1946.

the idea that a decrease in the amount paid airlines for the transportation of mail should be accompanied by a reduction in the charge made for air-mail service. An economically sounder way of looking at the problem would be to consider a reduction in the cost of carrying air mail as an opportunity for the government to recover a larger portion of the amount spent in the provision of various facilities used by the airlines.

Neither the Civil Aeronautics Administration nor the Post Office Department has attempted to determine the amount of change in gross receipts which would be involved by charging various prices for air-mail service. An air-mail rate of \$0.05 became effective on October 1, 1946, as provided in H. R. 5560 which became law August 14, 1946. With the first class rate remaining at \$0.03, there is not much doubt that a \$0.05 air-mail rate will bring forth a considerable increase in the quantity of air mail. Moreover, it is believed that the airlines will be able to carry this increased quantity at a lower price than is now being paid. The price of \$0.32 per ton-mile is being urged by the Post Office Department. If the price of \$0.32 per ton-mile is applied to the mail carried by air in 1944, it reduces the cost by about \$5 million, or from \$49 million to \$44 million.⁵

If the purpose of the Federal government is setting its charges for air mail were to extract from this luxury service of the postal department the largest possible net revenue, then maybe it would have been desirable to have reduced the amounts paid to the airlines in providing the service while maintaining the \$0.08 charge to the users of the air-mail service. This would certainly be the way in which a private corporation would operate under similar circumstances, and it would be justified in so acting.

AIR PARCEL POST

The Post Office Department is contemplating inaugurating air parcel post. This service is expected greatly to increase the total demand for domestic air-transport space. A package that takes five days to go from New York to San Francisco by rail will be

⁵ The most efficient air-mail carriers at present would have to charge about twice as much as the most efficient rail carriers or \$1.71 per 39,000 pound-miles compared with \$0.78 by rail (*Air Transport*, May, 1946, p. 80).

delivered by air in one day.⁶ This great saving of time will certainly attract many users to the new service. The railroads will probably be able to reduce the time necessary for rail delivery but, most likely, as they do, the domestic transport lines will also be able to better their competitive position by reductions in the cost of air parcel post.

The Post Office Department estimates that at the present rates charged by domestic airlines, the cost of air parcel post for a ten-pound package delivered to the various zones would be as follows:

<i>Zone Number</i>	<i>Miles</i>	<i>Cost for a 10-lb. Parcel</i>
Zones 1 and 2.....	Up to 150	\$0.45
Zone 3.....	150- 300	0.84
Zone 4.....	300- 600	1.42
Zone 5.....	600-1000	2.31
Zone 6.....	1000-1400	3.36
Zone 7.....	1400-1800	4.39
Zone 8.....	Over 1800	5.42

Source: *The Future of Air Mail Transportation*, prepared for the Postmaster General, 15 March, 1946, p. 26.

The transportation costs would be reduced by about 28.0 per cent if the rate charged by the domestic air-transport lines is reduced to \$0.32 per ton-mile, which is the rate the Post Office Department expects to obtain within a short period of time.⁷ It is doubtful if the new lower costs should be made the basis of reduced air parcel-post rates or that it would be wise to reduce the present rates charged by the airlines for the transport of air express. For the next few years, air parcel post and air express will be luxury services in which profits will be maximized by the charging of rather substantial rates.

DISPOSITION OF AIR-MAIL PROFITS

The airlines have now developed to the economic position where the postal policy toward them should be that of maximizing the profits obtainable from the sale of air-mail and air parcel-post services. The Post Office Department should be constantly alert to the possibility of obtaining reduced rates from the airlines

⁶ *The Future of Air Mail Transportation*, prepared for the Postmaster General, 15 March, 1946, p. 26.

⁷ *Ibid.*, Chart 12, p. 4.

and should conduct market tests to determine the price which should be assessed for air mail and air parcel post to maximize profits. The air-transport industry is now sufficiently mature that the Post Office Department can cease to consider its payments for service upon the basis of a subsidy. The rates paid by the Post Office Department for services rendered by airlines should be determined upon a business basis, with the Post Office Department attempting to obtain air-transport service at the lowest price consistent with the maintenance of postal transport standards.

The adoption of this type of attitude toward postal air services presupposes an integrated conception of the Federal government, or that the profits made from the sale of air postal service are available to meet the expenditures of the Civil Aeronautics Administration. This is not the case at the present time, and it is most unlikely that it will be within the immediate future. The profits of one type of postal service go to pay the deficits of other types and if there is a total surplus, and only then, funds are made available to the treasury for general purposes.

The profits of the postal air services should be considered as of a different order from those arising from the sale of other postal services. The fact of this difference could become a visible reality if the Civil Aeronautics Administration would assess the Post Office Department each year for the amount of the profits made from the sale of postal air service, and apply these sums to expenditures made by the Civil Aeronautics Administration in making facilities available to the airlines. This sort of arrangement would necessarily include provision for consultation between the Civil Aeronautics Administration and the Post Office Department in the determination of the amounts to be paid the airlines for the transportation service, and the price to be charged by the Post Office Department for postal air services.⁸ It would require, also, some revision of the postal cost-accounting system to assure that it accurately represented the costs arising from the handling of air postal services.

⁸ "It was pointed out in behalf of the non-scheduled carriers last night that though mail operations as such on the scheduled lines return a profit to the Government and hence cannot be regarded as a subsidy, the Government is still paying most of the lines 45 cents a ton-mile for carrying mail, as against the low rates for freight now proposed.

"American Airline plans long-distance hauling of plane-load lots at 11 cents a ton-mile." (*New York Times*, June 12, 1946, L-25.)

POSTAL PROFITS AND TAXES

The cost of domestic air-transport service cannot be calculated by individual private companies since a large portion of the cost of air transport is borne by the Federal government. One way in which a large share of this government contribution to the industry can be paid without handicapping the development of the industry is for the Post Office Department to maximize the profits obtainable from the sale of air postal service. Certainly this would be operating government upon a "sound business basis," a method of operation advocated by many groups. Also, those persons interested in the elimination of arbitrary collections from business by government would favor the procedure. For any business could avoid paying a portion of the cost of the aid extended by the government to the air-transport industry by refusing to make use of air postal services. The government by obtaining revenues in this manner would not be levying indirectly a tax upon a necessity or an item needed by every individual to make life enjoyable. Rather the high price (higher than cost of providing the service excluding government's contribution) is placed upon a luxury item which could not by any stretching of the word "necessity" be considered within its meaning.

A tax of this sort, if it can be called a tax, meets most of the requisites of a desirable business tax. First, it will not bring about an uneconomical development of the industry. Second, the levy cannot be considered a burden upon the air-transport industry except to the extent that the amount of postal business is decreased by the high price charged for this service by the Post Office Department. (It is, however, possible that the profits might be maximized at what would be generally considered a low price.) This would, however, be true also of all other purchasers of air-transport services, and is the general situation in an economy where monopoly and monopolistic competition prevail. Third, the funds raised are available for the improvement of the operational efficiency of the industry directly affected by the collection. Fourth, the funds are not collected in such a manner that inefficiency is encouraged.

CHAPTER VIII

SOCIAL SECURITY TAXES

There is no better way to start the discussion of social security taxes than to quote briefly from a well-known study published by The Brookings Institution just prior to World War II.¹ This study was definitely aimed at the problem of adequacy of private investment opportunities. Within the immediate future this will again become a major problem.² Concerning the effects upon industry of the burden of social security taxes, Mr. James D. Magee, in this study says:

The burden of payroll taxes is unequally distributed. Measured in relation to earnings, the social security taxes affect various companies and industries quite differently. First, they apply both to those companies which have net earnings and those which have losses. Second, among those which have net earnings, the tax represents a varying burden since payrolls differ in importance from industry to industry. In the service industries, for example, the proportion of payrolls to the value of the product is much greater than is typically the case in manufacturing. Again, there is, in effect, discrimination against the smaller businesses for they are usually less adequately financed than the larger companies; the added burden may force them out of business. Immediately speaking, this results in instability and unemployment; in the long run, it promotes large-scale as against small enterprise.

The air-transport companies are not in an unusual position regarding the payment of social security taxes. All the weaknesses of the tax apparent in the manner in which it affects the typical business enterprise are also applicable to the tax in its effect upon the air-transport industry. The ratio of capital to number of employees in the air-transport industry is not of such a nature that the tax results in an unusually heavy burden or an unusually light burden.

¹ Magee, James D., *Taxation and Capital Investment* (The Brookings Institution, Washington, D. C., 1939), pp. 35 and 36.

² Experts in this field state that to maintain full employment, it will be necessary for private investment to approximate \$25 billion annually which is \$6 billion more than the greatest amount ever privately invested in one year. This peak of \$19 billion was reached in 1941 when the United States was re-tooling for war production.

In the past the fact that many employees of the airlines earned their compensation in a number of states resulted in double taxation. This difficulty arose from divergent state definitions regarding what constituted taxable situs. The difficulty no longer exists. Uniformity in the definition of taxable situs has been accomplished with respect to the levy of pay roll taxes. This uniformity was achieved rather quickly and with a minimum amount of bickering.³ The few border line cases which arise are cleared directly with the state administration concerned.⁴

CYCLICAL CONSIDERATIONS

Rather than attempting here a particularized discussion of the reforms which could be made in the old-age insurance and the unemployment compensation taxes that would have a beneficial effect upon the growth and the development of the air-transport industry, reference will be made only to the general effects of these taxes upon all types of developing business enterprises. The literature dealing with this problem is extensive and excellent. This study will limit itself to the presentation of generally accepted conclusions that have arisen as the result of the study which has been given to incidence and shifting of pay roll taxes, and the results which this shifting and incidence have upon business activity.

Unemployment taxes and unemployment payments, as at present managed, do not meet the needs of business. The principal shortcomings can be briefly stated as follows: As the result of the various unemployment experience bases for tax payment, which have been inaugurated by all but four states, the amount of tax collected per pay-roll dollar is apt to decrease during periods of prosperity and increase during periods of depression.⁵ If the

³ Unfortunately, the danger of double state taxation of income, property, and inheritance has not been as completely destroyed.

⁴ Cf. Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, p. 30.

⁵ Finally, the effects upon aggregate contributions are exactly contrary to good fiscal policy. Rates tend to fall when employment is high and to rise when employment declines. Whether these short-run changes are reflected in corresponding changes in prices or in profits, they tend to discourage outlays when employment is low and to encourage them when employment is high. These considerations point to the conclusion that experience rating should be abolished in unemployment compensation taxes. The reduction of risk associated with the financial incentive is so slight that it is outweighed by the unfavorable developments associated with such provisions. (Swan, Eliot J., "Economic Aspects of Social Security," *Postwar Economic Studies*, No. 6, Board of Governors of the Federal Reserve System, Washington, D. C., June, 1946, p. 58.

economy experiences a period of severe depression the system provides for the payment of benefits for too short a period and at too low a level. Moreover the amount of benefits and the period for which benefits are paid vary from state to state.

Business requirements necessitate that unemployment payments provide a minimum demand throughout the period of the depression.⁶ Business can, during periods of prosperity, readily make large contributions toward the building up of unemployment funds but during depression periods even a small payment may mean the difference between profit and loss; and therefore the determination of whether the business will be continued or abandoned.⁷ In addition, the building up of additional quantities of savings as the result of conscious tax policy is undesirable from the businessman's point-of-view. For the difficulty which forces him to dis-employ arises from the shortage of a demand for his goods or services, which shortage certainly arose partly as the result of over-saving. Finally, very few manufacturing and transportation, and for that matter, also trading establishments are engaged only in intrastate business transactions. Therefore, the mere fact that the particular state in which they operate has an adequate and effective unemployment insurance scheme, will not protect them from the undesirable repercussions which will arise if the plan in effect in neighboring states is ineffective.

All of these shortcomings of the present unemployment schemes point toward the need of centralization and the necessity of the payments being made by an agency which can spend the

⁶ "At the bottom of a depression, the government is nearly always forced, in spite of itself, to spend more than it collects in taxes and thus to raise the level of economic activity. But it is possible for a very stern and upright government, by adhering strictly to the principles of 'sound finance,' to carry its people all the way to destruction." (Lerner, Abba P., *The Economics of Control*. New York: Macmillan, 1944, p. 301.)

⁷ This type of analysis also corresponds to a large extent with the conclusions of those economists advocating the adjustment of taxes rather than the adjustment of expenditure as the preferred compensatory action. For example, "Likewise with social security schemes: these too should be considered with regard to the ideals of distributional justice; they should not be treated as a means of avoiding or of recovering from depressions. If, for instance, the government decides that a basic minimum standard of life must be and can be provided this decision will have a profound effect upon the total of government expenditure. In times of deflation, expenditures under such a scheme would have a desirable effect; in times of inflation, an undesirable effect, from the point of view of the stability of money income. They must, therefore, be justified on their own merits; otherwise, the whole system of distributional justice will be thrown into confusion by the constant adjustments necessary to keep money income stable." (Boulding, Kenneth E., *The Economics of Peace*. New York: Prentice-Hall, 1945, p. 163.)

receipts of the tax as they are received and can also have available sufficient funds to pay liberal unemployment benefits for an unlimited period of time during periods of business depression and also which can, at the same time that these unemployment benefits are being paid, decrease the amount of unemployment tax collections. The only agency that can enter into this type of compensatory program is the Federal government.⁸ This is the only type of unemployment program which would meet the needs of business.

This plan certainly does not envisage that the payments made by business would be less than the amounts paid out by the Federal government in unemployment benefits.⁹ Rather, the recommended program diverges from orthodoxy in the disassociation of the tax paid and the payment of benefits; it continues the concept that unemployment payments should not be greater than the collection from industry in unemployment taxes. It eliminates the idea that the same funds collected from business as unemployment taxes should be paid out to employees in unemployment benefits and substitutes for it, the concept that the amounts paid out for unemployment compensation should be equal to the amounts collected in unemployment taxes. However, this equality can only be determined upon a cyclical basis; because of the very nature of the period of the expenditure and the effects of attempting to collect taxes from business enterprise during different phases of the business cycle. Moreover, the government cannot accumulate funds during prosperity with the prospect of expenditure during the depression, for at the present stage of our capitalistic development, a principal difficulty and a prime cause of business depression is the excess of funds seeking investment opportunities.

COLLECTIONS

The collections which the states made from airlines for unemployment compensation during the past few years have been

⁸ Cf. Hansen, Alvin H. and Perloff, Harvey S., *State and Local Finance in the National Economy* (W. W. Norton & Co., New York, 1944), p. 162.

⁹ "The second great prejudice shows itself in the inability to see that taxation should never be imposed merely as a means of raising money for the government on the grounds that the government needs the money. The government can raise all the money it needs by printing it if the raising of the money is the only consideration." (Lerner, Abba P., *op. cit.*, p. 307.)

second in importance, following closely after the collections made from the motor-fuel taxes. The amounts collected in unemployment taxes are dependent upon the amount of employment. Thus they do not vary firm by firm depending upon relative profitability; however, the amount collected from the industry would be greater during prosperity than during depressed periods. This is true because both the aggregate wages and number employed would tend to be greater during the former than during the latter period, but the amount of tax paid per payroll dollar would be less during the prosperity period.

The social security taxes collected by the Federal government from domestic airlines have been less than the state unemployment collections but the trend indicates a relative increase in the importance of Federal collections. The establishment of rates based upon the amount of unemployment experienced by a firm or an industry have resulted during the war years in the reduction of the rates of state unemployment taxes, and therefore has resulted in a relative increase in old-age insurance and Federal unemployment collections.

Federal social security tax collections and state unemployment tax collections from all domestic air carriers since 1939 are shown in Table 31.

TABLE 31—FEDERAL, STATE, AND LOCAL SOCIAL SECURITY TAXES PAID BY DOMESTIC AIR CARRIERS OPERATING
IN CONTINENTAL UNITED STATES, 1939-1945

TYPE OF TAX AND GOVERNMENT UNIT	1939	1940	1941	1942	1943	1944	1945
Federal: Total	\$245,154	\$ 326,646	\$ 419,177	\$ 496,590	\$ 578,464	\$ 656,094	\$ 983,678
Old-age Insurance	176,456	250,602	321,928	378,157	439,092	498,018	746,676
Unemployment Compensation . . .	68,698	76,044	97,249	118,433	139,372	158,076	237,002
State:							
Unemployment Compensation . . .	587,897	720,725	790,242	664,920	682,156	773,701	1,160,006
Total: State and Federal	\$833,051	\$1,047,371	\$1,209,419	\$1,161,510	\$1,260,620	\$1,429,795	\$2,143,684

Source: 1939-1943—Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, p. 75; 1944 and 1945—calculated on the basis of total number of employees of domestic airlines (Appendix p. 180) as of December 1943, 1944, 1945 and factory average weekly earnings (National Industrial Conference Board—25 industries) as of December 1943, 1944 and 1945. *Survey of Current Business*, June, 1944, March 1945, and July 1946, pp. 5-13.

CHAPTER IX

FINDINGS AND RECOMMENDATIONS

Each individual reading a study will conclude certain things. These conclusions will be divergent to a degree depending upon the individual's attitude and training. There will, however, be general agreement upon a number of points. This brief summary presents in a highly condensed form the findings of this study upon which it is believed there will be a general agreement that they result from the analyses included within the study, and that they are of sufficient import that they should be considered in the determination of policy.

The air-transport industry is sufficiently different from the railroad industry, the trucking industry and the pipe lines and water carriers that it should not be assumed that methods of taxation developed and applied satisfactorily to these other types of transportation can also be successfully applied to the air-transport industry. Moreover, in the development of business taxes the individual peculiarities of business enterprises as taxpayers has not been sufficiently considered. The verity of this generalization is supported by the findings of this study and is the underlying philosophy of the recommendations.

BUSINESS TAXES: GENERAL

The first group of findings and recommendations which have developed from the study are those which relate to general business taxes as applied to any type of business and are not related in a specific sense to the air-transport industry.

FINDINGS:

1. Business taxes are frequently considered merely as convenient means available to various levels of government for the raising of needed funds.
2. Business taxes not only affect the payers as the result of the collec-

tion of the funds but they affect them also in the manner in which the collected funds are spent.

3. Businesses as such can benefit only by an increase in profits while individuals benefit from expenditures of tax funds in many different ways.

4. It is a generally accepted idea that all businesses should pay a "fair" portion of the general cost of government.

5. The present method of levying social security taxes and the method of paying benefits do not meet the needs of most businesses.

6. When tax collections and the expenditure of government funds become important factors in the determination of the way in which an industry will develop, the established industries and companies will make use of these relationships to insure the continuation of their present dominant positions.

7. The results of tardiness in legislative action are apt to favor the new enterprise over the old.

RECOMMENDATIONS:

1. The probable effects of the levy of particular taxes upon different types of business enterprise must be carefully determined and the taxes actually assessed should be decided upon in the light of good public policy in relation to the expected results.

2. Business taxes should be related as closely as possible to the benefits (increase in profits) which the business will enjoy from the expenditure of the funds collected.

3. If a government requires additional funds for general expenditure purposes every effort should be made to obtain these funds from personal taxes before additional business taxes are assessed.

4. Every effort should be made to decrease the tax burden and increase the aids to new and developing industries. In this respect the typical tardiness of legislative action has a desirable effect.

5. Subsidy payments should be constantly examined carefully to determine whether or not they are encouraging business activity in a manner most consistent with desirable public policy.

TAXATION OF THE AIR-TRANSPORT INDUSTRY: GENERAL

The second group of findings and recommendations which have developed from the study are those which relate to specific tax relationships of the air-transport industry.

FINDINGS:

1. The airlines have found it desirable to use retained profits as the source of funds for a large portion of their expansion.

2. The total tax bill of domestic airlines has become an increasingly

larger percentage of profits before income taxes but during recent years has become a smaller percentage of total depreciated assets.

3. The typical transportation taxes levied by the states and other units of local government favor the large and stable company over the small and often no-profit companies.

4. State gasoline taxes levied on the fuel used by the domestic airlines are less than those assessed upon fuel used by local flyers.

5. Domestic airlines with a major portion of their activities taking place in the South appear to bear a lower tax burden than those with activities located in other portions of the country.

RECOMMENDATIONS:

1. Taxes upon the profits of new and growing industries should be much lighter than the taxes assessed on the profits of stable and well-established industries. This could be accomplished by assessing corporate income taxes upon the basis of the ratio between profits and growth rather than upon the basis of annual net profits.

2. Greater use should be made of the property base in the taxation of airlines. The property base upon which local taxes would be assessed should be allocated on a national basis by the application of uniform formulae.

3. The states should tax very sparingly the raw materials used by an industry. The funds collected by such a business tax should be spent directly for the aid of the industry whose raw materials were taxed.

SPECIFIC AIR-TRANSPORT INDUSTRY TAXES

The third group of findings and recommendations which have developed from the study are those which relate to desirable ways of levying taxes upon the domestic airlines and the shortcomings of some taxes and tax procedures which are being applied to the industry.

FINDINGS:

1. The gasoline tax is not a desirable method of assessing domestic airlines for the use of airport facilities.

2. The gasoline tax is a rather accurate method of assessing domestic airlines for the use of airways.

3. The general property tax as it exists today has proven to be completely unsatisfactory when applied to the domestic airlines.

a. Air-transport property is very mobile and therefore very difficult to assign to any particular taxing jurisdiction.

b. The methods worked out for the allocation of railroad and other

types of transport property are not workable in the case of air-transport property.

c. Satisfactory methods have not been worked out for the assessment of property possessed by one level of government but located within the geographical bounds of another.

d. The courts are not suited to determine when the property of transportation companies is being uneconomically assessed and taxed.

4. The failure to adopt national legislation for the allocation of the various taxable bases of the domestic airlines will mean that all types of different formulae will be used by the state legislatures if and when they enact special legislation providing for the taxation of airlines.

RECOMMENDATIONS:

1. The allocation of the tax base of domestic airlines should not be determined by the period of time that a plane occupies air space over the territory, the weight of the load flown over the territory, or the value of the load flown over the territory.

2. The fees assessed upon airlines for the use of government-provided facilities should be sufficiently great to include an amount in addition to direct costs which would be the equivalent of the tax receipts that would have accrued if the property had been privately owned.

3. All the states should use uniform formulae for the allocation of the domestic airline tax bases. The total of the various taxable bases of the domestic airlines should be determined upon a national basis.

4. What constitutes a burden upon interstate commerce should be defined in Federal legislation.

5. The aviation gasoline tax should be a Federal tax.

AIR-TRANSPORT SUBSIDIES AND TAXES

The fourth group of findings and recommendations which have developed from the study are those which relate to general relationships between domestic airline taxes and subsidies.

FINDINGS:

1. The costs of providing airways cannot be recovered by the Federal government by assessment of users upon the basis of the costs involved in providing the service utilized.

2. The payment of subsidies through the granting of mail contracts is undesirable. This indirect method of paying subsidies reduces government control over the manner in which funds granted will be spent.

3. Subsidized industries such as the domestic airlines possess no ability

to bear taxes, the receipts from which will be used for *general* public expenditures.

RECOMMENDATIONS: •

1. The allocation of the costs of constructing and maintaining Federal airways must be accomplished partly on the basis of assessing what the traffic will bear and partly on the basis of the costs of providing the different types of services demanded by the various users.

2. Airports are best financed if the commercial possibilities are as nearly as possible completely utilized and the various users of the facilities assessed an amount that is based upon the cost incurred in caring for a particular user. The assessments should be made by the levy of rents and fees. However, the joint-cost situation existing and the necessity of obtaining adequate funds necessitate that rents and fees be partially determined by the old doctrine of assessing what the traffic will bear.

3. Air-mail contracts with domestic airlines should be negotiated at the lowest possible figure.

4. The Post Office Department should follow a conscious policy of pricing air-mail service in a manner which would tend to maximize net return. These profits should be made available to the Civil Aeronautics Administration.

5. Taxes paid by a subsidized industry should be made available to the government agency providing the subsidy rather than becoming a part of the general revenue.

APPENDIX A

TAX DATA

TABLE 1 — FEDERAL, STATE, AND LOCAL TAXES PAID BY DOMESTIC AIR CARRIERS OPERATING IN THE CONTINENTAL UNITED STATES, 1939-1943

TYPE OF TAX	1939	1940	1941	1942	1943
TOTAL: FEDERAL, STATE AND LOCAL					
Property	\$ 158,741	\$ 167,077	\$ 196,246	\$ 221,050	\$ 216,337
Social-security	833,051	1,047,371	1,209,419	1,161,510	1,260,620
Income	838,198	1,506,168	2,642,776	11,079,580	14,552,357
Motor-fuel	906,628	1,465,584	2,011,817	1,767,516	1,772,687
Lubricating-oil	29,494	46,586	54,267	44,122	57,324
Capital-stock	97,304	150,599	302,778	326,042	586,894
Gross receipts	2,693	8,235	14,947	13,492	10,917
Aircraft licenses	935	1,005	1,182	839	565
All other taxes	9,395	25,372	31,802	23,558	27,738
Total: Federal, State and Local	\$2,876,439	\$4,417,997	\$6,465,234	\$14,637,709	\$18,485,439
FEDERAL					
Social-security: Total	\$ 245,154	\$ 326,646	\$ 419,177	\$ 496,590	\$ 578,464
Old-age insurance	176,456	250,602	321,928	378,157	439,092
Unemployment compensation .	68,698	76,044	97,249	118,433	139,372
Income taxes: Total	807,161	1,456,119	2,590,715	10,889,436	14,349,127
Normal-income tax and surtax.	781,705	1,446,897	2,588,569	10,152,137	10,156,652
Excess-profits ...	....	....	....	....	3,586,470
Declared value excess-profits .	25,456	9,222	2,146	737,299	606,005
Motor-fuel	474,010	832,950	1,208,922	1,016,845	999,607
Lubricating-oil ...	29,163	46,229	53,981	43,777	56,779
Capital-stock	78,061	119,230	266,802	290,140	544,875
All other .....	....	....	....	8	459
Total: Federal...	\$1,633,549	\$2,781,174	\$4,539,597	\$12,736,796	\$16,529,311
STATE AND LOCAL					
Property: Total ...	\$ 158,741	\$ 167,077	\$ 196,246	\$ 221,050	\$ 216,337
State assessed ...	44,453	44,585	55,636	65,967	68,050
Locally assessed..	114,288	122,492	140,610	155,083	148,287
Unemployment compensation ...	587,897	720,725	790,242	664,920	682,156
Normal-income taxes and surtaxes....	31,037	50,049	52,061	190,144	203,230
Motor-fuel	432,618	632,634	802,895	750,671	773,080
Lubricating-oil ...	331	357	286	345	545
Capital-stock	19,243	31,369	35,976	35,902	42,019
Gross receipts	2,693	8,235	14,947	13,492	10,917
Aircraft licenses	935	1,005	1,182	839	565
All other	9,395	25,372	31,802	23,550	27,279
Total: State and Local	\$1,242,890	\$1,636,823	\$1,925,637	\$ 1,900,913	\$ 1,956,128

Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. 141 (1945), Table I, p. 75.

TABLE 2—STATE AND LOCAL PROPERTY TAXES PAID BY DOMESTIC AIR CARRIERS OPERATING IN CONTINENTAL UNITED STATES, BY STATES, 1939-1943

STATE	1939	1940	1941	1942	1943
Alabama	\$ 22	\$ 22	\$ 33	\$ 48	\$ 49
Arizona	1,371	1,373	1,176	903	757
Arkansas	28	20	39	38	44
California	31,033	29,599	21,809	34,949	35,973
Colorado	5,129	5,070	6,923	8,900	9,049
District of Columbia	50	48	54	110	126
Florida	4,265	4,671	5,945	2,932	3,393
Georgia	197	2,232	3,422	4,001	3,040
Idaho	52	56	83	108	183
Illinois	24,569	26,977	32,512	40,617	45,409
Indiana	37	37	73	100	81
Iowa	1,014	1,000	1,149	1,089	1,133
Kansas	34	87	986	261	131
Kentucky	1,196	2,885	4,092	7,299	5,463
Louisiana	1,257	997	2,448	703	567
Maine	16	16	17	17	11
Maryland		11	10	46	74
Massachusetts	309	403	473	515	691
Michigan	790	2,050	2,645	2,533	2,066
Minnesota	31,749	37,263	46,442	40,376	30,280
Mississippi	34	53	76	80	92
Missouri	2,371	2,842	3,427	2,868	2,761
Montana	1,279	958	1,635	988	958
Nebraska	1,999	1,435	2,485	1,830	2,027
Nevada	5,017	5,247	5,835	7,167	6,736
New Jersey				2,059	164
New Mexico	324	115	75	72	70
New York	478	340	310	56	
North Carolina		3	5	37	29
North Dakota	2,049	3,108	3,997	3,611	4,425
Ohio	4,058	4,107	4,349	4,352	3,935
Oklahoma	976	782	1,354	805	805
Oregon	5,236	3,345	4,943	8,624	7,927
Pennsylvania	371	369	378	369	318
Rhode Island	7	8	8	8	8
South Dakota	213	335	325	186	182
Tennessee	540	72	130	251	1,011
Texas	2,458	1,422	1,820	2,667	2,610
Utah	7,419	7,419	8,968	10,718	11,926
Virginia	313	321	572	121	186
Washington	7,253	7,331	9,185	9,681	10,796
West Virginia	93	92	265	443	578
Wisconsin					8
Wyoming	13,135	12,556	15,773	18,512	20,265
Total	\$158,741	\$167,077	\$196,246	\$221,050	\$216,337

Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. 141 (1945), Table II, p. 76.

TABLE 3—STATE NET INCOME TAXES PAID BY DOMESTIC AIR CARRIERS
OPERATING IN CONTINENTAL UNITED STATES, BY STATES, 1939-1943

STATE	1939	1940	1941	1942	1943
Alabama	\$ 615	\$ 1,323	\$ 762	\$ 4,455	\$ 4,759
Arizona	194	148	424	424	1,104
California	8,907	10,529	12,460	68,789	59,150
Colorado	278	534	3	899	6,097
District of Columbia	25	25	....	....	....
Georgia	7,304	12,101	13,920	36,321	32,315
Idaho	40	445	....	....	....
Iowa	934	595	425	3,964	5,761
Kansas	43	82	....	366	927
Kentucky	584	949	1,664	2,985	1,388
Louisiana	3,331	3,535	1,995	16,636	19,147
Massachusetts	1,409	1,685	2,916	3,393	3,356
Minnesota .....	....	5,423	5,571	10,209	25,905
Mississippi	1,365	697	....	6,221	5,646
Missouri	518	512	376	3,145	1,027
Montana	264	1,545	1,445	3,138	3,406
New Mexico	276	428	310	1,541	5,793
North Carolina .....	....	1	5	37	....
North Dakota .....	....	276	716	523	519
Oklahoma	684	813	1,284	3,831	3,359
Oregon	10	164	248	388	22
Pennsylvania	745	1,390	1,842	10,094	6,467
South Carolina	158	372	....	1,528	1,796
South Dakota .....	....	103	....	4	70
Tennessee	613	1,758	246	1,981	1,330
Utah	306	151	263	104	81
Virginia	2,434	4,162	4,558	7,389	12,835
Wisconsin .....	....	303	628	1,779	970
Total	\$31,037	\$50,049	\$52,061	\$190,144	\$203,230

Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. No. 141 (1945), Table IV, p. 77.

TABLE 4—STATE MOTOR-FUEL AND LUBRICATING-OIL TAXES PAID BY DOMESTIC AIR CARRIERS OPERATING IN CONTINENTAL UNITED STATES, BY STATES, 1939-1943^(a)

STATE	1939	1940	1941	1942	1943
MOTOR-FUEL TAXES					
Alabama	\$ 12,448	\$ 16,746	\$ 28,158	\$ 21,283	\$ 19,656
Arizona	111	7	190	594	821
California					3,970
Georgia	73,139	106,514	152,805	112,436	91,796
Idaho	2,730	5,619	11,298	11,149	10,909
Illinois	88	123	149	139	190
Iowa		35	63	197	802
Kentucky	11,863	18,994	20,616	5,604	
Louisiana ^(b)	9,257	15,988	32,908	37,561	47,903
Maine	973	1,716	2,796	6,809	13,676
Massachusetts				317	396
Michigan	12,496	19,283	30,026	19,994	16,856
Minnesota	233	225	228	1,022	416
Mississippi	2,611	4,529	5,614	6,269	6,496
Missouri ^(b)		14	23	22	
Montana	45	73	195	146	319
Nebraska	48,725	73,604	79,977	81,191	107,885
New Hampshire ..		8		81	
New Jersey	442				
New York	211	1,633	362	544	504
North Dakota					95
Ohio	27,904	41,635	51,153	40,841	36,291
Oklahoma	108	134	1,090	2,879	3,328
Oregon	8,704	12,262	13,634	14,264	11,243
Pennsylvania	26,315	41,057	45,942	39,728	39,932
Rhode Island		43	71	22	
South Carolina	15,317	22,673	17,180	32,901	39,305
South Dakota	6,997	8,558	4,863	6,248	4,188
Tennessee	85,787	121,730	174,799	181,056	197,715
Texas	268	410	519	501	364
Utah	47,446	60,591	56,146	58,404	50,822
Vermont	619	1,798	1,891	497	1,236
Virginia	6,397	24,908	34,465	40,234	35,502
Washington		90	159	229	151
Wyoming	31,384	31,634	35,575	27,509	30,313
Total	\$432,618	\$632,634	\$802,895	\$750,671	\$773,080
LUBRICATING-OIL TAXES					
Alabama .....	....	....	\$ 15	\$ 27	\$ 43
Louisiana	\$ 331	\$ 357	271	318	502
Total	\$ 331	\$ 357	\$ 286	\$ 345	\$ 545

^(a) The major portion of fuel-tax payments in this table is based on aviation fuel purchased or withdrawn from storage in States where such fuel is fully or partially taxable. A minor portion of the total is paid on fuel used in motorized ground vehicles. For the States which refund on aviation fuel this item comprises the entire payment shown. Owing to varying interpretations of the questionnaire instructions and accounting difficulties, fuel taxes on consumption for motorized vehicles have not been uniformly treated. The amount involved, however, is relatively small.

^(b) Gasoline inspection fees reported paid in Louisiana, Missouri, and North Carolina have been excluded from the above table and included in "All Other Taxes" table. Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. No. 141 (1945), Table V, p. 78.

TABLE 5—STATE CAPITAL-STOCK TAXES PAID BY DOMESTIC AIR CARRIERS
OPERATING IN CONTINENTAL UNITED STATES, BY STATES, 1939-1943

STATE	1939	1940	1941	1942	1943
Alabama	\$ 18	\$ 32	\$ 63	\$ 53	\$ 53
Colorado	16	19	23	31	58
Delaware	7,990	10,306	12,046	13,974	15,731
Florida	300	300	300	300	275
Georgia		171	75	200	200
Idaho	75	75	75	75	90
Kansas		25	25	50	100
Massachusetts	833	1,698	3,048	3,794	5,318
Illinois	4,329	1,524	1,985	2,749	3,071
Louisiana	526	670	2,241	2,288	3,114
Michigan	203	141	125	212	235
Mississippi	78	661	154	219	198
Missouri	889	682	1,246	1,170	1,097
New Jersey	181	206	89	75	50
New Mexico	1	3	5	5	8
New York	1,843	10,035	8,830	5,112	5,644
North Carolina ...		15	10	17	10
Ohio	162	233	275	311	229
Oklahoma	20	28	23	31	31
Pennsylvania	479	2,585	2,965	2,861	3,813
Rhode Island				167	113
South Carolina ...	230	20	23	32	42
Tennessee	408	561	550	647	850
Texas	375	1,096	1,384	1,106	1,271
Vermont	40	40	25	35	35
Virginia	25	25	25	25	25
Washington	62	58	56	53	48
West Virginia	160	160	310	310	310
Total	\$19,243	\$31,369	\$35,976	\$35,902	\$42,019

Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. 141 (1945), Table VI, p. 80.

TABLE 6—RATIO OF OPERATING TAXES TO NET OPERATING INCOME, BY TYPE OF TAX, ALL MAJOR CARRIER GROUPS, 1938-1940

TYPE OF TAX AND YEAR	OPERATING TAXES AS PER CENTS OF NET OPERATING INCOME					
	Rail- roads	Truck Lines	Bus Lines	Water Carriers	Air Lines	Pipe Lines
Highway-user taxes: ^(a)						
1938	0.02	(b)	(b)	0.03	(c)	0.04
1939	.01	107.02	46.83	.01	(d)	.05
1940	.01	133.91	62.01	.02	(d)	.07
Other motor-fuel and oil taxes:						
1938	.10	(b)	(b)	.06	(e)	(e)
1939	.06	15.90	6.45	.03	25.90	.01
1940	.02	22.98	9.67	.02	33.20	.01
Old age insurance taxes:						
1938	12.16	(b)	(b)	3.36	(e)	.46
1939	8.29	8.57	2.22	2.13	6.38	.52
1940	8.26	10.57	3.14	2.93	4.93	.55
Unemployment compensation taxes:						
1938	13.46	(b)	(b)	11.01	(e)	1.48
1939	9.19	26.54	6.95	5.25	19.13	1.57
1940	8.26	30.58	9.41	3.80	19.15	1.64
Property taxes: ^(f)						
1938	52.96	(b)	(b)	7.07	(e)	6.06
1939	33.51	10.41	5.62	3.25	4.80	8.05
1940	29.18	10.88	7.27	2.11	4.38	8.41
Business taxes: ^(g)						
1938	10.78	(b)	(b)	37.85	(e)	32.02
1939	9.39	24.50	31.67	28.25	28.70	33.33
1940	12.45	38.64	46.13	46.56	38.70	49.63
Total taxes:						
1938	89.48	(b)	(b)	59.38	(e)	40.66
1939	60.45	192.94	99.44	38.92	84.97	43.53
1940	58.18	247.56	137.63	55.44	100.36	60.31

^(a) Includes States and local motor-fuel, vehicle-registration, and motor-carrier license taxes and fees, less the estimated general property-tax component of \$500,000 for the truck lines and \$200,000 for the bus lines and the estimated general sales-tax component of \$200,000 for the truck lines and \$100,000 for the bus lines.

^(b) Not available.

^(c) An aggregate net deficit was incurred in this year.

^(d) Not separately reported. Any amounts paid are included among business taxes.

^(e) Less than 0.005 per cent. Small amounts of motor-fuel taxes reported by these carriers were assumed to have been paid wholly on nonhighway use of fuels.

^(f) Includes gross-earnings and tonnage taxes which are in lieu of ad valorem property taxes and estimated property-tax components of State motor-fuel and vehicle-license taxes.

^(g) Defined for purposes of this table as all taxes not separately identified in any one of the other 5 classifications.

Source: Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, H.D. No. 160, Table 107, p. 390.

TABLE 7—RATIO OF NON-HIGHWAY USER TAXES TO OPERATING REVENUES,
1938-1940

CARRIER GROUP	1938	1939	1940
	<i>Per Cent</i>	<i>Per Cent</i>	<i>Per Cent</i>
Truck lines.....	(a)	85.92	113.65
Air lines.....	(b)	84.97	100.36
Bus lines.....	(a)	52.61	75.62
Pipe lines.....	40.62	43.48	60.24
Railroads.....	89.46	60.45	58.17
Water carriers.....	59.35	38.91	55.42

(a) Not available.

(b) An aggregate net deficit was incurred in this year.

Source: Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, H.D. No. 160, p. 391.

TABLE 8—COMPARISON OF MODEL AND ACTUAL SYSTEM YIELDS FOR THE SEVERAL CARRIER GROUPS UNDER ALTERNATIVE CONCEPTIONS OF "MODEL" PROPERTY AND USER TAXES, 1940
(In Thousands of Dollars)

CARRIER GROUP	PROPERTY TAX		OLD AGE INSURANCE TAX		USER TAXES		BUSINESS TAXES		ALL TAXES		Ratio of Column 10 to Column 11
	Actual Yield ^a	Model Tax System Yield	Actual Yield	Model Tax System Yield	Actual Yield ^b	Model Tax System Yield	Actual Yield ^c	Model Tax System Yield	Actual Yield	Model Tax System Yield	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
Railroads . . .	\$213,618	\$213,164	\$60,505	\$60,505	\$ 91	\$ 128	\$151,715	\$148,167	\$425,929	\$421,964	1.01
Truck lines . . .	1,113	450	1,100	1,100	13,941	18,578	9,595	6,414	25,769	26,542	.97
Bus lines	857	396	370	370	7,312	6,694	7,690	2,771	16,229	10,231	1.59
Water carriers	808	2,088	1,126	1,126	38	40,000	19,299	6,790	21,271	50,004	.43
Air lines	181	180	264	264	300	6,576	3,406	1,604	4,151	8,624	.48
Pipe lines	4,868	2,889	321	321	42	59	29,695	6,118	34,926	9,387	3.72

(^a) Includes gross-earnings taxes and tonnage taxes which are in lieu of ad valorem property taxes and estimated property-tax components of State motor-fuel and vehicle-license taxes.

(^b) Includes State and local motor-fuel, vehicle-license, and motor-carrier taxes and fees, less estimated general-property- and sales-tax components, for truck and bus lines; vehicle license and motor-carrier taxes for railroads and pipe lines; motor-vehicle and motor-carrier taxes and Federal tonnage taxes for water carriers; and gasoline taxes earmarked for State aeronautics funds for air lines.

(^c) Includes unemployment-compensation taxes, general sales-tax components of the fuel taxes of truck and bus lines, and all other taxes not included in columns 2, 4, and 6.

Source: Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, H.D. No. 160, Table 104-A, p. 377.

TABLE 9—ESTIMATED CHANGES IN TAX PAYMENTS RESULTING FROM SUBSTITUTION OF STANDARD TAX SYSTEM FOR EXISTING TAX SYSTEMS, BY TYPE OF TAX AND CARRIER GROUP, 1940
(In Thousands of Dollars)

CARRIER GROUP	Property Taxes ^a	Gross Earnings Tax	Capital Stock Tax	Old Age Insurance Tax	Unemployment Compensation Taxes	Motor-Fuel Taxes ^b	Net Income and Excess Profits Taxes	All Other Taxes	Net Change	Ratio of Total Actual to Total Standard Taxes
Railroads	-\$4,618	+\$2,920	+\$1,117	-\$39,714	+\$1,921	+\$ 11	+\$1,597	-\$2,086	-\$38,852	1.10
Truck lines . . .	+ 501	+ 288	— 34	+ 22	+ 183	— 113	— 9	— 311	+ 527	.98
Bus lines	+ 1,993	+ 23	— 29	— 21	— 63	— 80	— 423	— 284	+ 1,116	.94
Water carriers . .	+ 3,600	+ 648	+ 131	+ 68	+ 2,125	— 1	— 2,831	— 198	+ 3,542	.86
Air Carriers . . .	+ 389	+ 135	+ 6	+ 44	+ 132	— 514	+ 144	— 52	+ 284	.94
Pipe lines	+ 7,292	— 6,613	— 57	+ 7	+ 33	+ 52	— 2,429	— 119	— 1,834	1.06

^a Based on standard yield, preferred appraisal.

^b The motor-fuel tax changes for rail, water, and pipe-line carriers were estimated by assuming that their standard motor-fuel tax would bear the same proportion to their vehicle taxes as in the case of the truck lines. The increases in railroad and pipe-line taxes shown in this column result from the failure of these carrier groups to report all of their fuel taxes, and the decrease for water carriers is less than it should be for the same reason.

Source: Board of Investigation and Research, 79th Congress, First Session, *Carrier Taxation*, H.D. No. 160, Table 102, p. 367.

TABLE 10—TAX ACCRUALS OF SCHEDULED DOMESTIC AIR CARRIERS, BY TYPE OF TAX, 1938-1941*

TYPE OF TAX	AMOUNT (In Thousands of Dollars)					PER CENT OF TOTAL			
	1938	1939	1940	1941		1938	1939	1940	1941
Ad valorem property	\$ 102	\$ 156	\$ 181	191		5.9	5.6	4.4	3.1
Net income and excess profits	213	833	1,371	2,642		12.4	30.2	33.0	42.6
Capital stock and gross earnings	52	99	166	228		3.0	3.6	4.0	3.7
Pay roll	670	828	1,056	1,226		39.0	30.0	25.4	19.8
Motor fuel and oil	680	841	1,373	1,900		39.6	30.5	33.1	30.7
Miscellaneous	2	2	4	5		.1	.1	.1	.1
Total	\$1,719	\$2,759	\$4,151	\$6,192		100.0	100.0	100.0	100.0

* Eight companies, all but one of which is relatively small, reported to the Bureau of Internal Revenue for fiscal years rather than calendar years, but their taxes were estimated for calendar years by reference to their reports to the Civil Aeronautics Board.

Sources: Compiled and partially estimated from reports of individual carriers to the Civil Aeronautics Board and the Bureau of Internal Revenue. Taken from *Carrier Taxation*, Board of Investigation and Research, 79th Congress, First Session, H.D. No. 160, Table 82, p. 314.

TABLE II—RATIOS OF TAXES TO SELECTED MEASURES OF TAXABLE CAPACITY
ALL SCHEDULED DOMESTIC AIR LINES, 1938-1940

MEASURES OF TAXABLE CAPACITY	TAXES AS A PER CENT OF MEASURES OF TAXABLE CAPACITY				
	1938	1939	1940	1941	1938 through 1941
Total operating revenues.....	<i>Per Cent</i> 4.1	<i>Per Cent</i> 5.0	<i>Per Cent</i> 5.5	<i>Per Cent</i> 6.7	<i>Per Cent</i> 5.6
Contributions to national income ^a	10.1 (b)	10.4	10.6	12.8	11.3
Net operating income ^a	(b)	45.9	50.1	59.4	60.0
Net corporate income ^a	(b)	51.5	45.5	63.8	62.9

^(a) Before deduction of any taxes.

^(b) A net loss was incurred by the industry in this year.

Source: Taxes from Table 82, *Carrier Taxation*; denominators compiled for calendar years from monthly and fiscal-year reports of individual carriers to the Civil Aeronautics Board. Taken from *Carrier Taxation*, Board of Investigation and Research, 79th Congress, First Session, House Document No. 160, Table 87, p. 329.

APPENDIX B REVENUE AND EXPENSE DATA

TABLE 1—SELECTED INCOME AND EXPENSE ITEMS; DOMESTIC AIR CARRIERS,
1939-1943^a
(In Thousands of Dollars)

REVENUE AND EXPENSE ITEMS	1939	1940	1941	1942	1943
Operating revenue: Total.....	\$55,527	\$76,209	\$96,439	\$106,750	\$121,756
Passenger	34,485	52,723	68,997	73,650	86,045
Mail	18,437	20,045	22,652	23,390	24,679
Express and Freight	1,605	2,060	2,893	6,755	8,026
Excess baggage.....	344	548	760	1,256	1,713
All other.....	656	833	1,136	1,699	1,293
Operating expenses: Total ^b	\$50,940	\$70,300	\$89,142	\$ 83,519	\$ 94,164
Aircraft operating expenses:					
Total	\$26,022	\$34,846	\$44,469	\$ 35,955	\$ 33,926
Pay roll, pilots and co-pilots	6,795	9,130	11,092	9,494	8,752
Fuel and oil					
(including taxes).....	6,140	8,756	11,321	9,602	9,353
Flight equipment					
maintenance, direct ^c ...	5,587	7,401	9,661	8,540	8,918
Flight equipment					
depreciation	4,752	5,534	7,709	5,756	4,614
Ground and indirect expenses:					
Total	\$24,513	\$34,494	\$44,673	\$ 47,563	\$ 60,238
Ground operations, pay roll.	6,213	8,897	11,761	11,058	14,713
Ground equipment					
maintenance direct ^c	586	830	982	1,019	1,451
Equipment Maintenance,					
indirect ^c	2,018	2,767	4,064	4,305	5,447
Depreciation, ground					
equipment	915	946	1,289	1,236	1,386
Passenger service:					
Pay roll.....	674	1,098	1,432	1,329	1,609
Supplies	1,170	2,357	3,029	2,211	2,356
Traffic and sales pay roll...	1,989	2,823	3,574	4,804	5,483
Advertising and publicity...	2,189	3,205	3,113	3,179	4,445
General and administrative:					
Pay roll.....	1,288	1,657	2,184	2,656	3,744
Legal	358	425	439	397	522
General taxes	1,056	1,401	1,660	1,576	1,922
Net operating income (before					
income taxes).....	4,587	5,909	7,297	23,232	27,592
Adjusted net operating income ^d	4,150	5,089	4,903	15,296	15,363

^a Does not include Catalina Air Transport and Hawaiian Airlines, Ltd.

^b Includes the total operating expenses for Colonial Airlines for 1939 and 1940 for which the distribution by type of expense was not available.

^c Includes maintenance pay roll.

^d After income taxes allocated to commercial operations. Includes nonoperating income excepting profits on contract operations and on involuntary sale of equipment to the Federal Government.

Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. No. 141 (1945), Table XI, p. 82.

TABLE 2—APPORTIONMENT OF AIR CARRIER PROPERTY AND NET INCOME TO THE SEVERAL STATES ACCORDING TO SELECTED ALLOCATION FORMULAS
(Based on reports from 13 air carriers)

STATE	PROPERTY, CAPITAL STOCK, AND GROSS RECEIPTS		NET INCOME	
	Tonnage (1), 40 per cent; revenue (2), 40 per cent; arrivals and departures (3), 20 per cent A	Tonnage (1), 33 1/3 per cent; revenue (2), 33 1/3 per cent; ton-miles (5), 33 1/3 per cent B	Tonnage (1), 40 per cent; revenue (2), 40 per cent; arrivals and departures (3), 20 per cent C	Tonnage (1), 40 per cent; revenue (2), 40 per cent; pay rolls (4), 20 per cent D
	<i>Per Cent</i>	<i>Per Cent</i>	<i>Per Cent</i>	<i>Per Cent</i>
Alabama	0.60	0.75	0.69	0.58
Arizona	1.38	1.97	1.48	.86
Arkansas	.17	.59	.18	.13
California	16.13	15.02	14.12	14.15
Colorado	.80	.79	.87	.82
Connecticut ..	.41	.64	.50	.32
Delaware .....	....	.06	....	....
District of Columbia and Virginia	6.26	5.98	6.43	6.09
Florida	3.68	3.47	5.21	6.22
Georgia	1.90	1.94	2.64	2.75
Idaho	.31	.38	.21	.13
Illinois	7.85	7.00	8.33	9.05
Indiana	1.06	1.67	1.29	.91
Iowa	.43	.89	.29	.15
Kansas	.53	.81	.38	.26
Kentucky ..	.52	.60	.78	.67
Louisiana	1.24	1.12	1.38	1.24
Maine	.57	.62	.03	.02
Maryland	.46	.70	.57	.37
Massachusetts	2.60	2.21	2.66	2.53
Michigan	2.74	2.34	2.24	2.04
Minnesota	1.36	1.38	.95	1.33
Mississippi	.33	.48	.26	.17
Missouri	3.49	3.26	2.47	3.03
Montana	1.04	.96	.56	.41
Nebraska	1.05	1.20	.98	.64
Nevada	.66	.83	.42	.20
New Hampshire ..	.04	.07	.02	.01
New Jersey .....	....	.44	....	.04
New Mexico	.40	1.03	.25	.14
New York	11.04	8.79	13.25	17.47
North Carolina ..	.45	.50	.75	.49
North Dakota ..	.26	.29	.24	.14
Ohio	5.09	4.65	4.51	3.78
Oklahoma	.73	.98	.75	.57
Oregon	1.27	1.07	1.41	1.11
Pennsylvania	2.62	3.54	1.74	1.60
Rhode Island	.35	.20	.43	.29
South Carolina ..	.43	.57	.60	.44
South Dakota ..	.18	.21	.01	.01
Tennessee	3.17	2.97	3.70	3.04
Texas	8.70	8.53	9.80	8.92
Utah	2.39	2.54	1.42	1.38
Vermont	.09	.07	.01	.01

TABLE 2—(Continued)

STATE	PROPERTY, CAPITAL STOCK, AND GROSS RECEIPTS		NET INCOME	
	Tonnage (1), 40 per cent; revenue (2), 40 per cent; arrivals and departures (3), 20 per cent A	Tonnage (1), 33 ⅓ per cent; revenue (2), 33 ⅓ per cent; ton-miles (5), 33 ⅓ per cent B	Tonnage (1), 40 per cent; revenue (2), 40 per cent; arrivals and departures (3), 20 per cent C	Tonnage (1), 40 per cent; revenue (2), 40 per cent; pay rolls (4), 20 per cent D
	<i>Per Cent</i>	<i>Per Cent</i>	<i>Per Cent</i>	<i>Per Cent</i>
Washington	2.47	2.16	2.54	2.41
West Virginia . . .	.13	.35	.10	.06
Wisconsin	.29	.42	.24	.19
Wyoming	.45	.82	.50	1.01
Subtotal	98.12	97.86	98.19	98.18
Canada	.60	.74	.37	.26
Mexico	.69	.60	.84	.86
Not allocated	.59	.80	.60	.70
Total	100.00	100.00	100.00	100.00

Source: Civil Aeronautics Board, *Multiple Taxation of Air Commerce*, 79th Congress, First Session, H.D. 141 (1945), Table XIV, p. 85.

TABLE 3—REVENUES OF DOMESTIC AIR CARRIERS,^a BY SOURCES OF REVENUES, AND PERCENTAGE DISTRIBUTION BY SOURCE OF REVENUE, 1938-1945

Calendar Year	Total Revenue	Passenger	Mail	Express	Excess Baggage	Other
	AMOUNT OF REVENUE (In Dollars)					
1938	\$42,297,310	\$24,335,549	\$15,797,988	\$1,261,261	\$ 279,460	\$ 623,052
1939	55,172,742	34,344,388	18,263,077	1,604,059	342,332	618,886
1940	75,709,214	52,516,249	19,833,010	2,060,562	546,665	752,728
1941	95,814,486	68,669,885	22,436,775	2,890,916	758,163	1,058,747
1942	106,110,733	73,231,546	23,202,761	6,747,719	1,250,683	1,678,024
1943	120,490,242	85,416,740	24,071,281	8,010,192	1,699,528	1,292,500
1944	157,888,221	114,061,655	33,171,940	7,879,724	1,959,706	815,196
1945 estimated	233,000,000	176,000,000	41,000,000	13,000,000	2,000,000	1,000,000
	PERCENTAGE DISTRIBUTION					
1938	100.0	57.6	37.3	3.0	0.7	1.4
1939	100.0	62.3	33.1	2.9	0.6	1.1
1940	100.0	69.4	26.2	2.7	0.7	1.0
1941	100.0	71.7	23.4	3.0	0.8	1.1
1942	100.0	68.7	22.1	6.4	1.2	1.6
1943	100.0	70.9	20.0	6.6	1.4	1.1
1944	100.0	72.3	21.0	5.0	1.2	0.5
1945 estimated	100.0	75.5	17.6	5.6	0.9	0.4

^a Excludes Colonial and Hawaiian Airlines' revenues except for Hawaiian mail revenues.
Source: Civil Aeronautics Board, *1938-42 Annual Airline Statistics*, taken from Civil Aeronautics Administration, *Statistical Handbook of Civil Aviation*, December, 1945, p. 33.

TABLE 4—DOMESTIC AIR CARRIER OPERATIONS: TON-MILES OPERATED, BY TYPE OF TRAFFIC, 1938-1945

Calendar Year	Total	Mail	Express and excess baggage	Passenger ^a
1938.....	65,865,427	7,422,860	2,670,640	55,771,927
1939.....	86,867,448	8,584,891	3,303,847	74,978,710
1940.....	129,205,285	10,035,638	4,425,152	114,744,495
1941.....	168,718,934	12,900,405	6,645,062	149,173,467
1942.....	183,188,019	21,066,627	13,923,759	148,197,633
1943.....	218,461,606	35,927,042	18,274,900	164,259,664
1944.....	298,528,700	50,921,792	21,178,663	226,428,245
1945 estimated....	467,700,000	75,200,000	32,500,000	360,000,000

^a Passenger miles are converted to ton-miles on the basis of 200 lb. per passenger (including baggage).

Source: Civil Aeronautics Board, 1938-42 *Annual Airline Statistics* and Monthly Recurrent Reports. Mail ton-miles from Post Office records. Taken from *Statistical Handbook of Civil Aviation*, Civil Aeronautics Administration, December, 1945, p. 39.

TABLE 5—ESTIMATED RETURNS ON INVESTMENT, FIVE DOMESTIC AIR LINES,¹ 1941

Carrier	Ratio of allocated net income from mail to investment allocated to mail	Ratio of total net operating income to total capital investment in scheduled operations
	<i>Per Cent</i>	<i>Per Cent</i>
Pennsylvania-Central	40.53	33.32
Eastern	69.60	48.41
Transcontinental and Western	85.23	46.16
United	90.97	63.94
American	107.00	59.76

¹ Computed on the basis of a mail rate of 0.3 mill per pound-mile. These calculations are from data given in the respective decisions of the Civil Aeronautics Board fixing the rate of 0.3 mill per pound-mile for these carriers. Revenues and expenses are those estimated by the Board for each carrier on an annual basis following the effective dates of the decisions. The investment bases used for computing the rates of return are those approved by the Board at the time the service rate was prescribed.

Source: Board of Investigation and Research, 79th Congress, First Session, *Public Aids to Domestic Transportation*, H.D. No. 159, Table 79, p. 459.

APPENDIX C

OPERATIONS DATA

TABLE 1—AIRCRAFT OPERATIONS OF MAJOR AIR SERVICES AND PERCENTAGE DISTRIBUTION BY TYPE OF SERVICE, 1942-1945
(Fiscal Year)

Type of Air Service	1942		1943		1944		1945	
	Operations	Per Cent	Operations	Per Cent	Operations	Per Cent	Operations	Per Cent
Total	6,223,608	100.0	11,262,132	100.0	18,188,951	100.0	18,627,596	100.0
Army	3,911,657	62.9	8,210,307	72.9	13,763,712	75.7	12,642,637	67.9
Navy ^a	481,975	7.7	1,426,255	12.7	2,525,133	13.9	3,412,090	18.3
Air carrier	1,288,164	20.7	1,026,579	9.1	1,326,960	7.3	2,103,083	11.3
Linerant	541,812	8.7	598,991	5.3	573,146	3.1	469,786	2.5

^a Includes Coast Guard.

Source: Monthly summaries of Air Traffic Control Operations, Federal Airways, Civil Aeronautics Administration. Taken from CAA *Statistical Handbook of Civil Aviation*, December, 1945, p. 18.

TABLE 2—NUMBER OF PERSONS, EMPLOYED, DOMESTIC
AIRLINES, 1928-1945

Calendar Year	Number Employed ^a	Calendar Year	Number Employed ^a
1928.....	1,451	1937.....	7,529
1929.....	1,936	1938.....	8,955
1930.....	2,740	1939.....	10,509
1931.....	4,300	1940.....	15,800
1932.....	3,998	1941.....	18,984
1933.....	4,361	1942.....	26,447
1934.....	4,178	1943.....	29,150
1935.....	5,917	1944.....	31,094
1936.....	7,045	1945.....	52,000 ^b

^a Includes pilots, co-pilots, stewards, stewardesses, dispatchers, mechanics and riggers, other hangar and field personnel, office employees, and all others.

^b Letter dated August 27, 1946, from Ben Stern, Assistant Administrator, Aviation Information Civil Aeronautics Administration.

Source: Civil Aeronautics Administration, *Statistical Handbook of Civil Aviation*, December, 1945, p. 29.

TABLE 3—AIRPORTS AND LANDING FIELDS, BY YEARS, 1926-1945

Calendar Year	Total	Commercial	Municipal	CAA INTERMEDIATE		Auxiliary Marked	All Others	Lighted Total	AIRPORTS OF ENTRY	
				Lighted	Unlighted				Regular	Temporary
1926.....	^a		^a	92	0	^a	^a	^a	0	0
1927.....	1,036	263	240	134	0	320	79	^a	0	0
1928.....	1,364	365	368	210	0	340	81	^a	0	0
1929.....	1,550	495	453	285	0	235	82	^a	10	8
1930.....	1,782	564	550	347	7	240	74	640	10	30
1931.....	2,093	829	780	385	19	^c	80	680	9	36
1932.....	2,117	869	777	337	15	^c	119	701	10	39
1933.....	2,188	938	827	246	19	^c	158	626	11	42
1934.....	2,297	872	980	250	9	^c	186	664	11	42
1935.....	2,368	822	1,041	282	9	^c	214	698	12	43
1936.....	2,342	774	1,037	284	12	^c	235	705	12	43
1937.....	2,299	727	1,053	278	5	^c	236	720	21	34
1938.....	2,374	760	1,092	265	2	^c	255	719	37	23
1939.....	2,280	801	963	266	0	^c	250	735	39	21
1940.....	2,331	860	1,031	289	0	^c	151	776	37	21
1941.....	2,484	930	1,086	283	0	^c	185	662	36	19
1942.....	2,809	1,069	1,129	273	0	^c	338	700	37	11
1943.....	2,769	801	914	239 ^b	1	^c	814	859	35	10
1944.....	3,427	1,027	1,067	228	1	^c	1,104	964	36	9
1945 (Oct. 1) ..	3,776	1,290	1,161	216	1	^c	1,108	1,005	30	7

^a Data not available.^b Includes three fields which were constructed but not commissioned on January 1, 1944.^c Auxiliary are now classified as to ownership, commercial or municipal.Source: Civil Aeronautics Administration, *Statistical Handbook for Civil Aviation*, December, 1945, p. 11.

TABLE 4—INCOME AND EXPENDITURES FOR MAINTENANCE AND OPERATION OF PUBLICLY-OWNED AIRPORTS USED BY SCHEDULED AIR CARRIERS, BY CALENDAR YEARS, 1936-1940^a

Year (Calendar)	Total Income	Total Expenses	Deficit	Per Cent of Income to Expense
ALL SOURCES				
1936.....	\$1,149,077	\$ 1,860,958	\$ 711,881	61.7
1937.....	1,338,545	2,360,237	1,021,692	56.7
1938.....	1,506,420	2,700,631	1,194,211	55.8
1939.....	1,953,701	2,931,328	977,627	66.6
1940.....	2,580,435	3,318,879	738,444	77.8
Total.....	\$8,528,178	\$13,172,033	\$4,643,855	64.7
SCHEDULED AIR CARRIERS				
1936.....	\$ 484,698	\$ 807,501 ^b	\$ 322,803	60.0
1937.....	584,284	1,034,526 ^b	450,242	56.5
1938.....	689,150	841,233 ^b	152,083	81.9
1939.....	801,400	960,170 ^b	158,770	83.5
1940.....	893,287	1,024,776 ^b	131,489	87.2
Total.....	\$3,452,819	\$ 4,668,206	\$1,215,387	74.0
OTHER SOURCES				
1936.....	\$ 664,379	\$ 1,053,457	\$ 389,078	63.1
1937.....	754,261	1,325,711	571,450	56.9
1938.....	817,270	1,859,398	1,042,128	44.0
1939.....	1,152,301	1,971,158	818,857	58.5
1940.....	1,687,148	2,294,103	606,955	73.5
Total.....	\$5,075,359	\$ 8,503,827	\$3,428,468	59.7

^a Includes leased and subleased fields and estimated amounts for airports not reporting. Exclusive of Washington National Airport and LaGuardia Field; the former did not open for operation until 1941, and information for the latter was not furnished upon request.

^b Does not include depreciation or interest.

Source: Civil Aeronautics Administration. Taken from *Public Aids to Domestic Transportation*, Board of Investigation and Research, 79th Congress, First Session, H.D. No. 159, Table 94, p. 498.

APPENDIX D

GOVERNMENT AID DATA

TABLE I—APPROPRIATIONS TO THE CIVIL AERONAUTICS ADMINISTRATION
FISCAL YEARS, 1943, 1944, 1945 AND 1946
(In Dollars)

Items	1943 ^a	1944 ^a	1945 ^a	1946 ^{a, b}
General Administration	\$ 1,664,000	\$ 1,945,000	\$ 2,776,718	\$ 3,028,000
Maintenance of Air				
Navigation Facilities	22,688,900	23,387,700	24,550,163	25,040,000
Technical Development	950,000	612,000	722,000	850,000
Enforcement of Safety				
Regulations	2,590,000	2,743,200	3,355,737	3,500,000
Establishment of Air				
Navigation Facilities	10,533,375	4,797,000	4,067,860	12,786,000
Civilian Pilot Training	72,677,450	29,400,000	....	....
Maintenance and Operation,				
Washington National Airport	521,500	558,000	550,000	582,000
Development of Landing Areas	199,740,000	(c)	(c)	(c)
Development of Civil				
Landing Areas . . . . .	....	9,907,890	....	....
War Training Service	3,500,000	....	....	....
Maintenance and Operation				
of Aircraft . . . . .	....	....	....	850,000
Airport Advisory Service . . . .	....	....	....	300,000
Construction of Cafeteria,				
Washington National Airport	....	....	....	156,000
Total	\$314,865,225	\$73,350,790	\$36,040,478	\$47,092,000

^a Does not include funds transferred by the military services.

^b Does not include supplementary appropriations that may be made subsequent to December 31, 1945.

^c Total appropriations of \$399,333,050 for the fiscal years 1941, 1942, and 1943 have been consolidated into one fund and unexpended funds are carried over until June 30, 1946.

Source: Civil Aeronautics Administration, *Statistical Handbook of Civil Aviation*, December, 1945, p. 3.

TABLE 2—AIDS TO AIR NAVIGATION, 1926-1945; NUMBER OF LIGHTED MILES, AIRWAY LIGHT BEACONS, AND RADIO RANGE STATIONS

Year (Calendar)	Lighted Mileage	Airway Light Beacons	Radio Range Stations
1926.....	2,041	612	...
1927.....	4,468	760	...
1928.....	6,988	1,188	...
1929.....	12,448	1,311	9
1930.....	15,258	1,652	33
1931.....	17,152	1,836	47
1932.....	19,500	1,988	68
1933... ..	18,655	1,796	94
1934.....	19,081	1,520	112
1935.....	22,012	1,868	137
1936.....	22,245	1,918	146
1937.. ..	22,319	1,969	180
1938.....	23,723	1,967	215
1939.....	27,072	2,089	244
1940.....	30,488	2,261	281
1941.....	32,679	2,274	312
1942.....	33,407	2,221	280
1943.....	33,403	2,178	291
1944.....	34,424	2,160	297
1945, July 1.....	34,885	2,151	294

Source: Civil Aeronautics Administration, *Statistical Handbook of Civil Aviation*, December, 1945, pp. 16-17.

TABLE 3—FEDERAL EXPENDITURES FOR CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE DOMESTIC CIVIL AIRWAYS SYSTEM, FISCAL YEARS 1925-1941^a

Year (Fiscal)	Maintenance and Operation	Administrative Expenses	Teletype Circuit Rentals	Miscellaneous Expenses	Expenditures by Weather Bureau	Total Maintenance, Operating, and Other Expenditures (1+2+3+ 4+5)	Investment— New Construction and Reconstruction	Total Expenditures (6+7)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1925.....	\$ 295,212 ^d					\$ 295,212 ^d	\$ 514,406 ^d	\$ 809,618
1926.....	307,255 ^e			\$ 1,613	\$ 191,100	307,255	27,703 ^f	334,958
1927.....	333,861 ^h	\$ 23,387		21,300	255,328	549,961	269,533	819,494
1928.....	1,128,428	340,172		95,300	425,612	1,745,228	1,481,610	3,226,838
1929.....	2,074,803	555,210		217,615	948,260	3,150,925	1,740,000	4,890,925
1930.....	2,934,921	483,317		229,542	1,317,086	4,855,613	1,521,000	6,346,613
1931.....	3,967,274	813,061	\$ 241,500	306,579	1,576,278	6,928,673	2,121,600	9,050,383
1932.....	4,973,356	855,912	855,379	306,579	1,376,843	8,567,504	1,471,500	10,039,004
1933.....	4,220,233	698,850	643,097	262,032	1,090,788	7,201,055	75,210	6,276,265
1934.....	3,025,611	791,680	457,710	115,766	1,090,788	5,391,555	279,917	5,671,472
1935.....	3,372,113	680,062	361,080	235,661	1,180,400	5,839,316	2,181,258	8,010,574
1936.....	3,515,892	819,591	374,488	185,430	1,290,713	6,186,114	294,199	6,480,313
1937.....	4,079,755	248,279 ⁱ	394,862	195,000	1,604,556	6,522,452	791,545	7,313,997
1938.....	5,099,505	207,640	890,216	292,000	2,153,664	8,643,055	2,654,606	11,297,661
1939.....	5,481,584	475,782	1,000,099	249,007	2,467,225	9,673,697	4,543,189	14,216,886
1940.....	7,092,574 ^k	664,349	1,250,793	532,201	3,459,943	13,019,860	5,595,352 ^k	18,615,212
1941..	8,916,652 ^k	675,587	1,414,402	522,445	3,465,322	14,994,468	5,694,927 ^k	20,689,395
Total ..	\$60,819,029	\$8,262,879	\$8,485,536	\$3,461,491	\$22,803,118	\$103,832,053	\$31,257,555	\$135,089,608

^a Except as otherwise noted, all data from Civil Aeronautics Administration

^b Includes research and experimental service, airport consulting and rating service, aero mapping, and distribution by Civil Aeronautics Administration of Weather Bureau communications

^c Weather Bureau, Department of Commerce

^d Post Office Department, Annual Report of the Postmaster General, 1925, p. 121.

^e Post Office Department, Annual Report of the Postmaster General, 1926, p. 127.

^f Difference between the \$542,109 inventory value of the facilities at time of transfer to Department of Commerce and the \$514,406 capital expenditure incurred in 1925 by Post Office Department.

^h Post Office Department, Annual Report of the Postmaster General, 1927, p. 135.

(Continued on next page)

† Prior to 1937 this item includes expenditures for project engineering and superintendence of construction, which should have been considered as charges to the project. When the 1937 appropriation act provided for the new appropriation, "Salaries, Bureau of Air Commerce," a revised system of accounts was put into effect under which engineering and job supervision costs were charged direct to construction projects.

‡ Excludes expenditures for airway facilities in the Territories and possessions of the United States, reported as follows: Fiscal year 1940, cost of operation and maintenance, \$1,467,737; cost of establishment, \$1,387,450; fiscal year 1941, cost of operation and maintenance, \$550,223; cost of establishment, \$2,118,635.

Source: Civil Aeronautics Administration, *Public Aids to Domestic Transportation*, Board of Investigation and Research, 79th Congress, First Session, H.D. No. 159, Table 82, p. 474.

TABLE 4—CAPITAL EXPENDITURES ON PUBLICLY OWNED AIRPORTS USED BY SCHEDULED AIR CARRIERS,
BY ITEMS OF COST, 1936-1940*

Year	Number of Airports	Land	Land Area Development ^b	Buildings ^c	Equipment ^d	Miscellaneous	Total
AMOUNT (In Dollars)							
1936 ^e	165	\$27,224,021	\$ 57,084,836	\$21,580,283	\$ 5,174,024	\$4,308,805	\$115,371,969
1937	195	4,490,867	19,252,470	4,097,800	928,634	1,158,329	29,928,100
1938	200	1,486,598	29,360,352	8,549,154	989,627	1,517,035	41,902,766
1939	234	630,880	15,962,057	2,967,850	896,186	487,011	20,943,984
1940	242	2,088,449	17,605,776	7,879,405	2,476,963	1,898,932	31,949,525
Total		\$35,920,815	\$139,265,491	\$45,074,492	\$10,465,434	\$9,370,112	\$240,096,344
PER CENT OF TOTAL							
1936		23.6	49.5	18.7	4.5	3.7	100.0
1937		15.0	64.3	13.7	3.1	3.9	100.0
1938		3.5	70.1	20.4	2.4	3.6	100.0
1939		3.0	76.6	13.7	4.3	2.4	100.0
1940		6.5	55.1	24.7	7.8	5.9	100.0
Total		15.0	58.0	18.8	4.3	3.9	100.0

* Includes leased and subleased fields, and estimated expenditures for airports not reporting.

^b Includes clearing, drainage, seeding, sodding, and topsoiling; hard-surfacing taxiways, runways, and aprons; and fencing, roads, auto parking, and landscaping.

^c Includes hangars, administration and other buildings.

^d Includes radio, field lighting, shop, field, fuel, and fire fighting.

* Capital expenditure figures are cumulative to the end of 1936.
Source: Questionnaire returns to the Civil Aeronautics Administration. Taken from *Public Aids to Domestic Transportation*, Board of Investigation and Research, 79th Congress, First Session, H.D. No. 159, Table 92, p. 490.

TABLE 5—PUBLIC AID INCLUDED IN AIR-MAIL PAYMENTS, 17 DOMESTIC AIR LINES TRANSPORTING MAIL, FISCAL YEARS 1938-1940^a

Year (Fiscal)	Air-Mail Payments ^b	Joint Operating Expenses and Computed Return Allocated to Mail ^c	Excess of Payments Over Allocated Joint Operation Expenses and Allowance for Return	
				<i>Mills per Pound-Mile</i>
1938.....	\$14,747,945	\$ 5,037,948	\$ 9,709,997	0.68
1939.....	17,108,249	5,164,172	11,944,077	.75
1940.....	19,470,635	4,994,965	14,475,670	.77
1941.....	20,280,178	6,031,937	14,248,241	.63
Total	\$71,607,007	\$21,229,007	\$50,377,985	.73

^a Payments to each carrier and allocation to mail of operating expenses and allowances for return for each fiscal year are shown in appendix AA, p. 811 of *Public Aids to Domestic Transportation* (See source below). This summary table does not include All American Aviation, owing to the peculiar nature of this company's operations.

^b Records of Air-Mail Service Division, U. S. Post Office Department.

^c Computed from carriers' annual reports (Form 2780) to the Civil Aeronautics Board for all carriers except Canadian Colonial, which, prior to January, 1941, used Form 2380. Allowance for return is at rate of 12 per cent, before any deductions for Federal and State income, excess profits, and undistributed profits taxes.

Source: Board of Investigation and Research, 79th Congress, First Session, *Public Aids to Domestic Transportation*, H.D. No. 159, Table 76, p. 452.

TABLE 6—PUBLIC AID TO AIR-MAIL CONTRACTORS, FISCAL YEARS 1931-1938

Year (Fiscal)	Air-Mail Payments ^a	Contractors Operating Cost Allocated to Mail	Excess of Air-Mail Payments Over Allocated Cost	Computed Return or Investment Allocated to Mail ^b	Excess of Air-Mail Payments Over Allocated Cost and Allowance for Return
1931	\$ 16,891,552	\$ 9,884,496	\$ 7,007,056	\$ 1,787,966	\$ 5,219,090
1932	19,929,565	8,166,140	11,763,425	970,313	10,793,112
1933	19,400,097	5,168,442	14,231,655	621,709	13,609,946
1934	9,950,608	3,347,534	6,603,074	557,628	6,045,446 ^c
Total	\$ 66,171,822	\$ 26,566,612	\$ 39,605,210	\$ 3,937,616	\$ 35,667,594
1935	\$ 8,352,612	\$ 4,279,286	\$ 4,073,326	\$ 451,311	\$ 3,622,015
1936	12,270,439	3,714,090	8,556,349	353,263	8,203,086
1937	12,757,382	4,071,875	8,685,507	484,519	8,200,988
1938	14,214,092	4,775,128	9,438,964	478,873	8,960,091
Total	\$ 47,594,525	\$ 16,840,379	\$ 30,754,146	\$ 1,767,966	\$ 28,986,180
Grand Total	\$ 133,766,347	\$ 43,406,991	\$ 70,359,356	\$ 5,705,582	\$ 64,653,774

^a Differences as compared with the amounts in Table 74, p. 439 of *Public Aids to Domestic Transportation* (see source below), are explained by the fact that the latter figures reflect adjustments subsequently made by the Post Office Department.

^b Rate of return allowed by Federal Coordinator of Transportation was 12.5 per cent on the average depreciated value of working assets in the respective years devoted to air carrier service. Apportionment to mail made on basis of ratio of total direct aircraft operating expenses allocated to mail to total direct aircraft operating expenses for all services.

^c The excess of mail payments was \$5,614,105 and \$431,341, respectively, for the two parts of the fiscal year during which contract mail service was in effect.

Source: Federal Coordinator of Transportation, *Public Aids to Transportation*, vol. 1, 1940, Tables 7 and 12, pp. 141, 146. Taken from *Public Aids to Domestic Transportation*, Board of Investigation and Research, 79th Congress, First Session, H.D. No. 159, Table 75, p. 449.

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