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THE NATIONAL AIRPORT SYSTEM

INTERIM REPORT

OF THE

AVIATION SUBCOMMITTEE

TO THE

COMMITTEE ON COMMERCE

UNITED STATES SENATE

ON

EXPLORING THE NEEDS, PROBLEMS, AND MEANS
NECESSARY TO INSURE THE CONTINUED
MAINTENANCE OF AN ADEQUATE
NATIONAL AIRPORT SYSTEM

GOVERNMENT DEPOSITORY

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(II)

LETTER OF TRANSMITTAL

HON. WARREN G. MAGNUSON,
Chairman, Senate Committee on Commerce,
Washington, D.C.

DEAR MR. CHAIRMAN: The following is the interim report of the Subcommittee on Aviation to the Committee on Commerce on the national airport system.

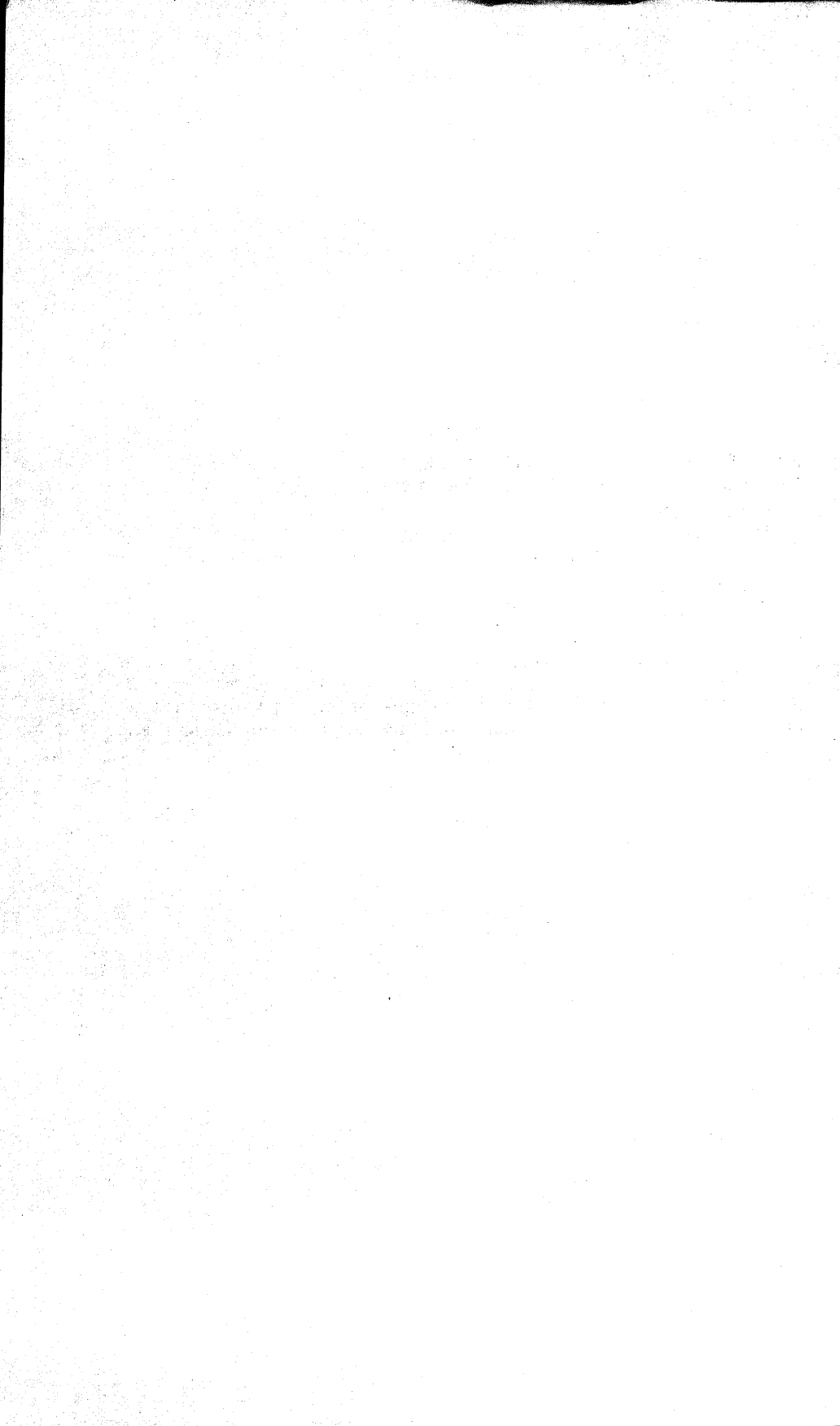
In August 1967 the subcommittee held 4 days of hearings to explore the needs, problems, and means necessary to insure the continued maintenance of an adequate national airport system.

The purpose of this interim report is to present to the full committee a summary of the testimony presented at the hearings, a discussion of the scope and severity of problems confronting air transportation, an analysis of possible solutions, and the tentative conclusions and recommendations of the subcommittee.

Sincerely,

A. S. MIKE MONRONEY,
Chairman, Subcommittee on Aviation.

(III)



THE NATIONAL AIRPORT SYSTEM

INTRODUCTION

This Nation has the finest, safest, most efficient and most widely used airports in the world. This network of over 9,900 public and private airports, comprising the national airport system, has contributed greatly to the unprecedented era of prosperity enjoyed in this country during the past 25 years. It has provided to American business and the traveling public a freedom and ease of movement unknown in the history of man. The national airport system plays a vital part in the defense and security of the country and is utilized extensively by the military.

Anyone who has traveled by air during the past year recognizes, however, that there are serious problems of congestion at many of our Nation's airports which could impede the present and future growth of air transportation and restrict the Nation's mobility to an intolerable extent. The present airport congestion problem is overshadowed by far by the threat of virtual strangulation of these vital arteries of transportation based on the predicted growth in air traffic and the radical changes in aircraft technology that are certain to occur in the next 10 years.

The Federal Government has played an important role in the development of the existing national airport system by providing grants-in-aid under the Federal Airport Act, initially enacted in 1946. Current authorization for grants-in-aid under this act will expire at the end of fiscal year 1970. Serious doubt has arisen since the last extension of the Federal Airport Act about its effectiveness in light of today's traffic and technology and the financial capacity of State and local governments to provide the financial resources for the development of new airports and the improvement of existing airports during the next 10 years. The most recent congressional appropriations for airport development, which have been less than the amount authorized, presage congressional disapproval of appropriations out of the General Treasury for airport development.

To consider the extent and severity of present airport problems and to determine the magnitude of future development needs arising from the tremendous predicted increase in traffic and change in aircraft technology, the subcommittee held 4 days of hearings beginning August 28, 1967. Representatives from all segments of aviation—the users, the operators, the traveling public—and the leading Federal officials responsible for air transportation, the Secretary of Transportation, the Administrator of the Federal Aviation Administration, and the Chairman of the Civil Aeronautics Board, testified before the subcommittee. The purpose of this interim report is to present to the full committee a summary of the views of the various aviation interests, a

discussion of the scope and severity of present and future problems confronting air transportation, an analysis of possible solutions, and the tentative conclusions and recommendations of the subcommittee.

Additional hearings will be necessary to explore in greater detail certain areas where statistical and financial data were lacking. The tentative conclusions and recommendations do not represent in any way the firm or fixed view of the subcommittee, because the presentation of additional facts might warrant substantial change. The subcommittee presents this interim report as a working paper for subsequent hearings to be scheduled as early as practicable and to establish the broad guidelines upon which detailed legislation can be developed this year.

HISTORY OF THE FEDERAL AIRPORT ACT

The Federal Airport Act (Public Law 377, 79th Cong., 60 Stat. 170), enacted in 1946, established a program of Federal aid to provide a system of public airports adequate to meet the needs of civil aeronautics. The act authorized grants-in-aid to State and local governments on a matching basis for the construction, development, and improvement of civil airports. The annual authorization and appropriations have varied and to some extent been uncertain. Despite the vast amount of Federal funds granted, the amount has always fallen short of the demand. The amount available in any one year has never exceeded \$75 million.

During the 1950's, Federal assistance was available for both terminal area development and runway construction. Since 1961 the only items eligible for Federal assistance have been those related directly to safety, such as runway and taxiway construction, land acquisition, and the purchase and installation of safety devices such as high intensity in-runway lighting. Passenger terminal facilities are not now eligible items for Federal grants.

Under this grant program, 2,249 public airports have been developed or improved with the expenditure of almost \$1.2 billion in Federal funds. This has been a significant, but still small, part of the total investment made by State, local, and Federal Governments in the national airport system amounting to almost \$6 billion. The money has been used for the construction and development of small airports in thousands of communities across the country serving general aviation users, as well as for the development of more than 500 airports serving the airlines. Over the last 3-year period, 144 reliever airports have been included in the grant program. This is the result of the \$7 million a year set-aside for such airports which was incorporated in the 1961 extension of the Federal Airport Act. These airports have helped to alleviate the congestion at the major hub airports serving airline passengers.

In fiscal year 1968 the Federal Aviation Administration announced its grants-in-aid program to provide \$70.2 million in matching funds for the improvement of 386 airports. To illustrate the magnitude of demand for Federal assistance the Administration received 778 requests for aid totaling \$339.3 million. Based upon the improbable assumption that only half of the requests for 1968 were absolutely vital, the Federal assistance provided amounted to less than half of

even that amount. And the amount requested was strictly for items eligible under the Federal Airport Act and did not include equally essential and desperately needed terminal area facilities.

The experience under the latest extension of the Federal Airport Act indicates that reliance can no longer be placed upon the appropriations process and the use of general funds, if the Federal Government is to participate to the extent it should in assisting State and local communities to undertake needed airport development. The amount authorized for fiscal years 1968, 1969, and 1970 has been \$75 million annually. The amount appropriated was \$66 million for fiscal 1968, and \$70 million for fiscal 1969. The House Appropriations Committee in its report on the Department of Transportation appropriation for fiscal 1968 stated:

The committee is well aware that the airports in our major cities are growing more and more congested and that this airport congestion is a major factor in the safety and convenience of air travel. Notwithstanding, the committee does not feel that the grants-in-aid program as authorized provides the best means for coping with this problem.

Although significant assistance has been provided to State and local governments for airport development under the Federal Airport Act, the expiration of the act at the end of fiscal year 1970, the low level of funding in previous years, the uncertainties inherent in the appropriations process, the magnitude of future expenditures required, the present demands on the Federal budget which will not abate in the foreseeable future, and the size and prosperity of those who utilize our Nation's airports suggest a change in the nature and amount of Federal assistance for airport development.

FUTURE AIRPORT NEEDS

All the witnesses before the subcommittee agreed substantially on the magnitude and the absolute necessity of future airport development in the United States. By the end of 1973 an additional \$3 billion must be invested in the national airport system. Another \$3 billion will be required by the end of 1975 making a total estimated investment over the next 8 years of \$6 billion. This will require the expenditure of as much money over an 8-year period as has been expended in total during this century for development of the national airport system. This total, of course, includes terminal area and airport access needs as well as runway development.

The present FAA 5-year plan for fiscal years 1968 through 1972 includes development at 548 air carrier airport locations within the United States, 11 of which are new locations. The plan also includes the development of 225 reliever airports around high activity air carrier hubs. The Federal share of this development alone would amount to \$1.53 billion. This does not include the matching funds from State and local governments for runway needs, nor does it include any of the amount that must be spent for passenger handling facilities.

Airport congestion has been and will be caused by the astounding growth in air transportation. During fiscal years 1962-66 the number of passengers enplaned by U.S. scheduled air carriers rose from 66.6 to 114 million, a 71-percent increase. The actual number of passenger-miles flown increased from 42.5 to 76.4 billion. The aircraft fleet has

changed from a predominantly piston fleet to pure jet. Today commercial air transportation accounts for more than 60 percent of the intercity travel by common carrier in the United States. Over 90 percent of overseas passengers traveling to and from the United States move by air. The amount of air cargo carried by U.S. airlines has doubled, rising from 1.6 billion revenue ton-miles to 3.5 billion. At the same time the general aviation fleet has risen from 84,000 to 104,000 aircraft. The number of turbine-powered general aviation aircraft has quadrupled.

This growth is dwarfed by that predicted for the immediate future. Passenger travel will triple within the next 10 years to a total of almost 400 million passengers a year. Air cargo is expected to reach six to eight times its present volume. The air carrier fleet will increase by about 1,000 aircraft and the aircraft types will change radically. The next 10 years will see the advent of the jumbo jets carrying from 350 to over 500 passengers and the introduction of the supersonic aircraft whose speed alone will triple aircraft utilization. The general aviation fleet will double to about 200,000 aircraft in operation within the confines of the United States.

Listed below are some of the charts presented to the subcommittee by the Federal Aviation Administration containing the statistics upon which the FAA forecast has been based. They are conservative estimates and show dramatically the magnitude of the problem facing our airports from anticipated traffic increase alone.

THE NATIONAL AIRPORT PLAN, 1968-72—NATIONAL ECONOMIC INDICATORS

	1965	1970	1975	1980	Percent growth, 1965-80
Population (millions).....	194	206	220	235	21
Gross national product (billions of 1958 dollars).....	614	765	942	1,160	89
Air carrier enplaned passengers (millions).....	95	168	286	482	407
Aircraft operations, FAA tower airports (millions).....	35.6	69.3	113.4	184.6	418
Fuel consumption (billions of gallons).....	4	7.7	12	17	325
Civil aircraft:					
Air carrier.....	2,125	2,540	3,240	3,600	70
General aviation.....	88,742	128,000	166,000	210,000	137
Aircraft production.....	11,050	20,850	26,500	33,500	203

22 LARGE HUB FORECAST OF AVIATION DEMAND

	1965	1980	Percent increase
Aircraft operations (millions).....	20.3	74.6	269
Enplaned passengers (millions).....	69.5	370.6	433
Air cargo tons (millions).....	1.3	19.7	1,377
General aviation based aircraft (thousands).....	20.3	50.3	146

22 LARGE HUB FORECAST OF SELECTED 1980 FACILITY NEEDS

Air carrier:	
Gate positions.....	2,774
Vehicle parking area (square yards).....	11,500,000
Terminal building area (square feet).....	52,300,000
Cargo building area (square feet).....	7,900,000
Aircraft apron area (square yards).....	23,800,000
General aviation:	
Vehicle parking area (square yards).....	3,300,000
Terminal building space (square feet).....	3,500,000
Aircraft apron area (square yards):	
Hangar area.....	22,100,000
Open area.....	45,300,000

The following chart prepared by the FAA for the subcommittee shows the investment that will be required for the development of general aviation airports through the 1978 timespan:

ESTIMATED FUNDING REQUIREMENTS FOR DEVELOPMENT OF GENERAL AVIATION AIRPORTS ¹

Purpose of expenditure	1969-73, estimated requirements ²		1974-78, estimated requirements ³	
	Number of units	Millions of dollars	Number of units	Millions of dollars
1. Construction of new "reliever" airports.....	74	100	150	200
2. Other new airport construction.....	645	200	35	10
3. Development of existing airports.....	1,574	265	750	80
Total.....		565		290

¹ Total construction costs for all types of development presently eligible for FAAP assistance at airports exclusively serving general aviation.

² Recommended development contained in the 1966-67 national airport plan.

³ Preliminary estimate of additional and continuing development needed to meet forecast general aviation growth through 1980.

The funding required for development of air carrier airports will exceed \$5 billion during the same time period. The amount required in the New York City area alone will in all probability exceed three-quarters of a billion dollars. Chicago is planning improvements at O'Hare Airport that will run close to \$300 million and is also considering the construction of a new airport that will cost at least another \$300 million. Dallas and Fort Worth are planning a new \$250-million airport. A new airport at New Orleans will cost almost \$350 million. Los Angeles has a \$500-million airport expansion program. Equally staggering sums will be required for airport development at hundreds of medium- and small-size cities in the United States to cope with existing jet aircraft and the new and larger jets to be put into operation in the next 2 or 3 years.

The introduction of short-haul jets, such as the DC-9, the BAC-111, and the Boeing 737, by the local service airlines has necessitated a new round of extensive runway lengthening and strengthening at the several hundred air carrier airports in smaller communities. The small general aviation airport must also be improved as the business aircraft fleet becomes predominantly turbine powered.

Most of the money that will be needed for development at air carrier airports will be for terminal area needs. The following table contains the best estimate of the Airport Operators Council International as to the amount that will be needed for terminal area development, as opposed to runway construction and improvement:

AOCI AIRPORT FINANCING ESTIMATE (PROJECTION BASED ON SAMPLE)

NEED THROUGH 1973 (67 U.S. MEMBERS)

[In thousands]

	FAAP eligible		Noneligible		Total	
	Amount	Percent	Amount	Percent	Amount	Percent
Large hub (15 of 22).....	\$458,133	25	\$1,404,164	75	\$1,862,297	----
Medium hub (23 of 31).....	197,208	56	153,400	44	350,608	----
Small hub (21 of 34).....	63,202	56	50,544	44	113,746	----
Nonhub (8 of 13).....	17,587	75	5,872	25	23,459	----
Total (67 of 100).....	736,130	31	1,613,980	69	2,350,110	100

PROJECTED NEED THROUGH 1973 (U.S. AOCI MEMBERS—100 AIRPORTS)

Large hub.....	\$690,000	23	\$2,262,000	77	\$2,952,000	----
Medium hub.....	263,000	56	204,000	44	467,000	----
Small hub.....	102,000	57	78,000	43	180,000	----
Nonhub.....	26,000	72	10,000	28	36,000	----
Total.....	1,081,000	30	2,554,000	70	3,635,000	100

PROJECTED NEED THROUGH 1973 (ALL NON-FEDERAL U.S. AIR CARRIERS—525 AIRPORTS)

Large hub.....	\$690,000	23	\$2,262,000	77	\$2,952,000	----
Medium hub.....	280,000	55	227,000	45	507,000	----
Small hub.....	264,000	57	196,000	43	460,000	----
Nonhub.....	750,000	77	225,000	23	975,000	----
Total.....	1,984,000	41	2,910,000	59	4,894,000	100

Unless the terminal areas are expanded and improved they will be the bottlenecks of commercial aviation when the jumbo jets are introduced.

It would not, of course, be proper for the Federal Government to bear the full cost of future airport development. Airport development has always been the primary responsibility of State and local governments and will continue to be so in the future. The best estimate presented to the subcommittee as to the amount of funding that could be provided by State and local governments was \$3½ to \$4 billion of the total anticipated \$6-billion need. This would leave about \$2 billion unfunded for which Federal assistance of some form will be required.

These amounts are needed for airport development alone and do not include money that will be required for the installation of airport control towers, instrument landing systems, terminal area radars, en route traffic control centers and other parts of the national airways system which are funded 100 percent by the Federal Government out of general funds. These additional aviation needs are mentioned to illustrate the immensity of the investment that will be required within the next 10 years to maintain a system of airports and airways adequate to meet the needs of commerce and the traveling public.

CURRENT AIRPORT CONGESTION

The so-called airport problem consists of two parts: (1) current airport congestion for which additional airport construction and development, even on a crash basis, is no solution; and (2) future airport congestion for which the solution is the construction of new airports and the improvement and expansion of existing airports to cope with predicted traffic levels and types of aircraft that will be flying in the mid-1970 time period.

Even if the Congress authorized a massive program of Federal matching funds to assist States and local communities to construct new airports, our existing airport congestion would grow to crisis proportions before the first new airport could be put into operation. The delays that are necessarily entailed in the planning, financing, and construction of new airports will cover a period of 5 to 10 years. It takes that long to put a major new airport into operation. Thus, no matter how massive a program of airport development is undertaken, it will not alleviate the immediate congestion problems confronting the American public in trying to travel from one destination to another.

There is severe congestion existing today, in the air, on the runways, in the terminals, and in the ground approaches to the airports. Other ways must be sought to alleviate this congestion at and around our Nation's airports. These solutions entail better utilization of existing airport facilities and impinge to some extent upon the virtually unlimited access which all segments of aviation have at airports today.

This congestion, despite the extensive scare publicity it has received, is prevalent at only a few of the Nation's airports. It exists at the large hub airports which number only 22 out of the 525 which serve the airlines and at some of the medium hubs. But congestion is severest at the airports serving the largest metropolitan areas, such as New York City, Chicago, Los Angeles, and Washington, D.C.

The congestion in the terminals and on the ground approaches to the airports is caused predominantly by the airlines and their passengers. Congestion in the air around airports and on the runways is caused by a combination of general aviation aircraft flying into and out of major hub airports and the peak-hour scheduling practices of the airlines. This congestion can be isolated further to certain periods of time during the day. It is not prevalent around the clock on a 24-hour-a-day basis. Much of today's congestion at the major hub airports can and should be eliminated by a more effective utilization of existing airport facilities.

General aviation

The general aviation segment of the aviation community has been criticized extensively and unfairly during the past year. Newspaper articles and editorials which have appeared decrying airport congestion have laid the blame in large part on general aviation. General aviation has been treated as the black sheep of the aviation community without regard to its importance in air transportation or to the rights of general aviation users to utilize the airways and airports equitably with commercial aviation.

It is true that severe congestion exists at major hub airports, due in part to the increasing use which small, general aviation aircraft make of them. But this is an isolated problem for which specific solutions must be sought. Any broad, nationwide attempts to restrict or constrain general aviation movements would be unfair and unreasonable and go far beyond the measures necessary to cope with the problems caused by general aviation aircraft at the major hub airports.

Better utilization must be achieved at these major hub airports. This will entail restrictions and constraints upon the hitherto unlimited access which general aviation aircraft have had to these airports. At those airports where general aviation aircraft contribute substantially to the congestion in the airways around the airport and on the

runways, steps must be taken to spread the flow of traffic over a longer period of the day and to apportion the use of these airports between commercial and general aviation on a basis other than first come, first served.

The ideal and ultimate solution is the provision of separate and equal airport facilities for general aviation in the major hub areas. This concept was embodied in the 1961 extension of the Federal Airport Act by providing for a \$7-million annual set-aside for construction of reliever airports. These reliever airports have not been equal or adequate in the sense that convenient ground transportation and navigational aids have not been provided. Satellite airports are the long-term answer to the problems in areas where there are substantial movements of general aviation and commercial aviation aircraft.

For the short term other suggestions have been made as to ways to alleviate existing congestion. The Secretary of Transportation mentioned the imposition of higher airport charges during peak hours, which would work to discourage both general aviation and commercial aviation use of airports during peak hours. The immediate improvement of existing reliever airports through provision of convenient ground transportation and installation of instrument landing systems, control towers, and radars is another short-term method that could be used to alleviate the congestion at major hubs.

Some airport authorities are considering the imposition of peak-hour restrictions on general aviation during certain periods of the day which would limit use of the airport entirely for commercial aviation purposes at those times. Proposals have been made to require higher qualifications for general aviation pilots flying into major hub areas and to require better navigational instrumentation and radio equipment on board general aviation aircraft.

In fairness to the general aviation community, it has recognized the existence of a congestion problem at the major hub airports due to general aviation operations. Various solutions have been proposed by general aviation to alleviate this congestion, such as —

1. The construction of shorter, parallel runways at existing airports for exclusive general aviation use.
2. The establishment of separate radio frequencies within airport control areas for general aviation aircraft.
3. Separate approach and departure routes and altitudes for general aviation aircraft.
4. The dissemination of better and more accurate information by the FAA in the Airmen's Information Manual to enable general aviation pilots to utilize airports more safely and effectively.
5. The improvement of existing reliever airports to permit all-weather operations.
6. The improvement of ground transportation facilities from these airports to the downtown area.

All of these suggestions should be considered carefully. Many of them require action by the local community or airport authority. None of the suggestions should be precluded. But it is important that the remedy for the problem at a particular airport not go beyond what is required to solve that airport's problem.

The subcommittee will explore this aspect of the current airport congestion problem at its subsequent hearings and will welcome further testimony from those persons that would be affected by the various solutions proposed. There can and must be achieved a better utilization of the existing airport system even though it may require a break with past traditions or philosophies about the free and unlimited access to airports. The cost of an airport development program based on free and unlimited access to all airports by all segments of aviation would far exceed the price that State, local, and Federal Governments can or will pay. Better utilization of existing airports and construction of separate and equal general aviation airports at substantially smaller cost is a more reasonable and desirable course.

Commercial aviation

A major portion of the runways and, particularly, the terminal area congestion at large and medium hub airports results from the scheduling practices of the commercial airlines. The airlines bunch their flights in the early morning and late afternoon hours and thus bring upon themselves much of the congestion that occurs. Passengers prefer to depart and arrive during these periods of the day which accounts for most of the flights being scheduled at those times. But when the cost of constructing new airport facilities to meet peak-hour requirements reaches the magnitude mentioned previously in this report, there are valid reasons for setting limits upon passenger convenience.

Current airline schedules at major hub airports border on the absurd. In many airports there are as many as 10 or 15 scheduled departures all leaving at the same time and as many arrivals scheduled for the same minute of the day. These practices result in an underutilization of existing airports. If planning for new airports is based on achieving maximum peak-hour capacity, then money is wasted because the facilities are not used sufficiently during other times of the day. A balance must be struck between the convenience of passengers and the massive cost to State, local, and Federal Governments to provide terminal area facilities adequate to cope with the sudden surges of traffic at peak hours.

The Secretary of Transportation in discussing this aspect of the airport problem offered the following comments:

I do not think the possibilities of spreading out the schedules of the scheduled air carriers have been given enough attention. Perhaps we could move some of the peak-time flights to other times. I believe that it is very possible by now that the average air passenger will be quite ready to consider a flight at an odd hour if he can avoid the aggravation of trying to move during the conventional hours. There are incentives that might be offered which help to influence his choice. Cheaper air fares for off-hour travel, for example. Airport operators might try offering incentives to both air carriers and general aviation to use airports less at peak hours, by raising airport charges for services provided during peak hours, and lowering them during the off-hours.

Measures such as these can be initiated by the local airport authorities or the airlines. The airlines should effect voluntary changes in scheduling practices to alleviate the congestion that occurs during peak hours.

The Civil Aeronautics Board in the exercise of its regulatory authority can act to alleviate congestion at airports. The Board in its route cases can authorize direct or through service between points, thus making it possible to bypass congested transfer airports where it has previously been necessary to stop to make connections or to satisfy mandatory certificate requirements. The Board can authorize additional service to smaller airports near major congested hubs where adequate traffic potential justifies direct service to other points.

The Board has recently initiated several cases that could prove to be of major significance in terms of the effective utilization of existing airports and the alleviation of airport congestion. One such case is the Washington-Baltimore area investigation which will explore ways to relieve the serious congestion at Washington National Airport, to distribute more equitably the airline service between the National Capital's three major airports and to provide convenient air service for this area's residents. The Board has also instituted an investigation with respect to the feasibility of using V/STOL aircraft in the northeast corridor from Boston to Washington. The extensive use of STOL aircraft for short-haul flights in the northeast corridor would dramatically reduce the runway and airway congestion that exists today. The transatlantic route investigation is another example of the Board's initiative in seeking to provide better airline service for the American public and to alleviate the congestion that is so severe in the New York City area. The Chairman of the Civil Aeronautics Board stated in the hearings that only one-third of the transatlantic passengers today actually originate or terminate in New York City. Additional investigations such as these could possibly result in substantial alleviation of the congestion that exists at other airports such as Chicago, Los Angeles, Washington National, and Atlanta. They certainly offer a sound alternative to the expensive and wasteful course of constructing new airports in these major metropolitan areas for predominantly transfer traffic.

The Board should continue to explore ways to alleviate congestion at airports, because this involves adequacy of commercial airline service just as much as the type of equipment used or fares charged. The Board should review airline scheduling practices to determine whether airport congestion can be alleviated by spreading airline schedules outside of peak hours.

The most efficient utilization of jet aircraft is responsible for part of the peak-hour scheduling practices of the airlines and may inhibit radical changes in airline scheduling practices. But somehow the more efficient utilization of existing airports must be factored into whatever equation the airlines use in determining efficient utilization of aircraft. If airport delays are costing the airlines millions of dollars a year, it would be in their interest to help alleviate the delays by better airport utilization.

The Board must also consider whether it should have specific statutory authority over the scheduling practices of the airlines. The subcommittee will consider this specific point at its hearings and expects the Board to address itself to the need for this regulatory authority.

FUTURE AIRPORT DEVELOPMENT

To prevent future airport congestion that could impede not only the growth of air transportation, but restrict the growth of the national economy itself, planning and construction must begin immediately for new airports and for the improvement and expansion of existing airports. No existing airport is equipped to handle the deluge of passengers that will debark from the Boeing 747 in early 1970 or from a commercial version of the C5-A in the mid-1970's if that aircraft should be developed.

Ten years from now more than 1 million passengers a day will be boarding the commercial airlines of the United States. The number of general aviation aircraft will almost have doubled. These two statistics alone justify the conclusion that substantial airport development, both commercial and general aviation, must occur.

Although the State and local communities will continue to provide the major share of funds for airport development, there is a definite Federal responsibility to assist State and local governments in this massive development activity.

Financing the national airport system

The subcommittee has reached some tentative conclusions concerning ways to finance future development of the national airport system:

1. An airport trust fund, similar in nature and operation to the successful highway trust fund, must be established to provide adequate and certain funding for airport development.
2. User fees must be imposed on commercial aviation and general aviation to raise funds adequate to finance the Federal share of anticipated airport development cost.

Because aviation is no longer a fledgling industry in need of Government protection to nurture its growth and because of more urgent demands on the Federal dollar, it is no longer feasible to fund the grants-in-aid program under the Federal Airport Act by appropriations from the General Treasury. Even if this method were continued, the amount of appropriations that would in all probability be allocated to the program would fall far short of the sums needed. The history of appropriations under the Federal Airport Act during this decade is persuasive evidence of this.

Trust fund financing of airport development would provide a reasonably certain amount each year and an amount adequate to meet the Federal share of airport development costs. Although the construction of the Interstate Highway System out of the highway trust fund has not proceeded exactly as planned, great progress has been made, which otherwise would not have been made under any other form of financing. Trust fund financing would enable the airport operators, who must construct the airports, and the airlines, who operate into them, to plan their capital investments with greater care and prudence. From the Federal Government standpoint its share of airport development costs would no longer be a direct drain on the Treasury or on the general taxpayer, who does not receive any special benefit from the national airport system. The principle that the user should pay for special benefits or facilities made available to him is a sound one, especially in

light of the stature and prosperity of both commercial and general aviation. The extra convenience and safety these users would derive from an adequate airport system would more than offset the added cost to them of the user fee.

There should be imposed some form of user fee or charge on both commercial aviation and general aviation. The revenues derived would go into the airport trust fund and should be available for the development of both commercial and general aviation airports. Because military use of civil airports is substantial, there is justification for continuing to appropriate some money from the General Treasury for airport development. An annual appropriation into the airport trust fund to reimburse the fund for military use of civil airports is one method the subcommittee will consider. A formula must be devised to determine the appropriate contribution that should be made from general tax funds for the military's actual use of civil airports and for the value to the Nation of having a modern system of civil airports available in national emergencies.

Although the major share of the funds will be required for development at air carrier airports, there must be set aside an adequate sum to be spent only for general aviation airport construction and improvement. General aviation airports fall into two categories. One is the so-called reliever airport located in or near major metropolitan areas which provide general aviation aircraft an alternative to flying into the busy and congested air carrier airport. The reliever airport alleviates congestion problems substantially and thus is a benefit not only to the general aviation user, but also to airlines and airline passengers. The purely general aviation airport is one that serves only general aviation and does not qualify as a reliever airport. This type of airport constitutes almost all of the Nation's 3,700 public airports and all of the Nation's 6,200 private airport facilities.

General aviation should be charged a fee adequate to cover the Federal share of developing purely general aviation airports. The cost of developing reliever airports, however, should not be imposed entirely on general aviation. Because of the substantial benefits that flow to the airlines and its passengers, they should bear a substantial part of the cost of these airports. This share should be reflected in the amount of any set-aside made out of the trust fund for general aviation airport development. The subcommittee will explore this further at the subsequent hearings, but it would appear at this time that approximately 15 percent of the trust fund money should be devoted to this purpose. General aviation should contribute also to the cost of air carrier airport development, but only for facilities needed and used by general aviation.

The remainder of the trust fund would be available for development of air carrier airports. This money would go to State and local governments as grants on a matching fund basis. The amount of Federal grant should be at least 50 percent of the development cost. Whether or not it should be higher will be determined by the subcommittee after further hearings. The FAAP program has operated on a 50-50 matching fund basis, except for specified safety aids. More persuasive evidence as to State and local governments' inability to finance up to half of the cost of this development will have to be presented to the subcommittee, before it would be justified in varying from the 50-50 matching fund formula contained in the existing Federal Airport Act.

There is a serious question whether trust fund money should be made available for terminal area development, because of Congress' previous action in making terminal area development ineligible under the Federal Airport Act. The proportion of funds needed for this type of development is so huge in relation to runway development needs at air carrier airports that terminal areas may require Federal assistance also. This is one of the main issues the committee will want to consider at its hearings.

Direct or guaranteed loans for airport development are an alternative means of Federal assistance. A loan program might be incorporated into the trust fund concept for terminal area development. A portion of the trust fund could be set aside to establish a revolving fund out of which loans could be made to State and local governments for terminal area development. The revolving fund could be replenished each year out of revenues derived from the user fees. Although the committee is aware that a loan program of any sort presents difficulties for the airport authorities, particularly the types of loans that have been proposed recently, the subcommittee will want to explore this in much greater depth. Federal loan programs have worked successfully in many other fields and the subcommittee is not at all convinced that some form of loan program cannot be devised which would be of substantial benefit to local airport authorities.

One of the difficulties confronting the subcommittee in determining what the appropriate Federal share should be and the type of Federal assistance that should be rendered is the extreme dearth of information concerning the financial condition of the Nation's airports. Federal assistance should be limited to that amount which is in excess of the financial resources of these airports. But the committee was presented with no information from which it could determine the financial condition of the Nation's airports, especially the 22 major hub airports. These airports have a substantial revenue generating capability because of the tremendous traffic that will occur. Also, many of these airports can derive additional funds out of general obligation bonds. The medium hub airports and the small hub airports are in a different category with respect to revenue generating capacity, because the airline traffic at these points may not be adequate to pay the substantial debt service on revenue bonds. The extent to which money could be raised through general obligation bonds is probably also limited. But the subcommittee has no means of determining what the financial capacity of the airports is. No intelligent determination of the appropriate Federal share can be made without this information.

There is another factor which must be given great weight in deciding the amount and nature of Federal assistance. That is the sudden surge of capital required over the next 8 to 10 years for airport development. There is some doubt that this quantity of money will be available on the private bond market if all airports seek to raise it at the same time. This could present problems for the airports in the major metropolitan areas, even though their revenue generating capability is sufficient to pay off revenue bonds over a long period of time. The subcommittee will explore this factor in much greater detail. The subcommittee expects to receive testimony from witnesses familiar with the private bond market to help determine the amount of private bond money that will be available and the airports that might have

sufficient revenue generating capacity to finance the bulk of their needs through revenue bonds.

Type of user fees

The most difficult question to resolve is the exact type and nature of user fees to be imposed on the various segments of aviation. There are several ways in which the money needed can be raised. The subcommittee has not decided exactly what user fees should be imposed. But any fee that is imposed must be fair and reasonable to all segments of aviation, generate enough funds to cover the Federal share of airport development, and have some direct relationship to the use made of airport facilities by the different aviation segments.

Revenue can be raised from the commercial aviation segment through a fixed passenger tax, an increase in the passenger ticket tax, a tax on all commercial aviation fuel, or a combination of two or more of these fees. Listed below are tables showing the amount of anticipated revenue that could be derived from each of these user fees.

\$1 PASSENGER TAX

Year	Passenger originations ¹ (U.S. domestic, in millions)	Year	Passenger originations ¹ (U.S. domestic, in millions)
1968.....	\$117.2	1973.....	\$190.4
1969.....	126.9	1974.....	212.0
1970.....	138.7	1975.....	237.4
1971.....	153.6		
1972.....	170.6	Total.....	1,346.8

¹ Based on FAA forecasts of enplanements adjusted to originations on basis of historical relationship of enplanements to originations.

2-PERCENT TICKET TAX

Year	Amount (in millions)	Year	Amount (in millions)
1968.....	\$83,262	1973.....	\$158,913
1969.....	94,753	1974.....	180,844
1970.....	107,496	1975.....	205,800
1971.....	122,709		
1972.....	139,643	Total.....	1,093,420

2-PERCENT DOMESTIC TICKET TAX AND \$2 INTERNATIONAL PASSENGER TAX

(In millions)

Year	International passengers departing United States ¹	Head tax ²	2-percent ticket tax	Total tax
1968.....	6,388	\$12,776	\$83,262	\$96,038
1969.....	7,155	14,310	94,753	109,063
1970.....	8,014	16,028	107,496	123,524
1971.....	8,976	17,952	122,709	140,661
1972.....	10,053	20,106	139,643	159,749
1973.....	11,259	22,518	158,913	181,431
1974.....	12,610	25,220	180,844	208,664
1975.....	13,833	27,666	205,800	233,466
Total.....	78,288	156,576	1,093,420	1,249,996

¹ International passengers departing United States obtained from U.S. Department of Justice, Immigration and Naturalization Service, "Report of Passenger Travel Between the United States and Foreign Countries," projected at the rates of 112 percent for years 1967-74, 109.7 percent for years 1975-80, and 108.5 percent for years 1981-86, with 1966 as base year. (NOTE: The percentages used represent the average growth rate per annum as forecast by the FAA, Lockheed, and the U.S. airlines "D" forecast.)

² Head tax computed at the rate of \$2 for each international passenger departing the United States.

2-CENT-PER-GALLON COMMERCIAL AVIATION FUEL TAX

[In millions]

Year	Tax	Year	Tax
1968.....	\$115.00	1973.....	\$191.00
1969.....	138.80	1974.....	207.80
1970.....	150.80	1975.....	226.60
1971.....	161.40		
1972.....	173.60	Total.....	1,365.00

The \$1 passenger tax and the increased ticket tax would be the simplest user fees to administer and would more fairly represent an airline passenger's use of airport facilities. But neither would generate enough revenues to cover the Federal Government's probable share of airport development costs, especially if terminal area development is included. A combination of the various taxes may have to be adopted and the committee will study proposals along these lines. Too high a fixed passenger tax would adversely affect short-haul air transportation.

General aviation must also contribute to the additional cost of airport development. At the present time there is a fuel tax on aviation gasoline used by general aviation. This does not include, however, jet fuel that is being used increasingly in pure jet and turbine-powered general aviation aircraft. Also, the amount of money derived from this tax goes into the highway trust fund, and is general aviation's contribution to the cost of maintaining and operating the airways system. This would limit the use of this user fee for airport development purposes, but some revenue could be raised by imposing upon general aviation aircraft a straight 4-cent-per-gallon nonrefundable tax on all fuel used in general aviation aircraft, including jets. Half of the revenue could be placed in the airport trust fund for construction of general aviation airports. The remainder would continue to be allocated to offset general aviation's proportionate share of the cost of the airways system. The following table shows the amount of revenue that could be generated by such a tax:

4-CENT-PER-GALLON TAX ON GENERAL AVIATION FUEL

[In millions]

Year	Tax	Year	Tax
1968.....	\$22.4	1973.....	\$32.0
1969.....	24.4	1974.....	34.4
1970.....	26.4	1975.....	36.8
1971.....	28.0		
1972.....	30.0	Total.....	204.4

Additional funds could be raised from the general aviation segment by the imposition of an annual license fee. The amount that could be derived from this source is listed in the table below:

ESTIMATED ANNUAL LICENSE REVENUE FROM FIXED-WING GENERAL AVIATION AIRCRAFT

Year and type of aircraft	Number as of yearend	Assumed annual license fee	Estimated annual license revenue
1968—Single-engine, piston.....	100,000	\$50	\$5,000,000
Multiengine, piston.....	14,650	100	1,465,000
Turbine.....	2,260	500	1,130,000
Total.....	116,910		7,595,000
1969—Single-engine, piston.....	106,100	50	5,305,000
Multiengine, piston.....	15,700	100	1,470,000
Turbine.....	2,900	500	1,450,000
Total.....	124,700		8,225,000
1970—Single-engine, piston.....	112,200	50	5,610,000
Multiengine, piston.....	16,750	100	1,675,000
Turbine.....	3,500	500	1,750,000
Total.....	132,450		9,035,000
1971—Single-engine, piston.....	118,300	50	5,915,000
Multiengine, piston.....	17,800	100	1,780,000
Turbine.....	4,100	500	2,050,000
Total.....	140,200		9,745,000
1972—Single-engine, piston.....	124,350	50	6,217,500
Multiengine, piston.....	18,850	100	1,885,000
Turbine.....	4,750	500	2,375,000
Total.....	147,950		10,477,500
1973—Single-engine, piston.....	124,350	50	6,217,500
Multiengine, piston.....	18,850	100	1,885,000
Turbine.....	4,750	500	2,375,000
Total.....	147,950		10,477,500
1974—Single-engine, piston.....	124,350	50	6,217,500
Multiengine, piston.....	18,850	100	1,885,000
Turbine.....	4,750	500	2,375,000
Total.....	147,950		10,477,500
1975—Single-engine, piston.....	124,350	50	6,217,500
Multiengine, piston.....	18,850	100	1,885,000
Turbine.....	4,750	500	2,375,000
Total.....	147,950		10,477,500

NOTE: Aircraft data are forecast figures taken from "Aviation Forecasts, Fiscal Years 1967-77" prepared January 1967 by the Office of Policy Development, FAA. Aircraft data are for eligible aircraft only.

This user fee would raise \$76,610,000 by the end of 1975. Considering the services that are rendered to general aviation by the Federal Government and the extent of general aviation airport development anticipated in the future, such a charge would be reasonable and fair. In the case of small single-engine aircraft the annual fee would be less than the amount charged by most States for an automobile tag. Such a small charge would not be detrimental to the continued growth of general aviation and would enable that segment to pay a part of the cost of facilities used by general aviation.

The testimony presented at the subsequent hearings should be directed toward the various types of user fees that can be imposed. Fees such as the ones listed above must be imposed on all segments of aviation, if the Nation's airports needs are to be met.

Administration of the airport trust fund

The airport trust fund should be administered by an agency of the Federal Government. Because of the previous experience of the Federal Aviation Administration under the Federal Airport Act, that is the most likely place to vest responsibility for administration of the airport trust fund.

Allocations from the fund should be determined by the agency administering the fund. These allocations should be made on a basis similar to that used to allocate funds under the Federal Airport Act. This would retain in the Government which imposes the user fee the control and responsibility for deciding where the monies raised should be spent. The subcommittee will review the area-population formula contained in the Federal Airport Act to determine whether this method of allocation should be continued. The subcommittee is convinced that control over allocations to communities within a State must be maintained by the Federal Government, if the trust fund is to be administered fairly and if it is to have any substantial relation to the need for airport construction that exists at any particular point in time.

AIRPORT NOISE

Jet aircraft noise at the Nation's airports has become increasingly annoying to persons living around the airports. The noise problem affects airport and runway locations, the flight patterns in and out of airports, and the total amount of airport development cost. The Federal Government's role in the effort to alleviate airport noise has thus far been limited to the expenditure of substantial sums of money for research and development of a quieter jet aircraft engine, noise abatement procedures, and compatible land-use planning.

The subcommittee does not believe the problems relating to airport noise should be intertwined with the question of airport financing. Nor does the subcommittee believe that the Federal Government has any liability for airport noise. The subcommittee prefers to treat this issue separately.

The Secretary of Transportation has recommended legislation to permit the Federal Government to set maximum noise levels at airports and to enforce those standards by regulation. This legislation would also permit the Government to fix the noise level of jet aircraft engines through the certification procedure. This legislation will be considered separately by the subcommittee following the airport hearings. The subcommittee can then determine whether or not this is the proper course for the Federal Government to take.

NATIONAL AIRWAYS SYSTEM

A problem related to airport development is the improvement and modernization of the national airways system, which encompasses the en route air traffic control centers, flight service stations, airport radars, airport traffic control towers, and other navigational facilities manned by the Federal Aviation Administration to assist aircraft in getting to and from the Nation's airports. Substantial capital expenditures must be made over the next 8 years to modernize the national airways system so that it can handle the number and different types of aircraft that will be introduced into the system.

Presently the total cost of acquisition, maintenance, and the operation of the national airways system is borne by the Federal Government. The Federal Aviation Administration is given an annual appropriation to cover this cost. The 5-percent ticket tax imposed on airline passengers and the fuel tax imposed on general aviation fuel is intended to offset to some extent the cost to the FAA of operating this system.

The subcommittee hopes to determine in the subsequent hearings the cost associated with improving and modernizing the national airways system, both in terms of capital expenditures and the cost of annual maintenance and operation. In order to expedite the modernization of the national airways system, the subcommittee believes that the capital acquisition cost should also be financed out of a trust fund such as that envisaged for airport development. Priority should be given to the acquisition and installation of facilities such as airport control towers, instrument landing systems, airport surveillance radars, and approach lighting. This would increase significantly the safety and the utilization of the hundreds of air carrier airports coming into the jet age which do not have these navigational and safety aids.

TENTATIVE CONCLUSIONS

1. The Federal Government has a responsibility to assist State and local governments in the planning, construction, development, and improvement of the Nation's airports. This should take the form of financial assistance to the communities. The national airport system must include not only adequate airports to serve the commercial airlines and their passengers, but adequate and separate airports and runways for general aviation aircraft in metropolitan areas where congestion is a serious problem. These general aviation airports must have the same operational capabilities for all-weather flying as exist at air carrier airports.

2. The Federal share of airport development costs should come from revenues generated by the imposition of user fees on commercial aviation and general aviation of the type and nature discussed in this report. Some contribution should be made from general tax funds for military use of civil airports.

3. An airport trust fund should be established into which the revenues derived from the user fees would be deposited. The funds would be used to provide Federal assistance for a program similar to the existing Federal grants-in-aid program under the Federal Airport Act. The amount of the Federal contribution should be at least 50 percent of the cost of eligible projects. The financing of terminal area development must be investigated further. Consideration should be given to the feasibility of direct or guaranteed loans as a supplement to any grants-in-aid program established and funded out of an airport trust fund.

4. Steps should be taken immediately by local airport authorities and Federal regulatory agencies to alleviate the congestion that exists today at major metropolitan airports caused by extensive general aviation use and peak-hour scheduling practices of the commercial airlines. To a great degree airport congestion occurs because of underutilization of existing facilities.

5. The capital acquisition cost of improving the national airways system should also be financed out of a trust fund supported by revenues derived from user fees with priority given to the purchase and installation of airport-related facilities, such as airport control towers, instrument landing systems, airport surveillance radars, and approach lighting.

6. The Federal Government should continue its research and development efforts designed to achieve a quieter jet aircraft engine, improve noise abatement procedures, and develop more compatible land use around airports. The subcommittee will consider proposed legislation that would extend Federal responsibility to the fixing of noise standards on jet engine manufacture and operations around the Nation's airports.



