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AVIATION: DIRECT FEDERAL SPENDING, 1918-1998

John W. Fischer and Robert S. Kirk, Economics Division

Updated February 3, 1999

Abstract. The federal government has provided large financial resources in support of commercial aviation since 1918. This report details the amounts and types of federal spending that have occurred over this 80 year period. It also discusses some of the issues that have shaped federal policy toward aviation and identifies some of the issues likely to affect federal spending in the future.

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ABSTRACT

The federal government has provided large financial resources in support of commercial aviation since 1918. This report details the amounts and types of federal spending that have occurred over this 80 year period. The report also discusses some of the issues that have shaped federal policy toward aviation and identifies some of the issues likely to affect federal spending in the future. This report will not be updated.

Aviation: Direct Federal Spending, 1918 - 1998

Summary

The federal government has played a large role in the development of aviation. In the ten years prior to 1918 this role was exclusively military in origin. Beginning in 1918, with the first air mail flights, commercial aviation became a growing focus of federal attention and assistance. In the intervening 80 years the federal government has spent \$155 billion in support of aviation activities.

This report details, and comments on, federal assistance provided directly in support of commercial aviation. Direct assistance in this view can take several forms; for example, the physical components of the air traffic control system can be regarded as infrastructure; direct payments to airlines can be regarded as subsidies, and the operating expenses of the Federal Aviation Administration (FAA) and its predecessor agencies can be construed as operational support. Indirect assistance, such as that provided through military research and development (R&D), and by R&D provided by agencies other than the Department of Transportation and its predecessor agencies is not detailed in this report.

In the early years of federal support for aviation most assistance came in the form of designated subsidies to foster the growth of what has become the commercial aviation industry. This was in keeping with the aviation sector's embryonic nature. As the industry has matured, the level and expense of the federal effort has expanded and spending for capital infrastructure and operational activities have become specific components of annual federal budgets.

The debate today is not so much about whether a federal role in aviation is appropriate. Rather the debate is about how to pay for federal programs and who should pay for it. In the first half of this century almost all aviation expenses came from U.S. Treasury general funds. In the trust fund era this contribution has diminished as designated user fees have provided a majority of direct aviation-related funding. The general fund contribution, however, remains significant, and controversial.

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Aviation: Direct Federal Spending, 1918 - 1998

The dawn of human flight occurred less than a century ago. Yet in that short period, flight has gone from novelty to utility. Air travel, in the eyes of many, is now nothing more than a ho hum reality, notable mostly for its mystery meals and lost luggage. In fact, the benefits of aviation permeate our society in ways that are both visible to us, such as airline travel, and largely invisible to most of us, such as the rapid transport of human organs for transplantation.¹

The federal government has played a large role in the development of aviation. In the ten years prior to 1918 this role was exclusively military in origin. Beginning in 1918, with the first air mail flights, commercial aviation became a growing focus of federal attention and assistance. In the intervening 80 years the federal government has spent \$155 billion in direct support of aviation.

Framework

This report details, and comments on, federal assistance provided directly in support of commercial aviation. Direct assistance in this view can take several forms; for example, the physical components of the air traffic control system can be regarded as infrastructure; direct payments to airlines are historically categorized as subsidies², and the operating expenses of the Federal Aviation Administration (FAA) and its predecessor agencies can be construed as operational support. Indirect assistance, such as that provided through military research and development (R&D), and by R&D provided by agencies other than the Department of Transportation and its predecessor agencies is not detailed in this report.

For the purposes of this report commercial aviation is composed primarily of the air carrier industry (airlines) and general aviation.³ Military aviation is a separate

¹The historical information in this report draws heavily from two previous CRS Reports: U.S. Library of Congress. Congressional Research Service. *Federal Aid to Domestic Transportation*. CRS Report 77-112E. by Stephen Thompson, Barbara Maffei, and William Lipford; and *Federal Aid to Domestic Transportation: A Brief History from the 1800s to the 1980s*. CRS Report 88-574E. by Nancy Heiser. The first of these reports contains detailed information on levels of assistance and provides an explanation of how and why specific subsidy determinations were made. The second report is a shortened update of the earlier product.

²Subsidies refer to historical data identified as such in source documents.

³General aviation is a bucket term that refers to all types of aviation activities except air
(continued...)

activity not detailed in this report. There are, however, numerous overlaps between commercial and military aviation. The air traffic control system, for example, has both civilian and military components and serves both types of aviation, often using the same facilities.

The authors of this report exercise some judgement as to whether or not to include certain agency information. Costs that cannot be directly viewed as having a direct impact on aviation activities are omitted. The operating expenses for the now defunct Civil Aeronautics Board (CAB), for example, have been omitted, whereas assistance to airlines provided as a result of CAB actions is included. The data in this report is presented using actual dollars. The period covered by this report examines a wide range of federal activities that cannot be easily compared in fact or in monetary terms. Hence the use constant dollars is not viewed as being helpful for this analysis.

Federal assistance to commercial aviation has taken numerous forms. In some instances, federal assistance is readily identifiable, and can be detailed using federal budget documents. However, identifying spending in the era prior to the adoption of a unified federal budget, which occurred in 1969, is somewhat problematic. It is often not possible to find original source data for the pre-1969 period. As a result, this analysis draws heavily on secondary sources for this information.

In addition, it is often difficult to distinguish whether pre-1969 data reflects fiscal year data or calendar year data. This distinction does not affect the results and trends enumerated in this report, however. Post 1970 data in this report is all fiscal year data.

The research for this report has identified a number of data inconsistencies for federal accounting of aviation activities. Most of these inconsistencies exist because of choices made by earlier research about what should, or should not, be counted as federal aid. To adjust for these problems, this report uses what CRS feels are the most consistent data sources. For the most part, however, data differences are relatively small in numerical terms and would not have a major affect on the spending trends presented in this report.

Early History, 1918-1938

The federal government has had a direct financial involvement in the development and support of domestic air transportation since the aforementioned beginning of air mail service by the Post Office Department in 1918. Air mail service remained mainly a Post Office Department endeavor until 1928. The estimated cost to the federal government from 1918 to 1928 for the provision of this

³(...continued)

carriers and the military. Corporate jets and crop dusters are examples of general aviation.

service was \$12 million.⁴ The Air Mail Act of 1925, also known as the Kelly Act, allowed for the hiring of private contractors to replace the existing government operation of the air mail service. By 1928 this transfer was largely complete. Between 1926 and 1930, the federal government paid more than \$31 million to contractors, while collecting less than \$15 million in postal revenues for air mail service. As a result, the service was provided at a deficit of slightly over \$17 million.⁵

In 1930, Congress passed the Watres Act which permitted higher compensation to air carriers by relating payments to the cost of operation rather than keying them to the actual volume of mail carried. During the period of airmail operation under the Watres Act, 1931 to 1934, total postal expenditures exceeded postal revenues by approximately \$53.6 million.⁶ More importantly from the perspective of federal policy, the Post Office began requiring that air mail contractors carry passengers. It was the hope of the Post Office that passenger traffic could eventually lead to a reduction in the need for air mail subsidies. In 1934, the Post Office terminated all air mail contracts on the grounds that contractors were colluding on pricing. The fledgling U.S. Army Air Corps was pressed into mail delivery service with disastrous results. Numerous accidents and deaths revealed an Air Corps with severe operating deficiencies in need of correction.

To rectify the situation, Congress passed the Air Mail Act of 1934 (P.L. 73-308), which contained several significant changes in Government policy regarding airmail operations. The Act reopened all airmail routes to competitive bidding and authorized the Postmaster General to contract with private firms to provide airmail service. It also transferred economic regulation of aid to carriers and rates of compensation from the Post Office Department to the Interstate Commerce Commission (ICC), and moved safety regulation from the Post Office Department to the Department of Commerce. From the enactment of the Air Mail Act of 1934 until 1938, air passenger-miles doubled and airmail pound-miles rose substantially. During this time, the Federal Government incurred a deficit from airmail activities of \$26.4 million.⁷

The Regulated Era: 1938 - 1978

Airline Subsidies, 1939-1984

For many years, the issue of subsidy payments to airlines was among the most controversial of all transportation issues considered by Congress. The airline industry's once major competition, the passenger railroads, railed at the unfair

⁴U.S. Congress. House. Committee on Interstate and Foreign Commerce. Public Aid to Domestic Transportation. Report submitted by the Board of Investigation and Research. Washington, U.S. Govt. Print. Off., 1941. p. 110. (Here after referred to as Board Report.)

⁵Board Report, p. 439.

⁶Board Report, p. 439.

⁷Board Report, p. 439.

advantage which they believed accrued to the airline industry as a result of subsidy payments. Long-term arguments about how to count subsidies and what they meant continued throughout the 1940s, 1950s, and into the 1960s. Some serious attempts were made by the federal government to put airline industry subsidies into perspective. The results of these studies are reflected in the following discussion and table.⁸

In 1938, Congress passed the Civil Aeronautics Act which created a five member, independent regulatory agency called the Civil Aeronautics Authority (CAA). At the same time, the Act also created an Air Safety Board which is the predecessor of today's National Transportation Safety Board (NTSB). In 1940, an Executive Order reorganized the CAA, renamed it the Civil Aeronautics Board (CAB), and made it part of the Department of Commerce. The CAB had authority to fix airmail rates and hence, subsidy levels. Prior to the 1938 Act the payment of air mail subsidies to encourage airline passenger travel was implicit. The 1938 Act was explicit in its subsidy provisions. Federal subsidies to airlines from 1939 to 1953 totaled \$310,890,000.⁹

During the regulated era, 1938 - 1978, airlines operated on routes prescribed by the CAB. The CAB also regulated fares, market entry, and other facets of the airline industry's activities. The CAB never regulated frequencies (the number of flights per day) between markets. The regulated era is viewed as the maturation period of the airline industry, which under the CAB's watchful eye moved into the jet age and became the nation's principal common carrier of passenger service.

In 1953, airline subsidies were separated from airmail compensation and provided independently¹⁰. After that date, the Post Office paid airmail compensation and the CAB made all airline subsidy payments. For all practical purposes, direct subsidy to the largest airlines was phased out by the end of the 1950s. After that date almost all remaining subsidy was focused on local air service and other specialized services, such as those provided in Alaska and Hawaii.

Shortly after World War II the CAB participated in the creation of a new class of air carriers, the local service carriers, whose primary purpose was to provide service to destinations lacking air service from the large trunkline air carriers. Most local service carriers originally started as small scale operations performing extensive short-hop type service. Over time these airlines evolved into significant service providers (U.S. Airways is a direct descendent of one of the local service carriers). The local service airlines were provided with designated assistance long after the subsidies to trunk lines ended. In addition, these air carriers were major recipients of aid from the aircraft guaranteed loan program that will be discussed later in this report. Local service subsidies, known over part of their life as the Section 406

⁸Op Cit. Footnote 1.

⁹U.S. Civil Aeronautics Board. Subsidy for United States Certified Air Carriers. Washington, U.S. Govt. Print. Off., March 1974. Appendix I.

¹⁰This split was accomplished by Executive Order of the Eisenhower Administration, Reorganization Plan No. 10.

program, terminated in the early 1980s, but some residual subsidy was provided as late as 1984.

Subsidy payments by the CAB from 1954 to 1983 totaling almost \$1.9 billion are detailed in Table 1.

Table 1. Federal Subsidies to Airlines: 1954-1983
(\$ thousands)

Year	Alaskan Carriers	Hawaiian Carriers	Helicopter	Local Service	Domestic Trunkline	Total
1954	\$8,303	\$689	\$2,574	\$24,299	\$3,822	\$39,687
1955	7,902	293	2,656	22,358	2,773	35,982
1956	7,619	291	2,735	24,122	1,790	36,557
1957	7,707	216	3,771	28,444	1,572	41,710
1958	8,179	45	4,419	32,703	2,283	47,629
1959	7,337	168	4,860	36,450	1,201	50,016
1960	8,818	330	4,930	51,498	—	65,576
1961	9,313	505	5,538	56,300	—	71,656
1962	9,056	338	5,781	64,835	—	80,010
1963	9,690	520	5,000	67,700	—	82,910
1964	9,411	802	4,300	65,482	2,566	82,561
1965	8,163	995	3,358	61,412	3,475	77,403
1966	6,509	1,124	1,170	58,402	3,089	70,294
1967	5,939	567	—	54,966	2,477	63,949
1968	5,984	—	—	47,982	1,343	55,219
1969	5,421	789	—	40,513	—	46,723
1970	4,896	—	—	34,830	—	39,726
1971	4,499	—	—	55,940	—	60,439
1972	4,394	—	—	62,160	—	66,554
1973	4,365	—	—	60,206	—	64,571
1974	4,329	—	—	68,470	—	72,799
1975	4,345	—	—	59,043	—	63,388
1976 ^a	4,360	—	—	68,162	—	72,522
1977	4,273	—	—	77,888	—	82,161
1978	2,989	—	—	70,944	—	73,933
1979	3,916	—	—	68,227	—	72,143
1980	5,530	—	—	74,544	—	80,074
1981	9,505	—	—	97,118	—	106,693
1982	10,022	—	—	45,085	—	55,107
1983	—	—	—	0	—	0
Total	192,684	7,672	51,092	1580083	26,391	1,857,992

Source: For years 1954 through 1975: U.S. Civil Aeronautics Board. Subsidy for U.S. Certificated Air Carriers, Washington, U.S. Govt. Print. Off., March 1974, Appendix I, and March 1976 edition, Appendix VII. For years 1976 through 1983: The U.S. Office of Management and Budget. The Budget of the United States Government, Appendix. Fiscal years 1978 through 1985. Figures for 1976-1983 are net obligations incurred. Totals may not add due to rounding.

Guaranteed Loans for Aircraft

The aircraft loan guarantee program began in 1957 (P.L. 85-307) and expired in 1983. During its lifetime, the program authorized federal guarantees of up to 90 percent of private loans for the purchase of equipment by local, short-haul, and feeder air carriers. The program was instituted to help carriers replace equipment with

newer and lower cost operating equipment. The rationale for the program was that lower costs would likely reduce the amount of subsidy paid to the carriers by the Federal Government. These loan guarantees totaled \$924 million over the years 1957 to 1983, as shown in Table 2. Funding for this program was subject to appropriations and is considered spending for the purposes of this report.

The absolute amount of assistance to airlines provided by the loan guarantee program is not clear. If the airline could have obtained credit on essentially similar terms without a guarantee, the subsidy issue would be essentially moot. However, if the airline could not have obtained the loan without a Government guarantee, it would have benefitted greatly from the program. Since there is little evidence to indicate whether the loans could have been obtained, or on what terms, in the absence of a Government guarantee, the amount of subsidy to airlines cannot be accurately determined.

However, the Federal Government does bear the cost of the loan program if airlines default. The guarantee shifts the cost of default away from the private market to the public-at-large. During the program's existence, 12 airlines defaulted on 23 loans for a total of \$183,038,430. Airlines have paid back just over \$132 million of these defaulted loans for a net cost to the Government of approximately \$50.5 million.¹¹ There are no outstanding loans.

Table 2. Guaranteed Loans to Air Carriers, 1957-1983

Year	Amount of Guarantee	Year	Amount of Guarantee
1958	\$13,234,950	1971	0
1959	9,273,839	1972	0
1960	3,414,600	1973	24,300,000
1961	7,220,484	1974	9,558,000
1962	4,630,500	1975	47,014,369
1963	810,000	1976	69,245,550
1964	5,850,000	1977	77,029,158
1965	359,640	1978	0
1966	2,547,742	1979	14,096,826
1967	2,432,551	1980	246,170,595
1968	0	1981	372,372,680
1969	0	1982	10,693,744
1970	0	1983	3,816,000
		Total	924,071,228

Note: The loan amounts guaranteed are up to 90 percent of the total loan.

Source: For years FY1978 - FY1983: The Federal Aviation Administration, *FAA Aircraft Purchase Loan Guarantee Program, 1958- 1983, Experience and Lessons for the Future*. {FAA Internal Report}. May 5, 1983. p. A13-A16. For FY1958 -FY1977: U.S. Library of Congress. Congressional Research Service. *Federal Aid to Domestic Transportation: A Brief History from the 1800s to the 1980s*. CRS Report 88-574E. by Nancy Heiser. p. 31.

Essential Air Service (EAS): 1979 - 1998

The only assistance that might be categorized as subsidies which continue today are those provided under the Essential Air Service (EAS) Program created by Section

¹¹Federal Aviation Administration. Unpublished data January 1999.

419 of the Airlines Deregulation Act of 1978 (P.L. 95-504). The program was designed to provide air service to communities that lost service as a result of deregulation. EAS could be viewed as a successor to the Section 406 program with which it overlapped for several years. The EAS program, however, was broader in its intent and was designed to potentially serve more markets than the section 406 program. The program was originally created with a 10-year authorization. Until January 1, 1985 the EAS program was administered by the CAB. Since that date it has been operated by the Office of the Secretary of Transportation (OST).

The EAS program has now survived into a third decade. Given the numerous attempts to eliminate the program by fiscal conservatives as an unnecessary expense for a relatively small number of communities, its continued existence would be viewed by some as remarkable. Perhaps the most important reason for the program's survival, however, was a change in its source of funding. Since FY1992, EAS has received all of its funding from the Airport and Airway Trust Fund (also known as the Aviation Trust Fund). Over its lifetime the program has received almost \$588.2 million in trust fund and general fund monies.

**Table 3: Essential Air Service Expenditures:
Fiscal Years 1979-1998 (\$ thousands)**

Year	Amount	Year	Amount	Year	Amount
1979	507	1986	24,291	1993	35,571
1980	9,053	1987	26,679	1994	31,827
1981	15,007	1988	28,393	1995	23,000
1982	26,075	1989	25,567	1996	39,000
1983	57,019	1990	33,237	1997	39,000
1984	35,264	1991	26,126	1998	39,000
1985	34,949	1992	38,600	Total:	588,165

Source: U.S. Office of Management and Budget. The Budget of the United States Government, Appendix. Fiscal years 1981 through 1999. Figures for FY1979-FY1991 are net obligations incurred. Figures for FY1992-FY1998 are appropriations funded out of the Airport and Airway Trust Fund.

Airways, 1926 - 1970

Enactment of the Air Commerce Act of 1926, gave the federal government its first formal role in the regulation and development of civil aviation. As a result of the Act, the Department of Commerce became responsible for establishing a system of airways, maintaining necessary aids-to-navigation, licencing pilots, issuing airworthiness certificates for aircraft, and investigating accidents.

Airways are paths through the navigable airspace developed by the Federal Government to control the movement of aircraft in an orderly fashion. The airways system includes physical attributes such as control towers and radar equipment. Only the Federal Government provides domestic airway facilities.

As the aviation system developed the airway and air navigation systems also grew in sophistication. In the mid 1930s, the first airway traffic control center,

operated by the airline industry, was established in Newark, NJ. On July 6, 1936 the federal government took over operation of the Newark center and two other established centers. All new airway centers would be constructed and staffed by the federal government from this point forward. On November 1, 1941 airport towers came under federal control as well.

The Civil Aeronautics Administration (CAA) was responsible for maintaining and operating the airways system until 1958. In that year, the Federal Aviation Act of 1958 created the Federal Aviation Administration (FAA). At that time, the FAA essentially assumed all non-regulatory activities, such as safety oversight and operation of the air traffic control system. In 1966, the FAA lost its independence and became an operating agency of the newly created Department of Transportation (DOT).

For the years 1925 through 1941, the governments' airway costs totaled almost \$112 million.¹² Federal airway expenditures for 1942 through 1970, shown in Table 4, totaled just over \$9 billion. Therefore, expenditures on airways from 1925 through 1970 were just over \$9.1 billion.

Table 4. Federal Airway Expenditures, 1942-1970
(\$ thousands)

Year	Amount	Year	Amount
1942	\$34,200	1957	208,586
1943	39,500	1958	302,801
1944	36,600	1959	353,895
1945	65,300	1960	420,527
1946	51,000	1961	515,644
1947	84,700	1962	509,889
1948	90,300	1963	555,443
1949	108,600	1964	614,486
1950	130,100	1965	580,750
1951	122,800	1966	578,619
1952	109,900	1967	645,030
1953	119,500	1968	690,266
1954	111,500	1969	806,234
1955	115,200	1970	990,040
1956	123,800	Total	\$9,115,210

Sources: For years 1942 through 1956: U.S. Congress. Senate. Committee on Commerce. 87th Congress, 1st Session. *National Transportation Policy*. Report No. 445, Washington, U.S. Govt. Print. Off., 1961. p. 182. (Construction & operations; R &D, Flight Standards, and "other necessary expenses") For years 1957 through 1970: U.S. Department of Transportation. *Estimated Federal Expenditures on Domestic Transportation Capital Improvements and Operating Programs, by State, Fiscal Years 1957-1971*, Washington, U.S. Govt. Print. Off., 1974. p. xii.

Airports, 1926 - 1970

The Air Commerce Act of 1926 did not authorize the Secretary of Commerce to establish, operate, and maintain airports. The Act followed the precedents set by

¹²Board Report, p. 78.

maritime laws which authorized federal aid for areas such as safety and weather forecasting, but not for the construction and improvement of docks and terminal facilities. Prohibition of federal aid for airport development remained in law until the passage of the Civil Aeronautics Act of 1938.

Although the Air Commerce Act of 1926 specifically prohibited federal support for airport development, the economic programs of the 1930s, created to relieve the effects of the Great Depression, used federal funds for airport construction, as they did for waterway and road projects. This support, which began as an emergency employment and income measure, marked the first period of substantial federal funding for airport development. Federal aid under these work-relief programs totaled \$393,306,703.¹³ However, approximately 60 percent of the airports built under these work-relief projects were eventually converted to other uses. This can be accounted for by reducing program expenditures, \$393,306,703, by 60 percent for an estimate of \$157,322,618.

The Civil Aeronautics Act of 1938 (P.L. 75-706) authorized the CAB to survey the existing airport systems and recommend whether or not, and to what extent, the Federal Government should participate in the construction, improvement, development, operation, and maintenance of airports. In March 1939, the CAB submitted its report to Congress, recommending that the Federal Government participate in the development and maintenance of airports and that preference be given to airports along the major trade routes of the nation or to those useful to the national defense. During World War II, many airports were constructed to facilitate the war effort, but the value of these airports cannot be accurately determined.

Although World War II intervened before Congress could implement the CAB's recommendations, they did become the starting point for consideration of legislation which became the Federal Airport Act of 1946 (P.L. 79-377). This Act provided a program of grants-in-aid for airport development. The Airport and Airway Development Act of 1970 (P.L. 91-258) marked the beginning of a strong Federal Government commitment to airport development, including increased funding and the creation of an airport and airway trust fund.

Federal expenditures for airports prior to 1953, excluding work-relief programs and the Federal-Aid Airport Program, were almost \$403 million.¹⁴ Federal expenditures on airports from 1953 to 1970 were just over \$1 billion as shown in Table 5.

¹³U.S. Congress. Senate. The National Airport Program; Report of the Airport Panel of the Transportation Council of the Department of Commerce on the Growth of the United States Airport System. Senate Document No. 83-95, 83rd Cong., 2d Session. Washington, U.S. Govt. Print. Off., 1954. p. 34.

¹⁴Ibid.

Table 5. Federal Airport Expenditures, 1953-1970

Year	Amount	Year	Amount
1953	\$11,007,007	1963	75,279,543
1954	-855,556	1964	71,596,981
1955	19,698,475	1965	59,587,993
1956	17,794,280	1966	64,296,000
1957	45,141,216	1967	71,690,000
1958	70,325,745	1968	82,785,000
1959	72,956,360	1969	112,256,000
1960	82,202,876	1970	93,446,000
1961	73,783,676		
1962	46,381,321	Total	1,069,372,917

Note: The amounts include outlays for grants-in-aid and for Dulles International Airport and Washington National Airport which were owned and operated by the FAA until 1986.

Source: For years 1953 through 1965: U.S. Congress. House. Continuing Federal Airport Program. 89th Congress, 2d Session, Report No. 2164. Washington, 1966. p. 5. For years 1966 through 1971: U.S. Department of Transportation. Estimated Federal Expenditures on Domestic Transportation Capital Improvement and Operating Programs, by State, 1957-1971. Washington, U.S. Govt. Print. Off., 1974. p. xii.

The Trust Fund Era: 1971 - 1998

Prior to the passage of the Airport and Airway Development Act of 1970, none of the federal taxes paid by airlines, general aviation operators, or passengers were specifically designated for airport and airway construction improvements. Although many observers considered these taxes a partial offset to the expense of constructing and maintaining the airport and airway system, they were paid into the general fund of the U.S. Treasury.

The airport and airway trust fund was created by the revenue title of the Airport and Airway Development Act of 1970 (P.L. 91-258). The "aviation trust fund," as it is also known, was established to provide funding for capital improvements to the nation's airport and airway system. The scope of the aviation trust fund has been expanded over time. The most recent full reauthorization of aviation programs occurred with passage of Federal Aviation Administration Authorization Act of 1996 (P.L. 104-264). A six-month extension to that authorization approved in the waning moments of the 105th Congress in the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1998 (P.L. 105-277) expires on March 31, 1999. The most recent change in the levels of revenue dedicated to the trust fund occurred as part of the Taxpayers Relief Act of 1996 (P.L. 105-34).

FAA Programs and Spending, FY1971 - FY1998

The trust fund, at present, provides funding for all four of the FAA budget's major components: Operations and Maintenance (O&M), Facilities and Equipment (F&E), Research, Engineering, and Development (RE&D), and the Airport Improvement Program (AIP). The trust fund provides all funding for all but the O&M account. Funding for the O&M account is derived from both the trust fund and U.S. Treasury general fund (issues concerning this split will be discussed in the next section).

As can be seen in Table 6, FAA program spending has risen dramatically since FY1971. Although increases have occurred in all spending categories, the increases in the O&M account have been the most substantial on a relative basis. A source of growth in spending has been the ongoing, and controversial, upgrade of the air traffic control system which began in the early 1980s and is still many years from completion. Most of this spending shows up in the F&E account, but this spending has affected other accounts as well.

A close examination of this table reveals some apparent anomalies in growth trends. In most instances, these are the results of specific events, such as the air traffic controllers strike of 1981. As a result, the anomalies should probably be regarded as transient effects on what has been, and is likely to remain, a scenario of steady growth.

Table 6. FAA Expenditures: Fiscal Years 1971-1998
(\$ millions)

Year	O & M	F & E	RE & D	AIP ¹	Total
1971	1,026	238	49	193	1,506
1972	989	302	78	15	1,384
1973	1,170	213	70	635	2,088
1974	1,292	250	62	0	1,604
1975	1,419	227	58	0	1,704
1976	1,567	246	67	515	2,395
1977	1,738	200	74	510	2,522
1978	1,898	209	81	555	2,743
1979	2,033	345	75	644	3,097
1980	2,170	293	75	677	3,215
1981	2,340	350	85	570	3,345
1982	2,292	261	72	450	3,075
1983	2,579	625	103	750	4,057
1984	2,587	750	264	800	4,401
1985	2,699	1,358	265	925	5,247
1986	2,725	895	237	885	4,742
1987	2,959	805	142	1,025	4,931
1988	3,184	1,108	153	1,269	5,714
1989	3,445	1,384	160	1,400	6,389
1990	3,825	1,721	170	1,425	7,141
1991	4,037	2,095	205	1,800	8,137
1992	4,360	2,409	218	1,900	8,887
1993	4,530	2,302	230	1,800	8,862
1994	4,579	2,055	254	1,690	8,578
1995	4,572	1,960	252	1,450	8,234
1996	4,643	1,855	186	1,450	8,134
1997	4,955	1,938	208	1,460	8,561
1998	5,337	1,901	199	1,700	9,137
Totals	80,950	28,295	4,092	26,493	139,830

¹ The AIP was created in 1982. The airport assistance program from FY1971-FY1982 was known as the Airport Development Aid Program (ADAP).

Source: U.S. Congress. Senate Budget Committee [based on Federal Aviation Administration data]. *Financing FAA: Airport and Airway Trust Fund and General Fund Shares*. Washington, The Committee, [1999] 4 p.

Note: During Fiscal Years 1971 and 1972 some trust fund monies were transition funds transferred from the general fund to avoid shortfalls during the trust fund's first years. The FAA data used did not break out the amount of general fund revenues used for these appropriations.

Trust Fund Revenues, FY1971 - FY1998

There is a longstanding debate in the aviation community about the usefulness and/or desirability of user fees as a mechanism for funding the FAA. In 1970 it was decided that a user fee system was desirable for funding the aviation trust fund. This was far from the end of the debate, however. The trust fund has gone through several modifications over the years and on two occasions, 1980-1982 and 1996, disputes over funding and/or programs led to lapses in the operation of the trust fund.

The existing tax system is certainly based on collections from users, but this system is viewed by many observers as a less than perfect proxy for a user fee system. The ticket tax, for example, is collected on the basis of a wide range of fares charged by airlines for what is essentially a standard product, an airline seat. The operating requirements of the air traffic control (ATC) system, however, are based on the movement of aircraft. A 200-seat aircraft and a 20-seat aircraft, operating under positive air traffic control, require a similar level of ATC services, but pay into the trust fund at very different rates.¹⁵ Changes were made in 1997 to create a segment fee in addition to the ticket tax that was intended to address the differential use issue. These changes, however, have engendered at least as much discussion as the predecessor system. It is unlikely, given the bifurcated nature of the aviation industry and its various interests groups that any system could be devised that would satisfy all groups. Hence, it is likely that there will be calls for Congress to revisit the user fee system in the future.

Another long-standing issue surrounding the trust fund is the appropriateness of spending trust fund revenues for FAA operating expenses. The trust fund was originally established as a means of paying for aviation capital needs. Every presidential Administration since the trust fund was established, however, has sought additional O&M funding from the trust fund. As can be seen in Table 7, the general fund share of FAA spending has varied over time, but on the whole, the trust fund share of the overall FAA budget has grown, to the point that it now accounts for approximately 70% of spending in most recent years.

A final, and related issue, is the question of the accumulation of unexpended funds in the trust fund over time.¹⁶ During most of its life the trust fund has had a large unexpended balance. The unexpended balances have several origins, but one of the most important is the annual accumulation of interest to the fund by virtue of the investment of the unexpended balance in U.S. Treasury financial instruments.

¹⁵For a historical perspective on the user fee issue see: U.S. Library of Congress. Congressional Research Service. *Reorganization of the Federal Aviation Administration: Safety and Efficiency Issues*. CRS Report 94-371 E, by John W. Fischer, J.Glen Moore, and Pamela Hairston.

¹⁶For a discussion of trust fund balances and the budgetary treatment of trust funds see: U.S. Library of Congress. Congressional Research Service. *Transportation Trust Funds: Budgetary Treatment*. CRS Report 98-63E, by John W. Fischer.

The temporary expiration of the trust fund in 1996 largely eliminated the unexpended balance. By all predictions, however, the trust fund's unexpended balance is expected to grow dramatically in the next few years unless additional trust fund spending is allocated for capital or operating expenses in the next FAA reauthorization cycle. This new unexpended balance is likely to provide the debating points for those who want more spending on aviation capital activities and for those who wish to see the general fund contribution to aviation reduced.

Table 7. Aviation Trust Fund Revenues, FAA Appropriations, and General Fund Contribution: Fiscal Years 1971-1998 (\$ millions)

Year	FY Trust Fund Revenue	FY Trust Fund Interest	FY Trust Fund App.	FY General Fund App.	Total FAA App.
1971	1,184	0	299	1,207	1,506
1972	1,551	0	1,369	15	1,384
1973	832	0	918	1,170	2,088
1974	840	28	312	1,292	1,604
1975	962	96	285	1,419	1,704
1976	1,215	147	828	1,567	2,395
1977	1,191	194	1,034	1,488	2,522
1978	1,326	219	1,120	1,623	2,743
1979	1,526	282	1,364	1,733	3,097
1980	1,874	400	1,370	1,845	3,215
1981	21	561	1,530	1,815	3,345
1982	133	542	1,593	1,482	3,075
1983	2,165	533	2,755	1,302	4,057
1984	2,499	546	1,814	2,586	4,400
1985	2,851	746	3,658	1,589	5,247
1986	2,736	829	2,444	2,298	4,742
1987	3,060	880	2,593	2,337	4,930
1988	3,189	893	3,356	2,358	5,714
1989	3,665	1,009	3,415	2,974	6,389
1990	3,700	1,245	4,124	3,017	7,141
1991	4,910	1,297	6,103	2,034	8,137
1992	4,644	1,273	6,637	2,250	8,887
1993	3,261	1,040	6,611	2,251	8,862
1994	5,217	837	6,293	2,285	8,578
1995	6,363	757	6,112	2,122	8,234
1996	2,369	759	5,714	2,420	8,134
1997	4,027	481	5,307	3,255	8,562
1998	8,065	543	5,701	3,435	9,136
Totals	75,376	16,137	84,659	55,169	139,828

Source: U.S. Congress. Senate Budget Committee [based on Federal Aviation Administration data]. *Financing FAA: Airport and Airway Trust Fund and General Fund Shares*. Washington, The Committee, [1999] 4 p. Trust fund revenue and trust fund interest data for table 7 were drawn from the following sources: for FY1971 to FY1988, U.S. Congressional Budget Office. *Status of the Airport and Airway Trust Fund: a Special Study*. Dec. 1988. Washington, 1988. p. 12-13.; for FY1989 to FY1998, U.S. Library of Congress. Congressional Research Service. *Transportation Trust Funds: Budgetary Treatment*, John W. Fischer. CRS Report 98-63 E. Updated April 6, 1998. p. 22.; for FY1998 interest, U.S. Office of Management and Budget. *Budget of the United States Government: Fiscal Year 2000: appendix*. Washington, 1999. p. 744.

Note: Transition quarter data for trust fund revenue and interest are included as FY1996 data. During Fiscal Years 1971 and 1972 some trust fund monies were transition funds transferred from

the general fund to avoid shortfalls during the trust fund's first years. The FAA data used did not break out the amount of general fund revenues used for these appropriations. Totals may not add due to rounding.

The National Weather Service (NWS) and Aviation

The National Weather Service (NWS) provides aids to aviation. For example, the NWS provides routine weather forecasts and warnings. The assistance provided by the NWS can be viewed as either direct, in the sense that it provides specific services to aviation, or indirect, because the Service would exist exclusive of the needs of the aviation system. The information on NWS spending is included because it has been an identified item in the FAA budget during much of the discussion period. Expenditures by the NWS totaling \$672,933,000 since FY1977 are shown in Table 8. Additional NWS expenditures detailed in the NWS budget might be construed as aids to aviation by some observers, but are not detailed here.

**Table 8. National Weather Service Expenditures for Aviation
FY1977-FY1998 (\$ thousands)**

Year	Amount	Year	Amount
1977	\$22,516	1989	28,717
1978	23,719	1990	29,583
1979	24,817	1991	32,580
1980	26,507	1992	35,389
1981	26,564	1993	35,596
1982	26,700	1994	50,056
1983	26,700	1995	35,596
1984	27,000	1996	35,596
1985	27,000	1997	35,596
1986	26,796	1998	35,596
1987	30,309		
1988	30,000	Total	\$672,933

Source: For Fiscal Years 1977 through FY1986: The National Weather Service, unpublished data provided July 1988; For FY1987 through FY1998: Federal Coordinator for Meteorological Services and Supporting Research, National Oceanic and Atmospheric Administration. *Federal Plan For Meteorological Services and Supporting Research* [Annual volumes for years 1988 through 1998]. Figure for FY1998 is an estimate.

Summary of Federal Spending on Aviation

In the early years of federal support for aviation most assistance came in the form of designated subsidies to foster the growth of what has become the commercial aviation industry. This was in keeping with the aviation sector's embryonic nature. As the industry has matured, the level and expense of the federal effort has expanded and spending for capital infrastructure and operational activities have become specific components of annual federal budgets.

The debate today is not so much about whether a federal role in aviation is appropriate, which by most accounts it is. Rather the debate is about how to pay for federal programs and who should pay for it. In the first half of this century almost all aviation expenses came from U.S. Treasury general fund. In the trust fund era this

contribution has diminished as designated user fees have provided a majority of direct aviation related funding. The general fund contribution, as discussed earlier, remains significant, and controversial.

As Table 9 demonstrates the federal contribution to aviation has been and continues to be substantial. All forecasts suggest that short of an unforeseen major policy change, the federal financial contribution to aviation activities will increase in the years ahead, not decrease.

Table 9. Summary of Federal Direct Spending on Aviation, 1918-1998

Type of Aid	Estimate
Airmail Operations by Post Office, 1918-1928	\$12,000,000
Airmail Contract Operations, 1926-1930	17,096,464
Airmail Contract Operations, 1931-1934	53,570,447
Airmail Contract Operations, 1935-1938	26,398,568
Airmail Subsidies, 1939-1953	310,890,000
Airline Subsidies, 1954-1984	1,857,992,000
Loan Guarantee Program,, 1958-1983	924,071,228
Essential Air Service, 1979 - 1998	588,165,000
Airways, 1925-1941	111,881,934
Airways, 1942-1970	9,115,210,000
FAA Facilities and Equipment (trust fund), FY1971-	28,295,000,000
FAA Research, Engineering & Development (trust	4,092,000,000
Airports: Federal Work-Relief Projects	157,322,618
Airports: Other aid prior to 1953	402,783,870
Airports, 1953-1970	1,069,372,917
Airports (trust fund), 1971-1998	26,493,000,000
FAA Operations and Maintenance (general fund),	54,941,000,000
FAA Operations and Maintenance (trust fund),	26,009,000,000
National Weather Service, 1977-1987	672,933,000
Total Spending for Aviation, 1918 - 1998	155,149,688,046
Trust Fund Revenues, FY1971-FY1998	75,376,000,000
Trust Fund Interest Revenues, FY1971-FY1998	16,012,000,000
Total Trust Fund Income, FY1971-FY1998	91,388,000,000

Source: Data presented in this report. Totals may not add due to rounding.