

CLASSES OF UNITED STATES COMMERCIAL AIR CARRIERS

There are nine generally recognized classes of operators in the air transport industry of the United States. These classifications are used by the Civil Aeronautics Board in connection with the economic regulation of the industry and under the Federal Aviation Act are based largely on the scope of operations authorized or allowed by that Act. Classes One to Seven have certificates of convenience and necessity authorizing them to conduct regularly scheduled services.

1. **The Domestic Trunk Carriers** include those carriers which presently have permanent operating rights within the continental United States. There are currently eleven trunk lines, most of which operate high-density traffic routes between the principal traffic centers of the United States.

American	National
Braniff International	Northeast ¹
Continental	Northwest
Delta	Trans World
Eastern	United
	Western

2. **The Domestic Local Service Carriers** have, with one exception, been certificated since 1945. These carriers, thirteen in number, operate routes of lesser traffic density between the smaller traffic centers and between these centers and principal centers.

Allegheny	North Central ¹
Bonanza	Ozark
Central	Pacific
Frontier	Piedmont
Lake Central	Southern
Mohawk ¹	Trans-Texas ¹
	West Coast ¹

3. **The Intra-Hawaiian Carriers** operate between the several islands comprising the State of Hawaii.

Aloha	Hawaiian
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4. **The Intra-Alaskan Carriers** provide service within the State of Alaska.

Alaska Coastal	Northern Consolidated
Cordova	Reeve Aleutian
Kodiak	Wein Air Alaska
Howard J. Mays ^{2, 3}	Western Alaska

5. **The Helicopter Carriers** presently operate between airports, central post offices, and suburbs of New York, Chicago, Los Angeles and San Francisco. Originally certificated as exclusive mail carriers they now fly passengers, air freight and air express, in addition to U. S. Mail.

Chicago Helicopter Airways ³	Los Angeles Airways
San Francisco & Oakland Helicopter Airlines ⁴	New York Airways

6. **The International and Territorial Carriers** include all U.S.-Flag air carriers operating between the United States and foreign countries other than Canada, and over international waters. Some of these carriers conduct operations between foreign countries and some are extensions of domestic trunk lines into Mexico and the Caribbean and to Alaska and Hawaii.

Alaska	Northwest
American	Pacific Northern
Braniff International	Pan American
Caribbean Atlantic	Trans Caribbean
Delta	Trans World
Eastern	United
National	Western

7. **The All-Cargo Carriers** operate scheduled flights carrying freight, express and mail between designated areas in the U.S., and in one case to the Caribbean and in another to Europe.

Aerovias Sud Americana ³	Flying Tiger
Airlift International	Seaboard World
	Slick ³

8. **Supplemental Air Carriers.** A class of air carriers now holding certificates issued by the CAB authorizing them to perform passenger and cargo charter services, supplementing the scheduled service of the certificated route air carriers. As of March 1, 1967, there were 13 such companies. Statistical data of these carriers are not included herein.

9. **Intra-state Air Carriers.** A class of air carriers operating as intra-state common carriers, whose operations are limited to an area within the boundaries of a particular state, and whose operating authority is granted by the Aviation or Transportation Board of Control of that state. Statistics for this carrier group are not included in this report.

10. **Others.** Among other classes of operators are the air taxi operators and air freight forwarders. Air taxi operators are a class of air carriers operating light aircraft up to a gross weight of 12,500 lbs., and engaging in a wide variety of passenger and/or cargo transportation services, with no necessarily fixed routes. Air freight forwarders are classified as indirect air carriers and are engaged in the assembly and consolidation of cargo for transportation by a direct air carrier. There are approximately 120 forwarders operating in domestic interstate and foreign and overseas commerce. Statistical data for these groups of carriers are not included herein.

¹ Also certificated to provide trans-border service.

² Certificated non-mail carriers.

³ Scheduled services temporarily suspended.

⁴ Certificated to carry persons, property and mail at a service rate.

AIR TRANSPORT ASSOCIATION OF AMERICA

Twenty-Eighth Edition

Facts and Figures, 1967

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(Revised data filed by the scheduled carriers with the Civil Aeronautics Board are the major source of the statistics.)

Definition of Terms

AVAILABLE TON MILES. Total ton miles of lift capacity available for sale in scheduled and charter service.

PASSENGER OR TON MILE. A passenger or a ton flown one mile.

REVENUE PASSENGER MILES. The number of fare paying passengers flown times the length of trip in miles.

PASSENGER LOAD FACTOR. The percentage of available seat miles actually sold in scheduled service.

REVENUE PLANE MILES. Aircraft miles flown in scheduled service.

REVENUE TON MILES. The ton miles sold in scheduled and charter service. In the construction of this traffic measure passenger miles are converted to ton miles on the basis of about 10 to 1. That is, ten passengers with allowable free baggage are accepted as equalling one ton.

TON MILE LOAD FACTOR. Percentage of available ton miles sold in scheduled and charter service.

U. S. MAIL TON MILE. A ton of mail flown one mile. The mail figures are in two categories: Priority and Non-Priority. Priority mail includes letter mail and air parcel post. Non-Priority mail is first class mail that moves by air and is being flown on an experimental basis between selected cities.

NET OPERATING INCOME. The total operating revenue from air transportation services less the operating expenses (see definition of Operating Expenses). Net Operating Income is before taxes and interest charges and does not include non-operating items.

NET PROFIT OR LOSS. Net income after Federal income taxes, special items and non-operating income or loss.

OPERATING EXPENSES. The expenses incurred in the conduct of the business except for such items as debt financing and other non-operating items.

PUBLIC SERVICE REVENUES. Payments by the Federal Government to insure air service to communities in the United States which could not otherwise afford it.

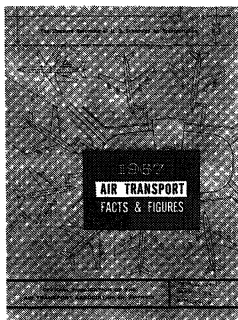
PROFIT MARGIN ON SALES. Net profit after interest and after taxes as per cent of operating revenues.

RATE OF RETURN ON INVESTMENT. Total return, i.e., net profit plus interest paid on long-term debt, as per cent of average investment. Average investment is the average of total net worth (stockholders' equity) plus long-term debt at the beginning and end of each year.

As used in this report, rates of return for 1965 and 1966 reflect net profit before tax reductions resulting from the investment tax credit, in accordance with the methodology of the CAB.

THE COVER:

The theme of 1967 FACTS & FIGURES—planning for the 1970's—is illustrated by this section taken from a blueprint for new facilities at a major U. S. airport.



1966 AT A GLANCE

Traffic, Financial and Service Summary For the United States Scheduled Airline Industry

	1966	1965	% Change over 1965	1956	% Change 1966 over 1956
TRAFFIC					
Passengers (000).....	109,387	94,662	15.6	46,005	137.8
Passenger Miles (000).....	79,889,245	68,676,547	16.3	27,624,799	189.2
Freight Ton Miles (000).....	2,050,737	1,730,294	18.5	451,001	354.7
U.S. Mail Ton Miles (000).....	750,518	482,978	55.4	152,359	392.6
Express Ton Miles (000).....	99,690	89,859	10.9	52,966	88.2
Cargo Ton Miles (000).....	2,900,945	2,303,131	26.0	656,326	342.0
Total Revenue Ton Miles (000).....	12,440,744	9,895,082	25.7	3,618,636	243.8
FINANCIAL					
Total Operating Revenues (\$000).....	5,734,837 ^P	4,957,859	15.7	1,897,867	202.2
Total Operating Expenses (\$000).....	4,962,400 ^P	4,285,773	15.8	1,762,977	181.5
Net Operating Income (\$000).....	772,436 ^P	672,086	14.9	134,890	472.6
Net Profit or Loss (\$000).....	427,572 ^P	367,783	16.3	79,662	436.7
Rate of Return on Investment.....	11.1% ^P	12.0%	—	8.9%	—
Profit Margin on Sales.....	7.5% ^P	7.4%	—	4.2%	—
SERVICE					
No. of Carriers.....	49	49	—	55	—10.9
No. of Aircraft in Service.....	2,022	1,896	6.6	1,723	17.4
Fastest Cruising Speed (mph).....	625	625	—	350	78.6
Plane Miles Flown (000).....	1,482,486	1,353,499	9.5	869,314	70.5
Available Seat Miles (000).....	137,844,486	124,328,049	10.9	43,674,470	215.6
Average No. of Scheduled Daily Flights.....	11,982	11,500	4.2	9,570	25.2
No. of Points Served ¹					
Domestic.....	527	544	—3.1	548	—3.8
International.....	159	161	—1.2	165	—3.6
Route Miles Served					
Domestic.....	278,663	280,696	—0.7	253,587	9.9
International.....	365,067	340,950	7.1	289,939	25.9
No. of Employees.....	244,038	210,795	15.8	131,503	79.4
Average Annual Wage (\$) ¹	8,596	8,328	3.2	5,370	53.5
Total Payroll (\$000).....	2,097,582	1,755,401	19.5	706,063	175.5

^P Preliminary

¹ Many points serve more than 1 city. Does not include Alaskan points.



STUART G. TIPTON
President
Air Transport Association
of America

HOW THE AIRLINES ARE CONTRIBUTING TO ECONOMIC STABILITY

■ The airlines have not only become an important and dynamic new force in the U. S. economy, they are using that force to combat the twin national economic evils of inflation and deflation. In so doing, the airlines are helping to meet the national economic goals set forth by the President.

The government is concerned about holding the line against rising prices in many sectors of the economy, while undertaking special measures to forestall a downturn in industrial activity, particularly in business investment. The President has said that "efforts of the government alone will not be enough. The cooperation of business and labor is essential for success."

The programs and policies of the scheduled airline industry are in harmony with these goals. Today, the airlines are embarked on a long-term investment program which in many respects is unmatched in American industry.

This year, capital outlays for flight equipment and related facilities will reach an all-time high of more than \$2 billion. In the five-year period 1966-1970 the planned outlays of the industry are expected to reach over \$8 billion and for the ten-year period 1966-1975 will be more than \$18 billion.

The expansion program in 1966 alone created 33,000 new jobs. This is a one-year net gain of 16 per cent in total airline personnel and is the equivalent, in terms of employees, of starting up one of the largest airlines in the world.

One of the most striking characteristics of the airlines' new investment program is that these expenditures work their way throughout the entire U. S. economy and serve to stimulate business activity nationwide. Current and future equipment has become so complex that parts and suppliers for the aircraft are found in every

region and almost every state. Machine shops in villages in Maine and small family-owned businesses in such non-industrial states as Wyoming are all part of the new Civil Jet Age.

In addition, the extraordinary traffic growth of the last three years and the prospect of doubling current traffic levels in five years, and trebling them in ten years, has spurred a whole new round of airport construction and improvement programs. These airports are expanding in all parts of the country and are providing new jobs and new business opportunities for thousands of men and women.

The large-scale investment program of the airlines is part of a determined effort not only to meet their service obligations to the traveling and shipping public but to do so in a manner which counteracts steadily rising costs. The operating economies and productivity of continually improved jet aircraft, the introduction of efficient supporting ground systems, and the willingness of the carriers to bear unprecedented burdens of financing the required investment have paid off in making it possible not only to maintain but to reduce the price of air travel.

Average air fares per passenger mile have dropped more than three per cent in the last year alone. Largely through the operation of the variety of promotion and discount fares available, air travelers since 1962 have saved more than one-half billion dollars.

The airline industry has necessarily devoted strenuous efforts to assuring that the public receives the most advanced and most efficient commercial air transportation in the world. It has successfully coped with the multiplicity of financial, operational and technical problems inevitably associated with extraordinary and rapid growth. The airline industry will continue to recognize its responsibility for contributing to the achievement of national economic stability.

A handwritten signature in dark ink, appearing to read "S. G. Tipton". The signature is stylized and fluid.

AIR TRANSPORTATION'S RESPONSIBILITY

MEETING TODAY'S DEMAND
AND PLANNING FOR
EVEN GREATER DEMAND
IN THE FUTURE

■ The air transportation industry in the mid-1960's faces the dual public service responsibility of meeting currently the demands of air travelers and shippers, which have ballooned dramatically in the last several years, and of preparing for a further surge of demand which is expected to double in five years and triple in ten.

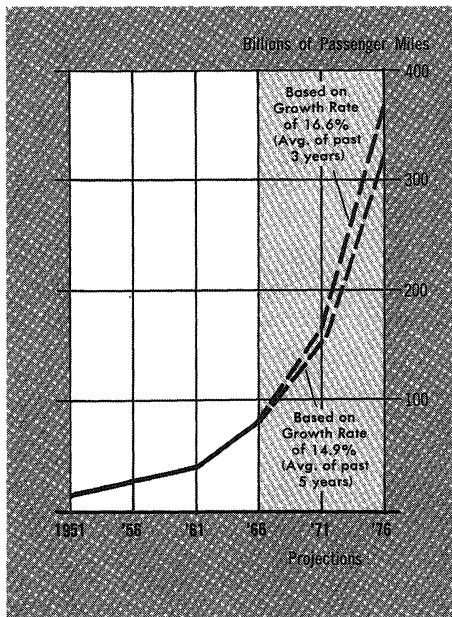
The increasing responsibilities of public service have been brought about by the revolution which has been occurring in the transportation pattern in the United States. This travel revolution has been characterized by a steadily increasing shift in passenger traffic from surface to air transportation—to the point where by last year more than two-thirds of all public intercity passenger transportation was provided by the airlines—and by a major breakthrough in air cargo movement made possible by the availability of jet aircraft for freight traffic.

The strong trend toward air travel has been accelerated by the airlines' own improvement program of the last decade which has included doubling of aircraft speeds, enormous expansion of the number of available flights and of fast service, greater passenger comfort and convenience, and an efficiency and reliability of operation which has been the hallmark of the turbine-powered aircraft. At the same time that the airlines have expanded and improved their product, they have been able to absorb the increased costs arising from general inflation and to offer the public a continually lower pattern of fares.

More individuals are traveling today than ever before, and they are traveling more frequently and, on the average, for longer distances.

Accompanying the emergence of the airlines as the prime mover of persons between cities has been a great broadening in the market base. A recent public opinion research survey, for instance, indicates that 42 per cent of the adult population has now flown, compared with only ten per cent ten years ago.

PROJECTIONS OF
PASSENGER TRAFFIC
U.S. Scheduled Airlines



1966 A Peak Traffic Year

1966 set records in every category of traffic. The highlights:

- PASSENGER. Revenue passenger miles were 80 billion, 16 per cent more than 1965. The number of passengers, topping 100 million for the first time, increased to nearly 110 million, 16 per cent more than the year before.
- CARGO. Cargo ton miles were up 26 per cent. The component breakdown showed air freight up 18.5 per cent to 2.1 billion ton miles; U. S. mail up 55.4 per cent to 783 million ton miles and air express up 10.9 per cent to almost 100 million ton miles.

On an over-all basis, the demand for passenger and cargo transportation increased 26 per cent, as measured by revenue ton miles. Traffic would have been even higher had it not been for a strike by the International Association of Machinists against five trunk airlines. The strike lasted for 43 days and resulted in a loss of an estimated 3.7 billion passenger miles to the domestic industry. The strike also resulted in a net loss to the 5 struck carriers of more than \$270 millions in revenues.

Investment Outlays Increased

The reaction of the airlines to their mounting public service responsibilities occasioned by the unprecedented growth of air traffic has been most conspicuous—and most crucial—with respect to investment outlays.

At the beginning of 1956, at the threshold of the jet era, the total cost of aircraft equipment in scheduled service was about \$1 billion. Five years later, the total had risen to about \$3 billion. At the beginning of 1966, despite large scale retirements of piston and turboprop aircraft, the total cost of equipment in operation had reached about \$5 billion. Present estimates are that the cost of new equipment which will be added to the fleets during the ensuing five years, 1966-1970, will aggregate at least \$7 billion and the expectations will be that the rate of equipment investment will continue to rise in subsequent years.

In the year 1966, the airlines took delivery of 297 jet and turbo-prop aircraft valued at about \$1.5 billion—almost twice the level of the previous record volume of such spending which had been achieved only the year before. In the current year, a further substantial increase in the volume of airline capital expenditures is in prospect with the total of 346 aircraft valued at \$1.9 billion now scheduled for delivery in 1967. The 1966-1970 aircraft delivery program:

Year	Aircraft	Value
1966	297	\$1.5 billion
1967	346	1.9 "
1968	259	1.5 "
1969	50	.4 "
1970	56	1.3 "

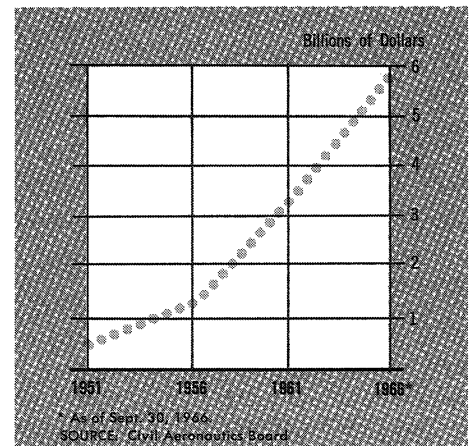
The table reflects only aircraft orders as of December 31, 1966. In the first three months of 1967, airlines placed orders for additional aircraft to be delivered in 1968, 1969 and 1970.

In addition to equipment outlays, capital expenditures for new and enlarged ground facilities will bring the total projected capital expenditures over the next five years to over \$8 billion under existing commitments. Present indications are that in the subsequent five years, 1971-1975, an additional \$10 billion or more will be spent by the airlines on equipment and facilities, bringing the total for the ten years to well over \$18 billion.

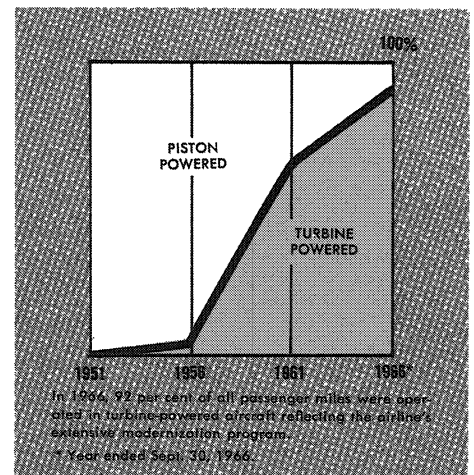
Implications of Airline Investment

The large-scale investment response of the airline industry to the rapidly growing needs of the public for more and better air service reflects favorably upon its readiness and willingness to undertake the necessary risks and burdens inherent in a high level of public service performance. The record level of investment outlays by the airline industry expected this year will make a particularly important contribution to the stability of the national economy at a time when investment in plant and equipment by industry generally has fallen off. The sustained volume of capital spending planned by the airlines over the next few years, coupled with the sharp increase in new personnel hirings expected, will continue to provide an important stimulus and support to the achievement of high levels of national economic activity and employment in the future.

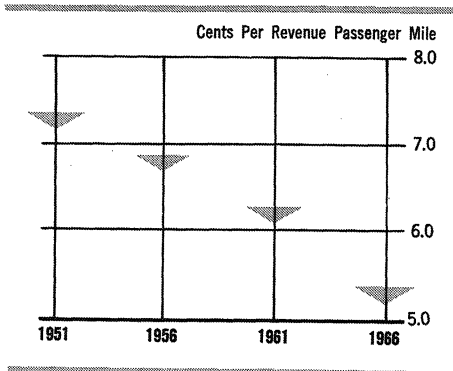
**GROSS INVESTMENT IN OPERATING PROPERTY AND EQUIPMENT
U.S. Scheduled Airlines**



**GROWTH OF JET SERVICE
U.S. Scheduled Airlines**



DOWNWARD TREND OF REVENUE PASSENGER MILE YIELDS
Scheduled Service—U. S. Flag Carriers
International and Territorial Operations



A major challenge to airline industry management in the last few years of extraordinary expansion has been not only to obtain the necessary new capital and to recruit and train the necessary new personnel, but also to utilize these capital and labor resources in an increasingly efficient manner under the stresses and strains inevitably occasioned by explosive growth. The success of the industry in meeting this challenge has been evidenced by the continuing decline which has been achieved in unit costs. Despite steadily increasing wage and other costs, operating expenses per revenue ton mile declined from 56¢ in 1961 to 40¢ in 1966.

Year	Operating Revenue (\$000)	Rev. Ton Miles Flown (000)	Revenue Per Ton Mile	Operating Expense (\$000)	Expense Per Ton Mile
1956	1,897,867	3,618,636	52.4¢	1,762,977	48.7¢
1961	3,063,555	5,394,631	56.7	3,043,496	56.4
1962	3,438,731	6,238,261	55.1	3,248,732	52.0
1963	3,759,051	6,860,302	54.7	3,479,264	50.7
1964	4,250,838	8,015,951	53.0	3,780,741	47.1
1965	4,957,859	9,895,082	50.1	4,285,773	43.3
1966	5,734,837	12,440,744	46.1	4,962,400	39.9

Managerial skill in controlling costs has been immeasurably aided by the airline investment policy of increasing substantially the ratio of capital to labor employed as well as by the inherent productivity of the new and continually improving jet aircraft by which air transport service has been dramatically expanded and extended throughout the nation. Some airline economists see signs that the contribution of jet-operating economies to overall cost reduction may soon level out and, if so, more rigorous efforts than ever before will be necessary to counteract the continuing upward march of wage levels and of prices paid for materials, supplies and equipment required for airline operation.

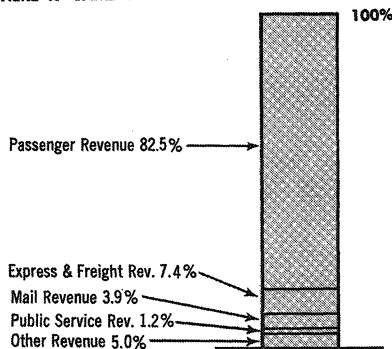
Price of Air Travel Reduced

Since 1962 the industry has not only succeeded in holding the line with respect to average revenue realized per passenger mile, but has been able to reduce this average uninterruptedly from year to year. In the past four years, this decline has totaled more than 10 per cent. In 1966 alone, the reduction in average fare per passenger mile was 3.4 per cent, the largest drop in 3 years. Needless to say, the reductions enjoyed by consumers in the price of air travel over the last few years are in sharp contrast with the advancing trend of consumer prices generally. To a substantial extent the reductions in the price of air travel reflect the wider and wider introduction and popularity of promotional-fare plans of various types. These promotional plans provide fare discounts for air travelers under a variety of conditions. The major discount arrangements include the family fare plan, the youth fare plan, and the military standby program, all of which were heavily utilized by travelers during 1966. During the year, new discount plans were added to those already available to passengers, including:

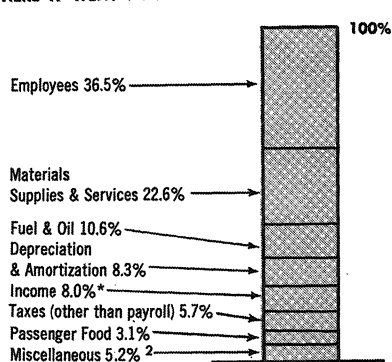
1. Discover America—A 25 per cent round-trip discount for adults traveling round trip and commencing their return portion the week after the trip began.

THE 1966 AIRLINE DOLLAR ¹

WHERE IT CAME FROM . . .



WHERE IT WENT . . .



* Paid out in Dividends 1.8%, Reinvested in Business 6.2%

1. For period ended Sept. 30, 1966.

2. Includes: Advertising 2.8%, Interest 1.9%, Other 0.5%.

SOURCE: ATA Comparative Statement of Air Carriers Income. 4th Quarter 1965, 1st, 2nd and 3rd Quarter 1966.

2. New trans-Atlantic fares which allow a passenger in groups of 15 to fly round-trip New York/London for \$230 if he also purchases at least \$70 worth of ground services—hotels, restaurants, tours and the like.

These new fares were added to the growing list of discount fares already available to travelers. The saving to the traveling public resulting from airline fare reductions has been substantial. Airline passengers in 1966 paid a total of over \$250 million less than they would have paid for the same trips at average fare levels prevailing four years earlier. In the four-year period as a whole, the total saving enjoyed by the traveling public has amounted to more than \$500 million. The growing significance of these savings from year to year:

1963.....	\$ 89,000,000
1964.....	\$ 95,000,000
1965.....	\$125,000,000
1966.....	\$250,000,000
Total.....	\$559,000,000

Manyfold Return From Airline Subsidy

The program of airline subsidies was conceived to enable the Civil Aeronautics Board to carry out its mandate from Congress to develop air transportation to the extent and quality "required for the commerce of the United States, the Postal Service, and the national defense."

This government subsidy program has been most successful. The funds have returned manyfold to the government—in terms of increased taxes and in terms of a highly productive industry contributing to the national economy and to the local community.

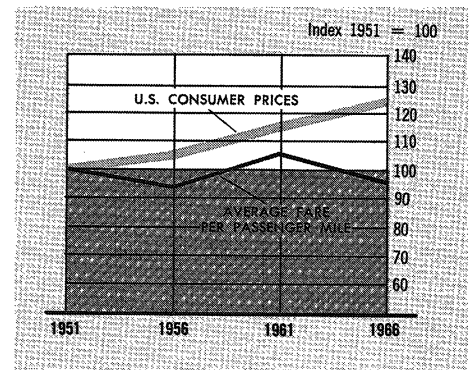
The CAB's latest summary of subsidy accruing by carrier groups over the years shows an industrywide lessening of dependence upon subsidy. The total subsidy figure fell from \$83,092,000 in fiscal 1964 to \$68,065,000 for the fiscal year ending June 30, 1967, a decline of \$15,027,000 or 18 per cent.

Local service airlines operation proves most effectively the principle that subsidy is really for the benefit of communities rather than carriers. Congress provided subsidy to these carriers to enable them to bring regularly scheduled airline service to small towns and medium-size communities. These carriers have expanded the number of communities they serve while reducing their dependency upon subsidy, both in actual dollars received and in terms of subsidy as a percentage of commercial revenue.

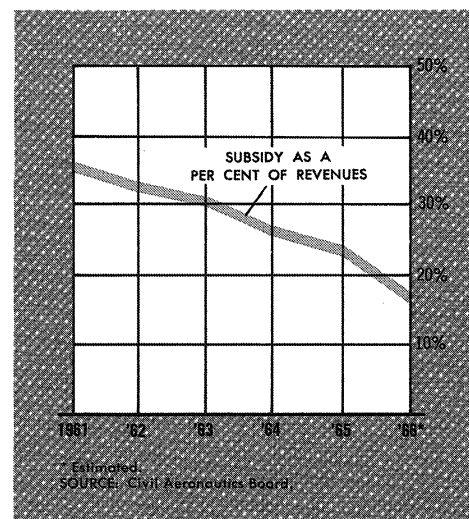
The CAB's report shows that subsidy paid the 13 local service carriers fell from a high of \$66,260,000 in fiscal 1964 to \$58,250,000 in fiscal 1967, a decline of \$8,010,000 or 12 per cent. Subsidy, as a percentage of commercial revenue for the local service airlines, declined from 52 per cent ten years ago to 21 per cent last year.

The downward trend in subsidy continues, based upon the CAB's estimates for fiscal 1968. The total subsidy the Board estimates will accrue to all of the subsidized carriers during fiscal 1968 will be \$62,866,000, a decline of \$5,199,000 or almost 8 per cent below fiscal 1967.

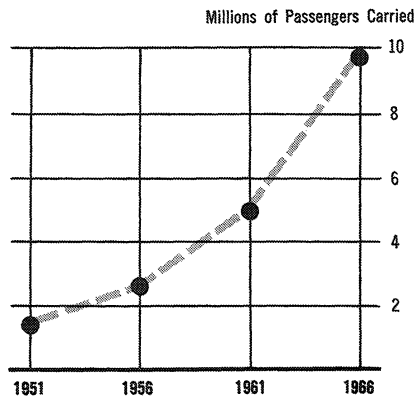
COMPARATIVE PRICE CHANGES— U. S. Certificated Air Carriers vs. Consumer Prices



LOCAL SERVICE SUBSIDY REDUCTION Calendar Years



GROWTH OF AIR PASSENGER TRAVEL BETWEEN U.S. AND FOREIGN COUNTRIES



Source: U. S. Department of Justice, Immigration and Naturalization Service, "Report of Passenger Travel Between the United States and foreign countries."

Airline Need: Funds for the Future

In 1966, the airlines made a net profit of \$427,572,000. The year's results were affected adversely by the International Association of Machinists strike. But even so, it was clear that airline earnings continued to demonstrate the recovery pattern of the last several years.

The industry rate of return was 11.1 per cent for the year, under the peak figure of 12.0 per cent of the year before.

Year	Net Earnings (\$000)	Rate of Return on Total Investment (%)
1961	\$ 37,881—(deficit)	2.1
1962	\$ 52,319	5.7
1963	\$ 78,480	6.5
1964	\$223,172	10.4
1965	\$367,783	12.0
1966 ^P	\$427,572	11.1

Source: Civil Aeronautics Board.

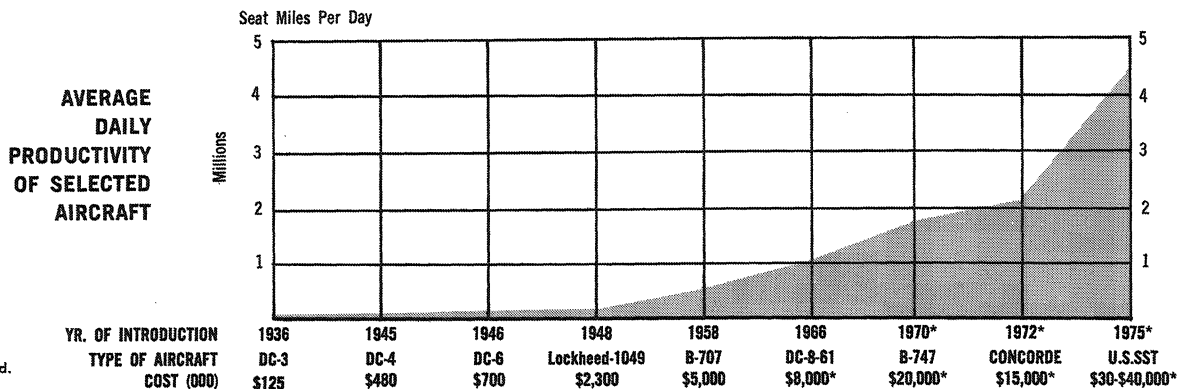
^P Preliminary.

The improved economic health of the air transport industry is enabling the airlines to expand to meet the demands of today's traveler and shipper, but an even larger flow of funds will be needed if the airlines are to meet the commitments of the next decade.

The airlines are planning for this future by reinvesting—at present levels—93 per cent of their cash earnings into new equipment and facilities.

Airline commitments include a 7-billion-dollar five-year planned investment in new equipment and ground facilities. In order to finance this program, the airlines must supplement their reinvested earnings with substantial long-term debt. In addition to the interest cost the airlines must also bear considerable fixed charges for the use of airport facilities. Adequate airline earnings are not only necessary to permit the airlines to carry this financial burden, but are also critical to many municipalities since currently three out of every five airport bond financing programs are secured by revenues associated with airline service.

Looking to the early 1970's when the supersonic age becomes a reality, airline requirements for funds will be even greater.



* Estimated.

GROWTH AND FORWARD PLANNING IN AIR CARGO

■ Continued cargo growth and investment by the airlines in preparation for the cargo volumes of five, ten and 15 years from now mark the air cargo story.

Picture an airliner with every one of its 490 seats filled and room remaining in its cargo compartments for enough freight to fill the largest all-cargo jet operating today. Picture another—an all-cargo plane this time—carrying nearly three times as much freight as today's largest cargo aircraft. These planes will begin entering airline fleets four years from now.

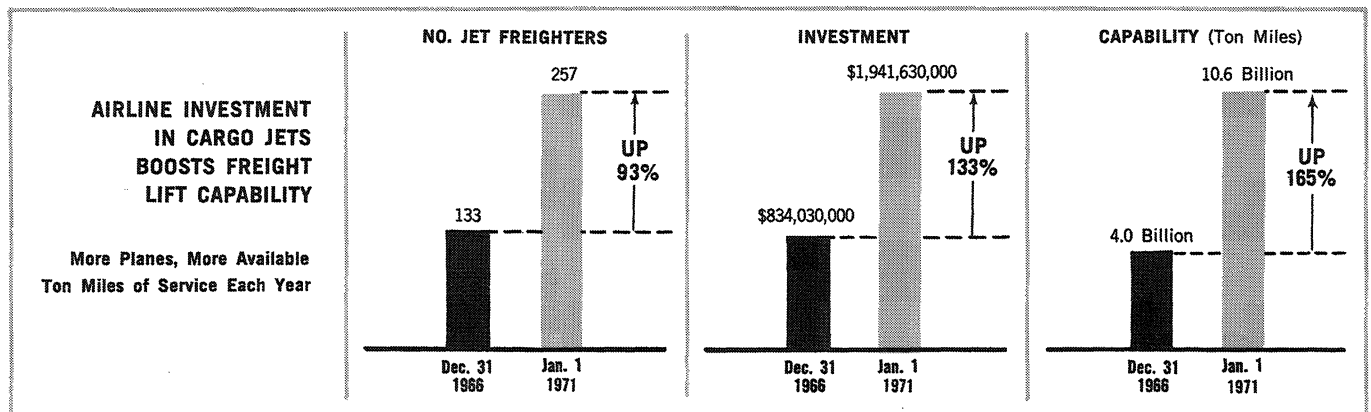
Airline buying of new aircraft—\$1.2 billion worth of freighter aircraft alone in the 1966-1970 period—is one part of the forward planning. Other programs include the investment of millions in new terminals and ground handling equipment and advances in containerization. The computer is being put to work, in both international and domestic air cargo operations, to save time and cut paperwork.

It has been barely three years since the first jet freighters entered scheduled airline service late in 1963. In that year, for the first time, the U.S. scheduled airlines passed the one billion mark in freight ton miles of service performed in scheduled operation. In 1966 the airlines reached a new threshold, passing the two billion mark. The 2,050,737,000 ton miles of freight service performed in 1966 is almost exactly double the 1,025,000,000 performed in 1963. Last year, even with U.S. carriers diverting some of their largest, most efficient cargo jets from scheduled to charter service to support the U.S. effort in Viet Nam, scheduled air freight rose by 18.5 per cent.

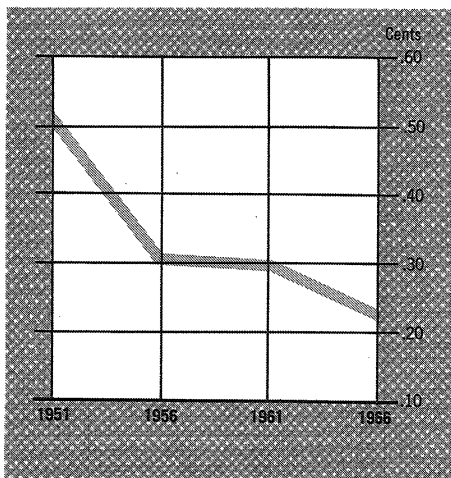
Cargo Volume Up Sharply

Air cargo, of course, includes freight, mail and express. The three combined accounted for 2,900,945,000 ton miles of service last year, up 26 per cent. Substantial gains in the volume of air mail letters—up more than 45 per cent—and in the air transport of first class mail on a space-available basis—up more than 87 per cent—offered strong new evidence of the airline industry's growing capacity to help the U.S. Post Office Department accomplish its stated goal of over-night delivery ultimately for most of the nation's letter mail.

Air cargo is becoming more important in the airlines' transportation revenue mix. Last year air cargo accounted for 12.2 per cent of this revenue, compared with 10.9 per cent in 1956. Projections



**DECLINE IN AIR CARGO
YIELD PER TON-MILE OF SERVICE**



through 1980 see this trend continuing and signal a new era in air cargo for which the airlines are now preparing.

Jet Freighter Fleet Expansion

Forward planning for tomorrow's cargo volumes is perhaps best illustrated by examining the capabilities of the 257 jet freighters the airlines now have in service or on order.

The most versatile of these aircraft are the quick-change type, so called because they can be transformed within less than an hour from a passenger airliner to an all-cargo aircraft loaded with up to 40,000 pounds of freight. These are medium-range aircraft designed to serve intermediate-size cities and to tie in these communities with the major hubs on the transcontinental and international cargo routes. Top performers on these latter routes continue to be the 92,000-pound-capacity long-range cargo jets. However, still larger planes will soon be joining them.

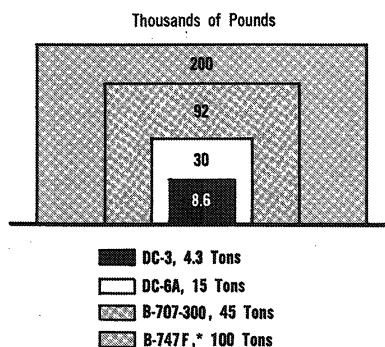
Next year the DC-8-63F will come into the jet freighter fleet. Built with more cubic capacity than today's jets, it is designed to be up to 40 per cent more productive. It will be 37 feet longer than today's largest jet freighter. It will accommodate 18 pallets instead of the 13 pallets which are the maximum on today's largest jets.

The 747 is scheduled to enter airline service in 1970 as a passenger airliner and in 1971 as an all-cargo aircraft. Even filled with passengers, it will carry more than three times as much freight in its cargo compartment as today's passenger jets do in theirs. As a freighter, it will carry 214,000 pounds of freight, either on pallets or in containers eight feet high, eight feet wide and constructed in lengths of 10 feet, 20 feet, 30 feet and 40 feet—the standard dimensions for most of the containers used today on highways, in rail service or in ocean shipping. The 747's main cargo deck will be designed to carry as many as 28 containers (of the 8' x 8' x 10' dimensions) at one time.

A commercial version of the huge C-5A, a military transport now under development, could be available also in the early 1970's. This aircraft will also carry freight in rows of containers. It is being designed to carry 285,000 pounds of freight, or more.

The airlines presently have about 100 cargo jets in service, capable of producing more than four billion ton miles of service a year. The approximately 160 freighter jets on order for delivery through 1970 will add another six billion or more ton miles of service a year to present freight lift capacity. The growth of capacity for airborne cargo has already set in motion far-reaching programs to improve the efficiency with which air freight is handled on the ground.

**GROWTH IN CAPACITY OF
REPRESENTATIVE CARGO AIRCRAFT**



* Scheduled for service by 1970.
SOURCE: Manufacturers' Specifications

More Air Freight Terminals

With each dollar the airlines invest in a freighter aircraft, it is estimated that an additional eight cents is spent for ground support—for terminals, pallet loaders, pallet transporters and other elements of the ground handling system. On this basis, and considering the period beginning in 1963 in preparation for the advent of cargo jets and extending through 1970, more than \$100 million will have been invested by the airlines in new cargo terminals, terminal expansion and cargo ground handling systems.

Every major airline has recently built or is planning to build new cargo terminal facilities. And nearly every airline, whether moving freight in cargo jets, piston-powered cargo planes or in the cargo compartments of passenger flights, has enlarged cargo facilities.

The need to save space at air cargo terminals was one of the factors leading to containerization of air freight. The need to better use space aboard freighter aircraft was an even more important factor. Now air freight containerization is bringing shippers lower rates.

Container Program Begins

The airlines' new family of containers for air freight began flying late last year. Shippers moving freight in any one of the program's four container types receive rate reductions which, in the case of relatively high-density goods, can reduce shipping charges by 30 per cent or more.

Forward planning in the air freight container field is now concentrated on developing greater uniformity between the domestic container plan and the container program of the International Air Transport Association (IATA) for ultimate international interline compatibility of containers. Work is also underway to better adapt large highway containers to the needs of the coming generation of cargo jets through research on lighter weight construction for large containers. The goal is ultimate capability for the worldwide interchange of containers among all freight transport modes.

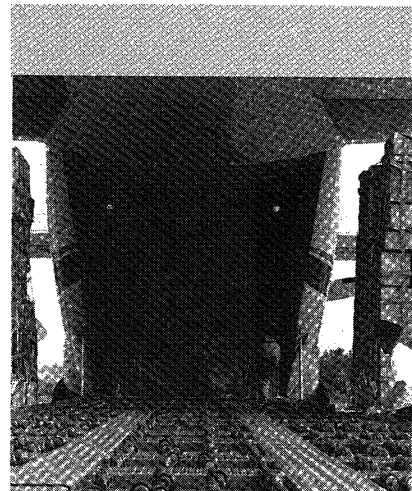
The search continues for new ways to reduce paperwork in international freight traffic. Recently the airlines agreed on a code to identify commodities by numbers rather than by words, because computers work faster with numbers than they do with words. These efforts coincide with experiments on communications satellites looking towards a worldwide system for flashing cargo data from one computer to other computers in offices thousands of miles away.

Meeting New Shipper Needs

The forward planning in air cargo continues to probe new shipper needs. Taking an industrywide approach, air cargo people have been meeting in the past year with shipper groups as diverse as commercial fishermen from the Pacific Northwest and project officers at the missile launching sites at Cape Kennedy. Both groups had asked for more facts about air cargo. Both sought ways of using the air freight system to meet their own special logistics or marketing needs.

This is an example of the workshop approach in which freight specialists from many airlines meet with large cross-sections of shippers to explore new shipper needs and to explain the airlines' new freight lift capability. These sessions offer fresh evidence of the consumer-oriented changes occurring in the marketing of most products. The new trends, characterized by more frequent ordering and a greater variety of colors, styles and models, will bring more products into the air freight system.

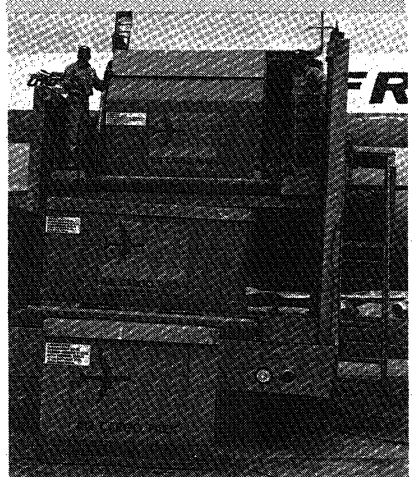
While air freight is growing spectacularly, it still accounts for less than two per cent of all intercity freight revenue—indicating the almost unlimited market that lies ahead.



Mechanization spreads in air freight handling.



Type A air freight containers carry up to 10,000 lbs. each.



Container types B, C and D give shippers added choice.

RESPONSE TO GROWING MILITARY AIRLIFT REQUIREMENTS

■ The demand for commercial airlift to support military commitments continues to grow. The airlines have proved responsive to the shifting geographic requirements of the Defense Department and have provided the speed and capacity when needed to support the national defense concept of flexible response.

During first half of fiscal 1967, the scheduled airlines carried 957,000 military passengers and 77,000 tons of priority cargo and mail under a \$350 million military contract with the Military Airlift Command. The fiscal 1968 MAC contract is expected to reach \$550 million for the purchase of scheduled airline services. Worldwide, the United States Air Force estimates that scheduled airline services accounted for 71 per cent of the passengers and 67 per cent of the cargo moved under MAC charter during the first half of fiscal 1967.

With the shift in airlift requirements to the Vietnam area, the airlines have increased their MAC charter services substantially. Currently, over 20 chartered flights leave East and West Coast bases every day bound for the Southeast Asian theater. Last year, 500,000 passengers and 47,000 tons of cargo were flown by the airlines to Southeast Asia in response to MAC requirements.

Fulfillment of national defense requirements also dictates a strong commercial airlift force capable of instantaneous reaction to global defense needs. To meet this responsibility the airlines presently maintain the Civil Reserve Air Fleet, consisting of 271 long-range jet and turboprop aircraft valued at \$1.8 billion. Flying peacetime commercial routes throughout the world, these aircraft can enter MAC service in 48 hours if the need arises. The CRAF fleet is capable of producing 22.5 million ton miles of airlift daily, more than five times the airlift capability of the CRAF fleet in existence in 1952.

Daily Requirements Served by ATA's Military Bureau

On a daily basis, the airlines serve the government's needs for routine troop movements throughout the nation through the military bureau of the ATA. Working with the Military Traffic Management and Terminal Service, the bureau provides air service for group movements of the Armed Forces aboard scheduled or chartered flights. Last year, this ATA division arranged transportation for 485,000 armed forces personnel, 99 per cent above troop movements accommodated in 1965.

To fulfill personal or official transportation needs of servicemen and their dependents, the airlines have 92 Airline Traffic Offices (JAMTOs) at major military installations which provide reservations, ticketing and airfreight services. In 1966 almost two million passengers were ticketed through JAMTOs.

For personnel on leave, furlough, pass or within seven days of discharge, most airlines offer a special military standby fare program providing space-available transportation for military personnel at approximately 50 per cent of regular fares. Military personnel on emergency leave are permitted to make advance reservations, while those on regular leave, pass or discharge are given a standby priority over other reduced fare standby passengers. The airlines carried over two million service personnel under the program in 1966, and have carried over nine million military standby passengers since the program began in March 1963.



Servicemen returning to U. S. from Saigon board MAC-Chartered Scheduled Airliner.

■ Marketing—the consumer-oriented philosophy which seeks to meet the needs of potential airline users—has become a prime force in creating new demand for air transportation. The vacation and leisure traveler, who today represents 35 per cent of air travelers, is virtually an untapped travel market. Airline marketing programs are aimed at broadening the air travel base so that by the 1970's, this non-business travel potential will represent close to 50 per cent of annual passenger traffic.

In five years, over half the nation's population will be under 25 years old. It will have approximately double the \$40 billion of disposable income now available to spend on leisure activities, high on the list of which is travel.

To attract the pleasure traveler, the airlines have developed a broad spectrum of consumer-oriented programs which are visible daily in the market place.

- The industry last year spent an estimated \$145 million, up 460 per cent from 1956, for the purchase of advertising space primarily in newspapers, local and network television and national magazines. The carriers are purchasing advertising in cities outside their individual routes to promote service to potential users.

- Promotional fares have been introduced to stimulate new users. In 1966, the Youth Fares accounted for close to two million travelers. Excursion fares, coupled with all-inclusive tours, destination promotion, hotel accommodations, car rentals and other vacation arrangements developed and marketed by the airlines, have proven to be one of the best-tested methods of attracting new travelers to airline service.

- The nation's 6,000 travel agencies last year sold an estimated one billion dollars of domestic air travel. Reduced rate travel privileges on the U. S. airlines allow agents to inspect U. S. vacation areas and use this experience to become even better salesmen.

- Credit plans have been instituted to attract middle-income spenders. With 82 per cent of all families having established credit with other consumer-oriented industries, the airlines have made it as easy as opening a department store charge account to purchase air services and pay for the travel over an extended period of time.

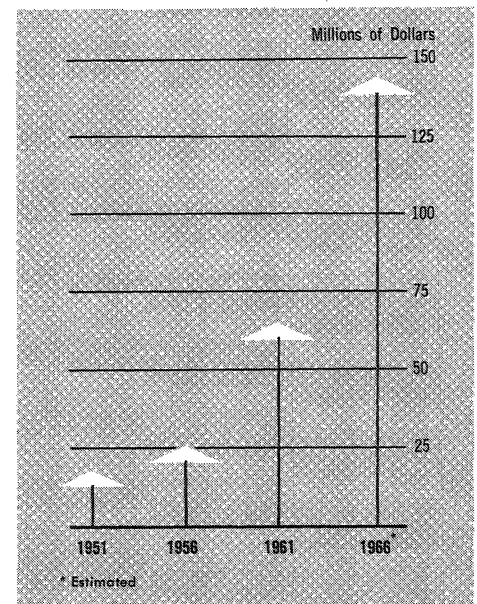
- Customer desires have been analyzed through extensive consumer studies, the result of which has been a marked improvement of the airline service product.

- Reservations service has been vastly modernized through centralizing reservations offices to provide 24-hour service to most cities throughout the airline system and the use of computers to store seat availability for almost instantaneous response to requests for flight information. The carriers currently own or lease \$250 million worth of computer equipment, and have on order an additional \$55 million for use in upgrading reservations systems. It now takes a customer the price of a local telephone call and a minute of his time to determine if a seat is available on the flight of his choice, as well as seat availability aboard connecting airlines. The reservations agent can determine in eight to ten seconds if space is available.

- Baggage allowance has been liberalized. Passengers can carry unlimited weight in two pieces of checked baggage, instead of the former limit of 44 pounds of luggage.

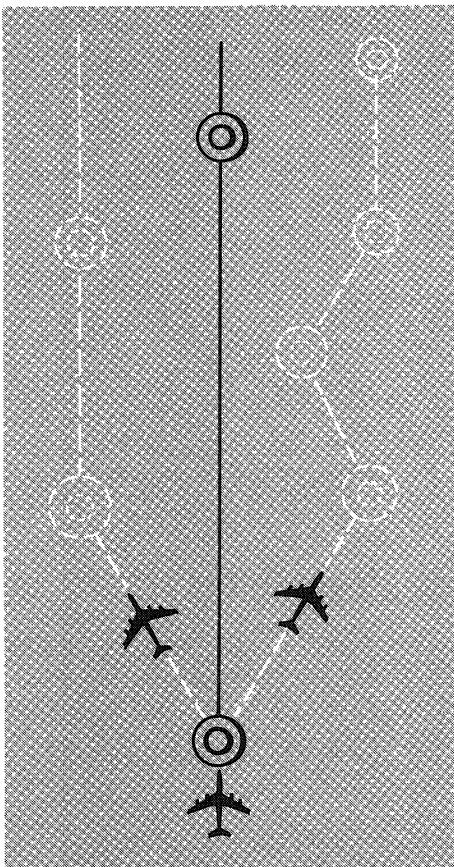
BRINGING THE AIRLINE PRODUCT TO THE CONSUMER MARKET PLACE

DIRECT ADVERTISING EXPENDITURES
U.S. Scheduled Airlines



HOW AIRLINE OPERATIONS ARE MEETING TODAY'S NEEDS—AND PREPARING FOR TOMORROW'S

INCREASING AIRWAY CAPACITY



EXPERIMENTS to set up new airways (dashed lines) and phantom ground stations (dashed circles) will begin soon. New airborne equipment to be tested may free present airways (solid line) of dependence on ground station location (solid circle) thereby upping airways capacity of present navigation system.

■ Aviation began—and has continued to grow—because man refused to accept things as they are. This restlessness has completely transformed the technology of air transportation in the span of a very few years. Airline management's traditional and deep-seated reluctance to be satisfied with its own accomplishments is producing a steady flow of improvements in all phases of airline operations, engineering and maintenance.

These include:

- lowering minimums, thus increasing reliability, by installing new, more precise landing aids.
- devising ways to use the present air navigation system so that it can keep pace with projected traffic growth and improvements in air traffic control.
- grooves cut into runways to reduce skidding.
- a new airline weather radar, for use on the SST.
- add-on airborne equipment to display airplane identity and altitude on a traffic controller's radar scope.
- the promise of a practical airborne collision avoidance system.
- computer analysis of jet engine performance.
- communication with aircraft via satellite.

The constant search for new methods, new equipment, and new technology to make air transportation safer and more efficient, builds a better operation with today's aircraft and helps prepare for future operations with tomorrow's aircraft. Most of this effort stems from the search for ways to improve operations with today's aircraft. Often the preparation for a new generation of aircraft merely emphasizes—or gives more priority to—efforts already underway to improve operations with the present generation of aircraft. Thus, many of the preparations for the SST are merely extensions of preparations already underway for the subsonic jets.

Improve Landing Precision to Increase Reliability

A good example is the so-called "all weather" landing program, which is really the current phase of a program almost as old as the airline industry. The goal of this program is to improve the reliability of scheduled air service by reducing the number of occasions when a plane cannot land because visibility is below minimums.

A desire to increase the reliability of jet age flight schedules is justification enough for the present Category II phase of the "all weather landing" effort. This is borne out by the fact that this effort got underway long before the airlines began placing orders for an SST. Thus, while the present Category II effort is certainly an essential part of the preparation for SST operations, it would still be underway even if there were no SST, because it is a necessary element of the continuing improvement of the nation's air transportation system.

In a modern jet transport making a precision descent through the overcast, the pilot relies initially on guidance from an electronic landing aid, then completes the landing with visual guidance from approach and runway lights. Landing minimums are expressed as a "decision height"—the point on the descent path where a pilot must be able to see to complete the landing, or abandon the approach, if

he cannot see—and runway visual range (RVR)—visibility along the approach end of the runway, measured with photoelectric cells. Current jet minimums with ILS (instrument landing system), and high intensity approach lights and runway lights, are 200 feet decision height and 2400 feet RVR (Category I).

Airborne Equipment Ahead of Ground Systems

The airlines are now well into an effort to increase instrument landing precision by a margin that is large enough to permit lowering landing minimums—with equal or greater safety—one more step to Category II (100 feet decision height and 1200 feet RVR).

Achieving this margin of increased precision involves the combined efforts of the FAA, airport management, and the airlines because it requires more precise visual and electronic guidance. Lights must be installed in runways, to give more precise visual guidance to touchdown and during roll-out. The ILS must be improved, to give more precise electronic guidance. New and improved airborne equipment must be installed by the airlines in their aircraft and their flight crews must be trained to qualify for, and maintain, the degree of flight proficiency necessary for Category II landings.

Five airlines completed their programs and received authorization for the first phase of Category II from FAA in 1966. A number of airlines are working towards Category II—some by retrofitting aircraft already in the fleet, others by waiting for the delivery of new aircraft with Category II capability. At the beginning of 1967, slightly more than 250 aircraft in the U.S. scheduled airline fleet were equipped and ready for Category II. By 1970, the airlines expect to have roughly 1,130 aircraft ready to operate down to these minimums. Over the next three years, the airlines are likely to spend about \$70 million for equipment to operate to the lower minimums of Category II.

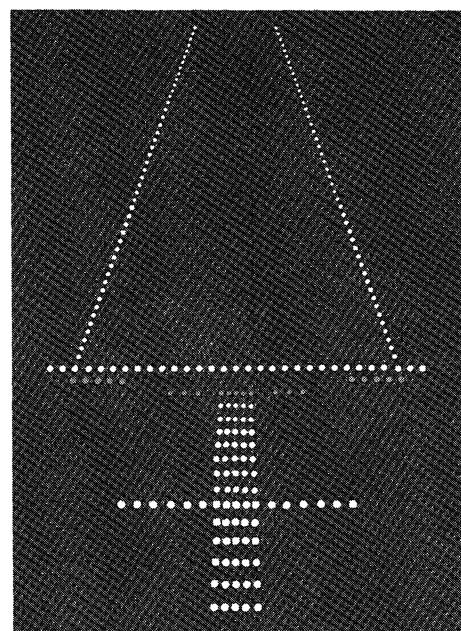
One runway at each of 23 airports, selected by the airlines and FAA, will be equipped for Category II operations. Installation of ground facilities for these runways has been slowed by an unfortunate delay in the runway lighting program, so that only five runways are now commissioned.

AIRPORTS WITH CATEGORY II RUNWAYS— PLANNED OR IN SERVICE

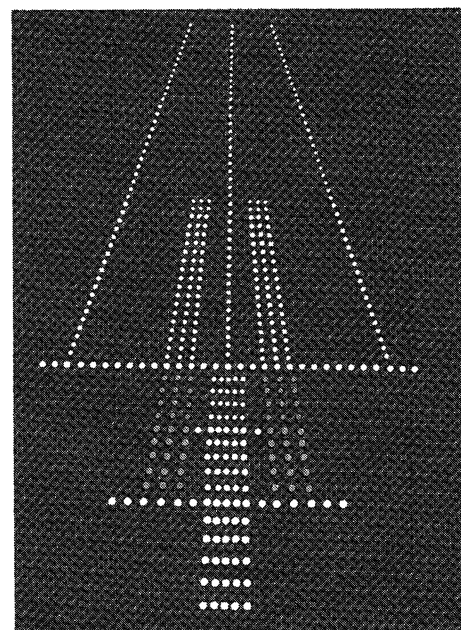
Commissioned	1967	1968-1970
Pittsburgh, Pa.	Atlanta, Ga.	Los Angeles, Calif.
Washington—Dulles	New York—JFK	Houston, Tex.
Oakland, Calif.	Louisville, Ky.	Chicago—O'Hare
Denver, Colo.	Washington—National	Milwaukee, Wis.
New Orleans, La.	Windsor Locks, Conn.	Seattle-Tacoma
	Detroit, Mich.	Buffalo, N.Y.
	San Francisco, Calif.	New York—LaGuardia
		Philadelphia, Pa.
		Anchorage, Alaska
		Newark, N.J.

Those runways already commissioned have lower power in-runway lights, while those slated for future commissioning will have the new higher power lights approved by FAA on March 27, 1967. Daylight operations with lower power lights are limited to RVR above 1200 feet, pending results of current FAA studies.

VISUAL LANDING AIDS



CATEGORY I aids include high intensity approach lights (foreground), threshold lighting and edge of runway lights. Painted markings help guide pilot in daylight.



CATEGORY II lighting gives pilot touchdown zone guidance (3-light bars) and center line lighting for roll-out. Modified approach lighting incorporates new agreed international standard.

Grooving Prevents Skidding on Wet Runways

Another kind of limitation imposed by the environment in which operations are conducted stems from the condition of the runway surface. Recent research has shed new light on the factors that promote skidding on wet runways, and shown how cutting small thin cross-runway grooves in the pavement can reduce this skidding.

In 1966, after reviewing the results of the research the airlines began investigating the possibility of setting up an operational test of runway grooving at a busy U.S. airline airport. This investigation yielded five possible candidates for the grooving tests. One of these, Washington National Airport, announced plans late in 1966 to groove one runway. Plans are well advanced for grooving at New York's John F. Kennedy Airport and Kansas City, Missouri, Municipal Airport.

New Weather Radar for the SST

Nearly all airliners carry weather radar: the exceptions are a few piston aircraft about to be replaced by radar-equipped turbine-powered aircraft, and special type aircraft such as helicopters. What the pilot sees on his airborne radar scope is an area of "echoes"—where the water drops are large enough to reflect the radar energy from his transmitter. Since large drops are found in clouds with strong vertical air currents, the radar shows the pilot where he is likely to find turbulence in clouds.

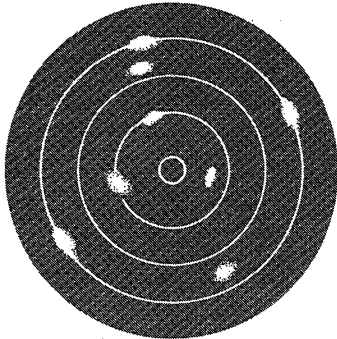
Last year the airlines completed a two-year study of possible design improvements in airborne weather radar. The results of this study have been incorporated in a new equipment standard for the next generation of airline weather radar, which will be available for fitting into aircraft coming off the production line this year. Since an average weather radar installation costs around \$20,000 in an airline aircraft and all turbine-powered aircraft to be delivered to the U.S. scheduled airlines will carry weather radar, this device alone will account for more than \$14 million over the next four years.

The new standard also defines, as far as current SST development permits, the characteristics of weather radar to be used in the supersonic transport. For example, the detection range for SST weather radar should be over 300 miles, compared to 150 miles for subsonic jets. As SST development continues, and more radar requirements are defined, the airlines will complete preparation of a weather radar standard meeting the needs of supersonic flight.

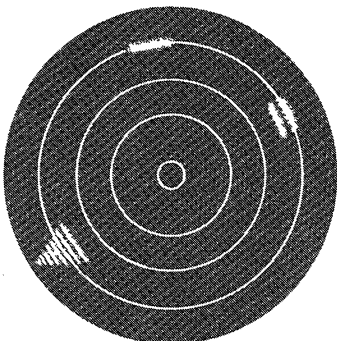
Safer, More Efficient Use of the Airspace

In addition to being the environment within which such phenomena as turbulence, cloud and rain are found, the nation's airspace is also a national resource that must be used more and more efficiently by a rapidly growing aircraft population. The instrument for sharing the use of this airspace resource is the FAA-operated air traffic control system. Several active airline efforts are geared specifically to support FAA programs for improving the safety and efficiency of this system. One FAA program will put the identity and altitude of an airplane alongside its echo on the controller's radar scope. The echo in this case is not produced by simple reflection of pulses transmitted from the ground antenna (primary radar) but is the result of the aircraft reply to an interrogation by the ground

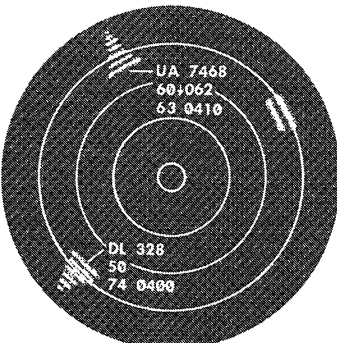
MAKING BETTER USE OF RADAR



PRIMARY radar shows white echoes from energy reflected by aircraft.



SECONDARY RADAR beacon returns are result of aircraft reply to interrogation from ground radar.



IDENTITY and altitude shown beside beacon return are transmitted automatically from aircraft with full radar beacon system capability.

(secondary radar). The airlines have installed equipment in their aircraft, and the FAA have added equipment to their radars, to make this possible.

The secondary radar program got underway about nine years ago, when both FAA and the airlines installed equipment to give a reinforced radar target. The current phase of this program involves additional installations of FAA equipment and airline airborne equipment so that coded identity and altitude information will be included in the aircraft's reply to an interrogation from FAA's ground radar. The airlines support this program as a valuable aid to air traffic controllers, and have pledged that their airborne equipment program timetable will at least match the progress of ground installation—if not stay ahead of it.

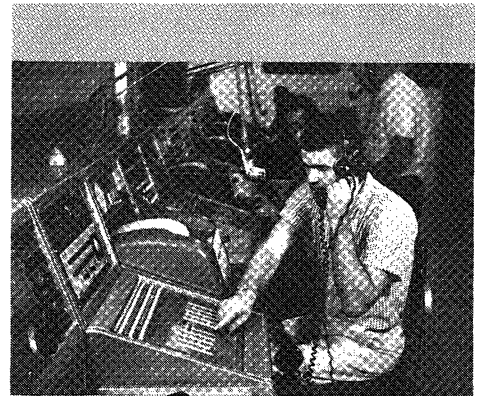
Avionics Equipment for New Aircraft

New jet and turboprop aircraft being delivered to the airlines over the next four years will carry an impressive array of avionics equipment. This includes the secondary radar, with altitude and identity features, airborne weather radar, navigation equipment, communications equipment, flight recorder and cockpit voice recorder. The average cost of this equipment on a turbine-powered airliner (equipment plus installation) is slightly over \$200,000. Over the next four years, this means the airlines will invest over \$140 million in new avionics equipment.

	1967	1968	1969	1970	Total
Aircraft Deliveries	342	259	50	56	707
Avionics Cost \$000,000	68.4	51.8	10.0	11.2	141.4

For 12 years, the airlines have been seeking a suitable collision avoidance system (CAS)—a device that will detect the presence of an aircraft that could pose a potential collision threat, analyze the threat and command the pilot to make an appropriate avoidance maneuver. For most of the time, it was a technically unattainable goal. However, over the past several years, it has been transformed into one that is now within reach. Airline studies of possible collision avoidance system techniques during 1965-66 led to the issuance of a revised and expanded airline policy and statement of functional requirements for CAS.

Current technology does not permit—nor does it hold promise of soon permitting—development of a CAS that is independent of equipment carried aboard other aircraft. To get the benefits of CAS, both the “protected” aircraft and the “intruding” aircraft must be fitted with compatible CAS equipment. Because the CAS must be a cooperative system, it must be designed from the outset so that all CAS equipment will work together. This means that one collision avoidance system design must be selected out of the variety of attractive design concepts available with present technology. The airlines are now at work, with the helpful guidance of government and industry experts, trying to complete a careful analysis of design and operational tradeoffs, and come up with a draft technical description of a CAS which, while meeting airline requirements, will also come as close as possible to satisfying the requirements of other



RADIO OPERATOR connects airline operations office telephone line with air-ground radio circuit used for operational control.

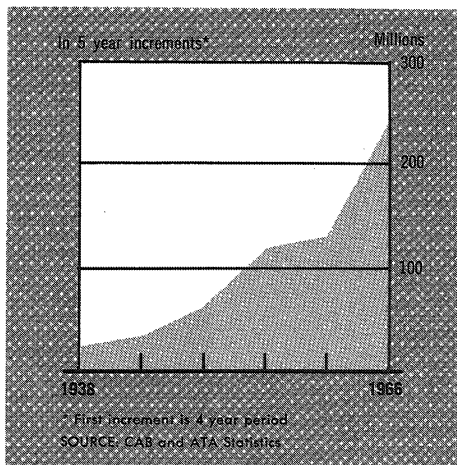


DISPATCHER in company operations office dials selective calling code that rings in cockpit, alerting pilot to listen.



CAPTAIN answers call. Airlines are working to replace voice communication with automatic data link for routine messages.

REVENUE PLANE MILES PER FATAL ACCIDENT



airspace users. When completed, this draft will be submitted to FAA, to help their effort to produce a national common system standard for CAS.

Improving the Air Transportation System

Some airlines now use computers to monitor the health of their jet engines. The daily computer print-out of each engine's performance over the past month gives overhaul base engineers a chance to spot signs of potential engine malfunction, long before it is apparent to flight crews, and prescribe corrective action—even removal for inspection and overhaul—well ahead of the time when the engine's misbehavior could demand such action.

Today, the data used by the computer is observed and recorded manually by crews in flight, transmitted to the overhaul base by teletype after the plane lands. At least four airlines are now testing or studying equipment that will observe and record engine performance automatically or on crew command. Although the first generation of these airborne devices will probably store performance data on tape for transmission to the computer after the plane lands, the airlines' goal is to be able to transmit performance data while the plane is in flight. Using a small airborne computer to monitor continuous observations of performance, this system could detect the first signs of abnormal performance, advise the crew by appropriate cockpit display, and send the information ahead to a ground station where men and materials could be ready to do the necessary maintenance work as soon as the plane has unloaded its passengers.

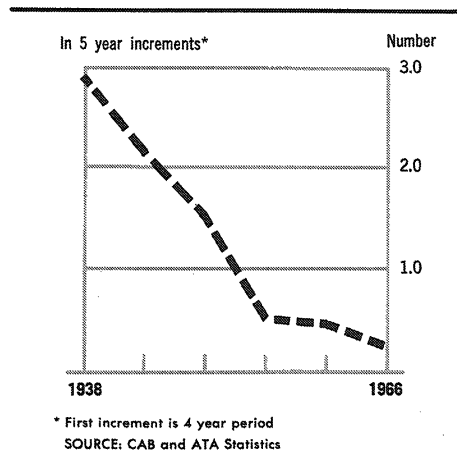
Satellites to Relay Aircraft Messages

Airlines and equipment manufacturers have been working for some time on the application of digital data communications techniques to the exchange of routine air-ground messages. A parallel effort seeks to assure the high quality communications required for such an air-ground data link. This is the airline goal of using communications satellites to extend the present land-based VHF (very high frequency) air-ground communications service over the oceans where less reliable HF (high frequency) is now in use. A series of communications experiments is planned this year, using NASA's ATS-1 satellite and airline aircraft on scheduled flights. Information gathered by these experiments will help design a future operational air-ground-air communications system using synchronous satellites to relay VHF transmissions to and from aircraft beyond normal range of land-based VHF stations.

Making a Good Safety Record Better

The second half of the 20th century is producing a revolutionary fall-out of new technology. The airlines are finding ingenious ways to put this technology to work improving the operation of the air transportation system, and by investing the funds needed to use this technology. All of these improvements—to the aircraft, its equipment, and the services it uses—have as their ultimate goal the addition of some increment of increased safety. The safety record is good, and is getting better. Last year the safety record was the safest year in airline history: the 1966 passenger fatality rate was 0.7 per 100 million revenue passenger miles.

PASSENGER FATALITIES PER 100 MILLION REVENUE PASSENGER MILES



■ Airport facility planning brings unique challenges daily as the airlines apply new technology, planning concepts and design innovations to provide more efficient terminals for new generation aircraft and heavier traffic demands expected in the future.

Of the 550 airline-served domestic airports, 143 receive jet service. By 1970, it is expected that 346 more airports may receive jet service, including 21 where jumbo jets will initially operate. The SST begins service in the mid-70's. Accommodating all aircraft disciplines requires an integrated approach to airport planning.

Total System Concept Emerges

Airports have grown from single terminals and grass landing strips to complexes of several terminal satellites with 100 or more aircraft gates. Future airport development holds building-block expansion of present facilities to accommodate a larger mix of jet aircraft, and development of a nationally-integrated system of special purpose airports serving long-haul markets linked by air bus-helicopters and V/STOL aircraft—as well as high-speed rail and road nets—to satellite suburban airports serving short-haul markets and city centers.

Requirements for each new facility, or each new airport complex vary with location, community distribution and airline traffic requirements. On a national basis, airlines, airport authorities and aircraft manufacturers envision future airport planning in terms of overall airport contributions to community economic development and as an integral section of the national transportation system with design flexibility to accommodate traffic variations and serve the community through optimum land use and functional terminal areas capable of future expansion.

Prudent Business Management Enhances Community Value

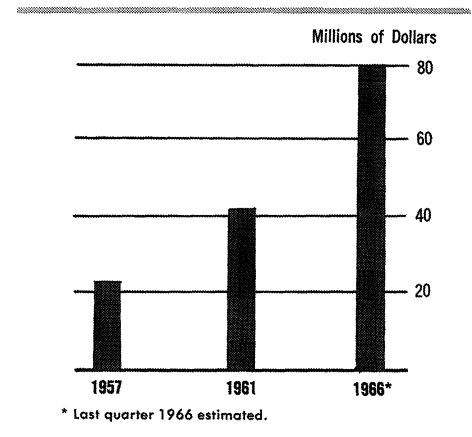
From 1961 to 1965, \$1.25 billion was spent by the airlines and airports to improve terminal and operational facilities for present aircraft. Current estimates indicate that over \$2.5 billion, or more than twice the expenditures of the last four years, is required by 1970 for construction and modernization of terminal and operational facilities to prepare for future needs.

A major contribution to financing airport improvements are landing fees, leases and rentals paid by the airlines for use of the airport. Landing fees alone last year amounted to over \$80 million, almost 100 per cent above those paid for airport use by the airlines in 1961. These, as well as concession revenues, provide security for airport bonds to finance new construction and modernization. Up to five years ago, three out of five airport bonds relied on the general credit of the community. Today, it's reversed. Three out of five airport bonds are specifically secured by revenues derived from airlines and related income activities at the airport.

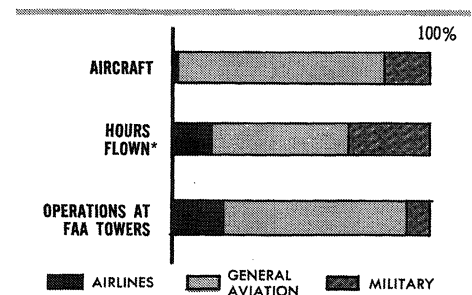
The airlines also pay for their use of the federal airway system through airways user charges, which in Fiscal Year 1966 amounted to \$171.2 million. Fiscal 1967 airways user charges are expected to reach \$197 million.

THE AIRPORT CHALLENGE —TODAY'S PRACTICAL ANSWERS FOR TOMORROW'S NEEDS

LANDING FEES PAID BY AIRLINES FOR AIRPORT USE

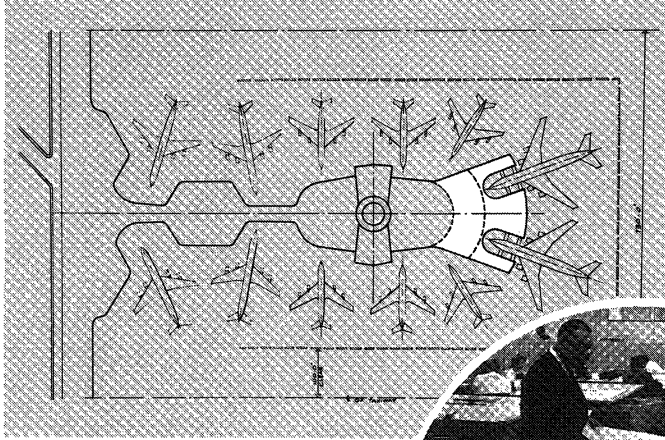


USERS OF THE AIRSPACE FISCAL 1966



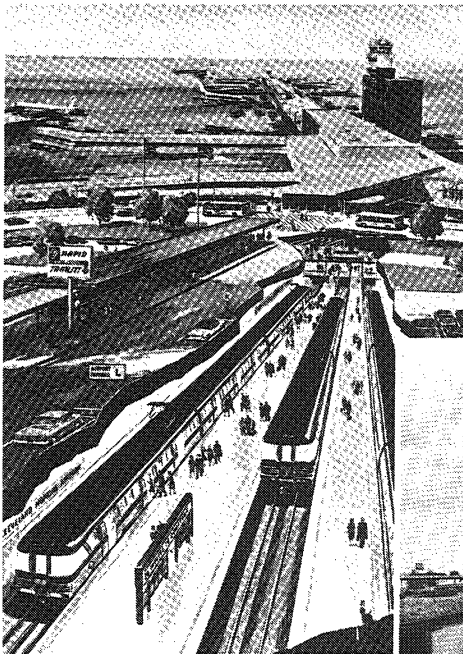
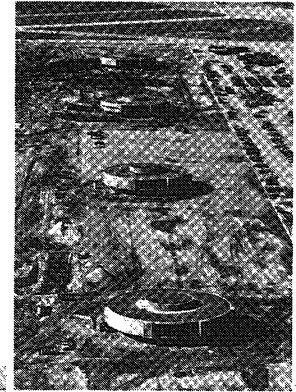
* General Aviation is Preliminary
Data from Aviation Forecasts Fiscal Years 1967-'77 - Jan. '67 by FAA Office of Policy Development, Economic Division. Military Aircraft & Hours Flown from "1964-'69 Edition."

**IMAGINATIVE PLANNING
ANTICIPATES FUTURE
AIRPORT NEEDS . . .**

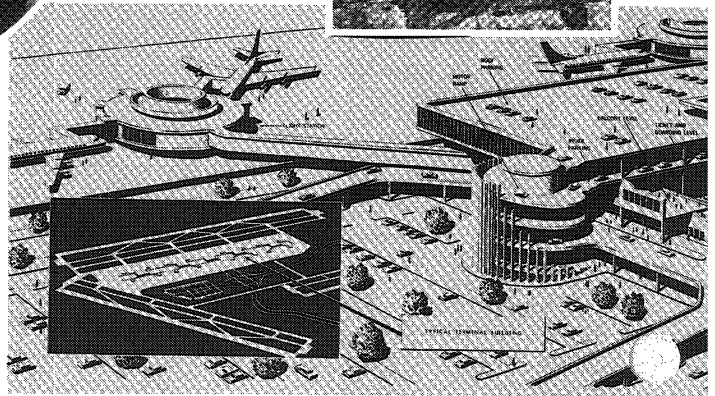
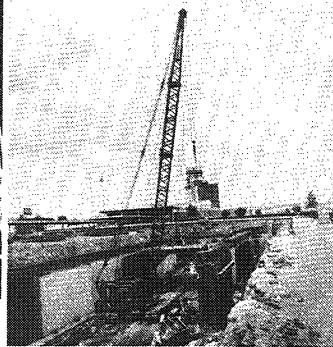


Totally new concepts in airports will be required over the next decade and include maximum use of existing terminal space through "building block" development.

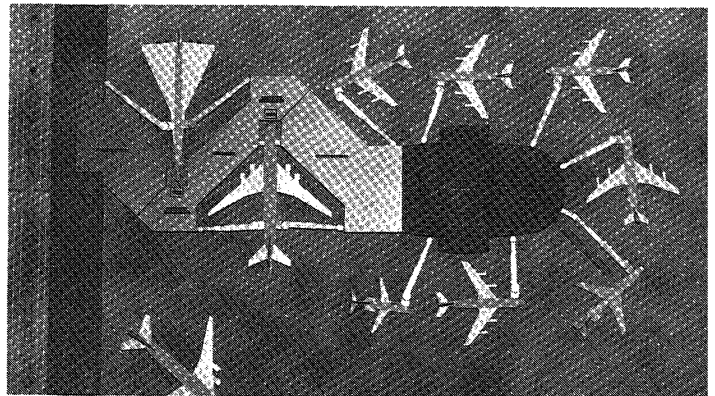
Airline planners continually assess future terminal facility requirements to accommodate increased passenger and cargo traffic and plan today for tomorrow's needs.



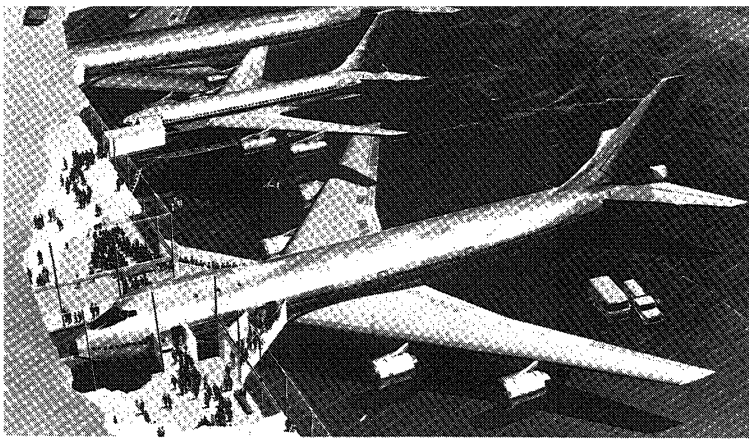
High speed mass ground transportation connecting airport to city center promises to relieve airport access congestion. Cleveland's airport-to-downtown rapid transit system under construction.



New airports are already off the drawing boards and under construction. Houston Intercontinental Airport construction progress and ultimate design shown above.



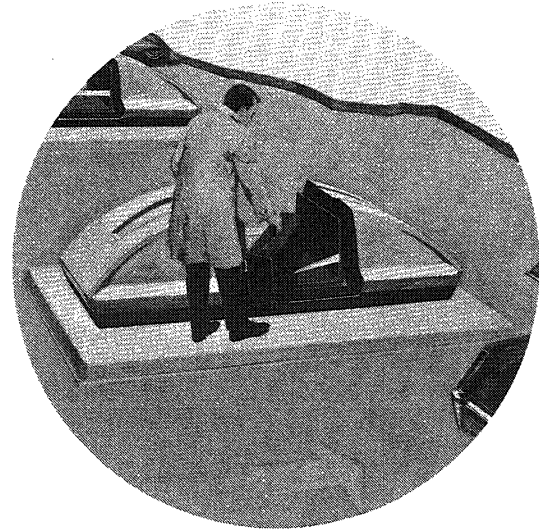
Future terminal and gate concepts are based on accommodating more diversified types of airline aircraft in the same space. This concept provides flexibility to handle present jets, the SST and the Jumbo Jet in the same facility.



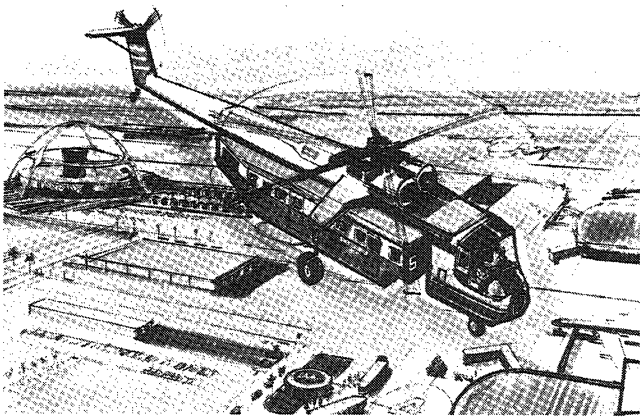
Multi-level terminal concepts include elevating present day jets above the ramp to second-story terminal levels permitting simultaneous boarding of several large aircraft.



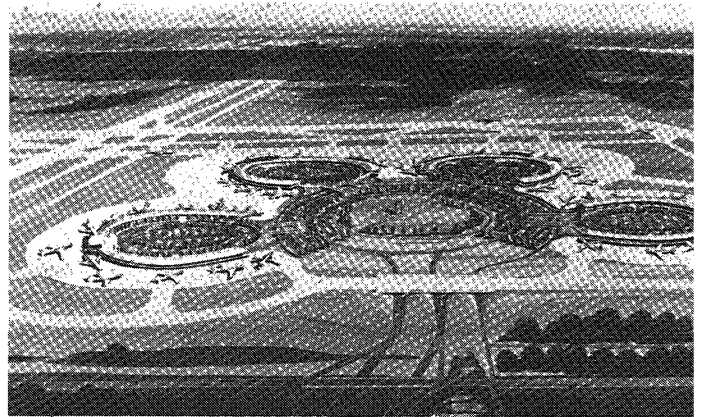
Continual emphasis is placed on providing passengers maximum convenience and access to aircraft. Terminal boarding lounges are but a few feet from the airplane.



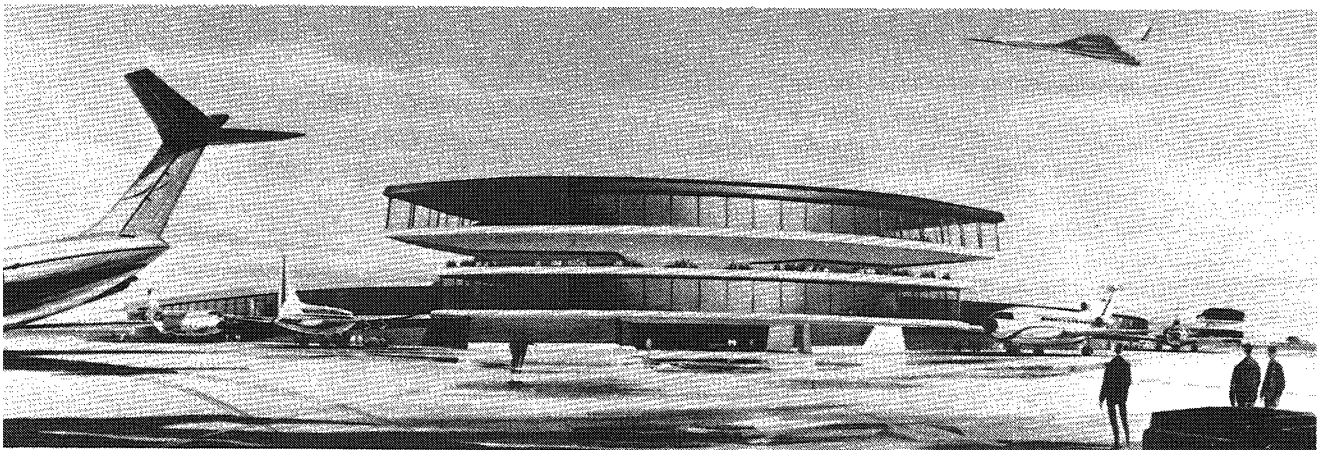
Airlines are preparing to handle 320 million pieces of passenger luggage at airports by 1970. Systems will allow passengers to claim baggage in three minutes or less in parking lots, and other terminal areas.



"Total system" airport concept includes sky-bus helicopters and V/STOL aircraft to transport passengers to satellite airports in suburban areas.



Mid-Continent International Airport at Kansas City, Mo., uses flexible "drive-to-the-gate" convenience with each terminal building serving 15 aircraft positions.



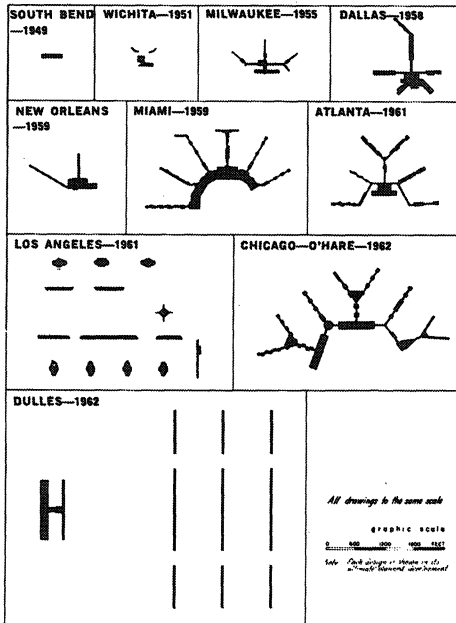
New Terminal Service Concepts to Speed Passenger Flow

Today, the emphasis is on finding better and more imaginative ways to use available airport space for terminal expansion, reduction of walking distances, preparation of airport plants to handle over double the passengers carried by today's jets, and reduction of aircraft turn-around times. Several design concepts are under development leading to this goal.

Where today one boarding gate and departure lounge is sufficient for each aircraft, tomorrow's jumbo jets and SSTs will require three or more gates and lounges. These, and concourse areas, will be on multi-levels permitting diversion of passengers to different terminal levels, and reduce visitor crowding during peak hours. Gates will be self-elevating to service all types of airline aircraft, or present-day jets will be elevated on hydraulic platforms to upper level gates so their wings overlap those of the jumbo jets parked at ground level. Moving walkways will also be used to transport passengers from terminal entrances to departure lounges.

Airport planners know that one of the major bottlenecks to be removed is ground transportation access to the airport, and are looking into high speed mass transportation systems—subways, rail lines and even a bus that can operate on both highways and railroad tracks—that operate directly to the terminal doors from downtown. Double-decking access highways to bring car, taxi and limousine traffic to the terminal entrance is under development. Ground level parking will be replaced with multi-level parking structures allowing shorter distances to travel to the terminal and protection from the weather.

EVOLUTION OF AIRPORT TERMINAL DESIGN MEETS GROWING AIRLINE REQUIREMENTS



Growing from single terminal buildings, upper left, airports have grown to multi-satellite complexes, such as Los Angeles International and Chicago O'Hare, to a system using mobile lounges to transport passengers from central terminal to plane-side, as shown at Washington's Dulles International Airport.

New Passenger Service Innovations Reduce Ticket, Baggage Claim Times

With more people purchasing tickets at the airport just prior to flight time, passenger-operated, automated airport ticketing systems are under development which will issue tickets and confirm reservations in an estimated 80 per cent less time than today. It will also be possible for passengers to go directly to the gate and board the aircraft by inserting the ticket into a redemption machine at the gate instead of checking in at the terminal ticket counter. Computer-controlled validators under development will allow gate check-in and immediate boarding.

Automation is being applied to baggage service. With 320 million pieces of luggage expected by 1970, the airlines are developing an automated delivery system using electronically-controlled carts to deliver bags to the airplane and bring luggage from planeside to claim areas, parking lot or continuing transportation in three minutes or less. The prototype system is currently under development and installation in an airport could occur in the early 1970's. A passenger would insert his claim stub into a mechanical "reader" in the claim area or outside the terminal to have his baggage delivered to him from the system. The system will also be used to transfer interline baggage between airlines. The carts, each capable of carrying 75 pounds of baggage, will travel along tracks at about 20 miles per hour, and the system will be capable of handling over 95 per cent of all commercially-manufactured luggage.

■ From the beginning of their history, the airlines have followed the policy of introducing the most advanced technology available for commercial air transportation.

Technological growth, as embodied in new and improved airline equipment, has always been a major spur to traffic growth. In turn, the increasing demand by passengers and shippers for airline service has created more jobs and new employment opportunities.

The first commercial jet liners were introduced late in 1958. At the end of 1963, airline investment in new equipment had created jobs for more than 100,000 men and women in the manufacturing industry alone. For every employee directly concerned with assembling a single airplane into the finished product there were additional workers employed by the sub-contractors, the electronic equipment companies, rubber companies, and other industries which directly contribute to the aircraft assembly process.

In the five-year period 1958-1963, revenue passenger miles increased by more than 60 per cent and this expansion of airline operations alone created more than 31,000 new jobs.

Since 1963, airline growth has generated employment at a much faster rate. For example, in the past two years, the airlines added more new jobs than during the seven-year period 1958-1964. During the single year, 1966, 33,000 additional jobs were created. Employment itself exceeded 244,000 at the end of 1966, nearly double the figure of a decade ago.

The efficient utilization of this growing labor force has been facilitated by the ambitious investment effort undertaken by the industry and the highly productive equipment and facilities which have been introduced as a result of this effort.

Investment in new turbine-powered airplanes is not the only factor which has enabled the airlines to meet the great increase in demand. Without new ground systems to support these aircraft, the airlines could not handle efficiently the volume of traffic generated today by the traveling and shipping public. Computerized reservation and flight information systems speed up both interline and intraline communications. Electromechanical systems are used to expedite the flow of baggage. Electronic data-processing improves purchasing and supply.

Investment Per Employee Rises Sharply

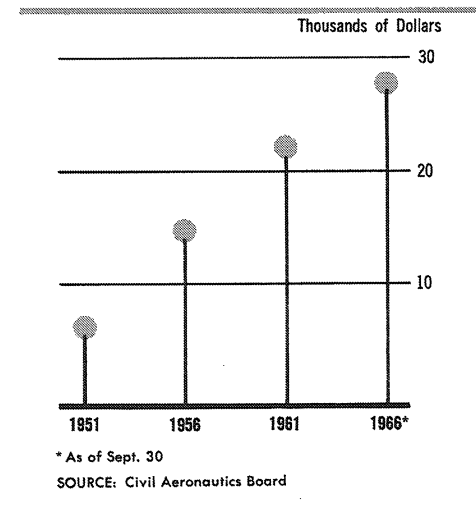
In 1966, the gross investment in flight equipment and ground facilities averaged \$28,000 per airline employee, more than two and one-half times what it was only a decade earlier.

Future growth? Passenger traffic, some 80 billion passenger miles in 1966, is expected to more than double between 1966 and 1971. Freight is expected to grow at an even faster rate, reaching by 1971 nearly three times the two billion ton miles flown in 1966.

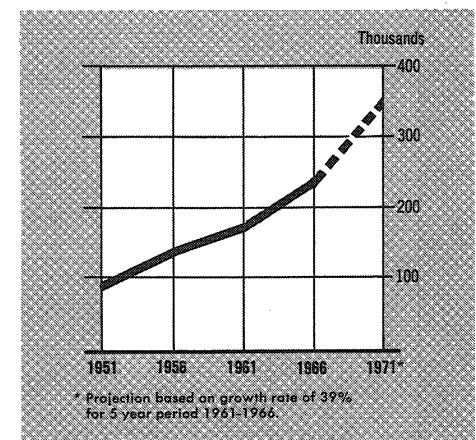
It is estimated that this growth will mean a net addition of 100,000 new airline jobs by 1971—jobs that will be among the best in industry. This is so because concurrent with airline reinvestment and planning for the future is the continual training and upgrading of airline employees. Airline training methods, already among the most imaginative in industry, are being further improved to prepare airline employees for the air transport system of the 1970's.

AIRLINE INVESTMENT AND EMPLOYMENT GROWTH

INVESTMENT PER EMPLOYEE



PROJECTION OF AIRLINE INDUSTRY TOTAL EMPLOYMENT



AVAILABLE SERVICE

U. S. Scheduled Airline Industry

	Available Ton Miles Flown	Revenue Ton Miles Flown	Ton Mile Load Factor (%)	Available Seat Miles Flown	Revenue Passenger Miles Flown	Passenger Load Factor (%)	Revenue Plane Miles Flown
Domestic Trunk Airlines							
1956.....	4,393.2	2,452.5	55.8	33,752.6	21,643.1	64.1	622.1
1961.....	7,176.2	3,435.2	47.9	52,525.0	29,534.8	56.2	676.8
1962.....	8,114.2	3,771.0	46.5	59,736.8	31,827.8	53.3	699.9
1963.....	9,223.0	4,257.6	46.2	67,601.3	36,383.8	53.8	752.7
1964.....	10,752.4	4,928.8	45.8	75,242.4	41,658.4	55.4	808.4
1965.....	12,850.6	5,983.5	46.6	88,731.2	48,987.0	55.2	926.4
1966.....	14,403.8	7,083.0	49.2	97,174.7	56,802.8	58.5	995.7
Local Service Airlines							
1956.....	145.4	66.3	45.6	1,382.5	633.2	45.8	59.5
1961.....	329.4	142.4	43.2	3,228.4	1,343.8	41.6	103.2
1962.....	388.6	170.3	43.8	3,797.5	1,607.7	42.3	113.0
1963.....	440.7	198.3	45.0	4,266.9	1,869.0	43.8	121.3
1964.....	504.0	239.5	47.5	4,836.3	2,244.5	46.4	133.5
1965.....	585.4	281.0	48.0	5,553.9	2,621.2	47.2	145.2
1966.....	761.1	371.1	48.8	6,908.1	3,467.5	50.2	165.4
Intra-Hawaiian Airlines							
1956.....	16.0	8.8	55.0	147.0	83.9	57.0	4.6
1961.....	21.6	12.5	57.9	202.3	125.6	62.1	5.2
1962.....	21.5	12.6	58.6	212.4	128.8	60.6	5.5
1963.....	25.8	14.1	54.7	239.5	144.0	60.1	5.7
1964.....	30.8	17.7	57.5	276.4	166.6	60.3	5.9
1965.....	34.2	20.2	59.1	319.7	195.2	61.1	6.7
1966.....	40.4	23.2	57.4	387.1	226.7	58.6	7.2
Helicopter Airlines (in thousands)							
1956.....	573	281	49.0	3,561	1,585	44.5	1,318
1961.....	2,183	969	44.4	18,276	8,604	47.1	2,157
1962.....	2,329	907	38.9	20,125	8,191	40.7	1,518
1963.....	3,071	1,332	43.4	27,657	12,510	45.2	1,462
1964.....	3,717	1,692	45.5	34,165	16,003	46.8	1,976
1965.....	4,338	1,968	45.4	41,413	18,811	45.4	1,984
1966.....	5,151	2,569	49.9	51,992	25,420	48.9	2,241
Intra-Alaskan Airlines							
1956.....	35.9	26.7	74.4	80.5	36.8	45.7	6.4
1961.....	20.5	11.8	57.6	105.9	46.0	43.4	7.4
1962.....	25.2	13.4	53.2	116.5	47.6	40.9	7.5
1963.....	30.6	16.4	53.6	118.0	46.6	39.5	7.5
1964.....	32.3	17.9	55.4	135.2	55.8	41.3	7.7
1965.....	31.5	18.5	58.7	149.0	65.2	43.8	7.9
1966.....	31.4	19.2	61.1	146.9	68.4	46.6	8.0

NOTE: Available Ton Miles and Revenue Ton Miles include charter operations; all other items are for scheduled services only. In some instances, individual figures may not add to Consolidated Industry totals because of rounding; Avalon Air Transport figures are included in industry totals for 1961, 1962, and 1963.

AND UTILIZATION

(In Millions Except Helicopter)

	Available Ton Miles Flown	Revenue Ton Miles Flown	Ton Mile Load Factor (%)	Available Seat Miles Flown	Revenue Passenger Miles Flown	Passenger Load Factor (%)	Revenue Plane Miles Flown
All-Cargo Airlines (Domestic)							
1956.....	230.4	175.2	76.0	.....	.....	.....	14.4
1961.....	385.2	295.7	76.6	.....	.....	.....	7.2
1962.....	615.1	472.1	76.8	.....	.....	.....	5.6
1963.....	475.6	343.3	72.2	.....	.....	.....	7.9
1964.....	550.0	395.0	71.8	.....	.....	.....	10.7
1965.....	618.3	469.2	75.9	.....	.....	.....	10.8
1966.....	705.2	554.8	78.7	.....	.....	.....	11.0
International and Territorial Airlines							
1956.....	1,225.8	785.0	64.0	8,308.3	5,226.2	62.9	151.8
1961.....	2,468.8	1,362.4	55.2	15,769.5	8,768.5	55.6	161.3
1962.....	2,925.9	1,619.9	55.4	18,724.4	10,137.8	54.1	171.5
1963.....	3,488.2	1,856.0	53.2	22,590.2	11,905.4	52.7	192.1
1964.....	4,162.7	2,228.2	53.5	25,791.4	14,352.4	55.6	214.4
1965.....	5,140.2	2,856.8	55.6	29,532.8	16,789.0	56.8	247.8
1966.....	6,654.0	3,883.7	58.4	33,175.6	19,298.4	58.2	285.7
All-Cargo Airlines (International)							
1956.....	124.0	104.0	83.9	.....	.....	.....	9.1
1961.....	173.7	133.1	76.6	.....	.....	.....	6.0
1962.....	232.2	177.5	76.4	.....	.....	.....	5.0
1963.....	243.6	173.1	71.0	.....	.....	.....	6.2
1964.....	266.6	187.2	70.2	.....	.....	.....	6.5
1965.....	397.9	264.0	66.3	.....	.....	.....	6.8
1966.....	904.3	503.1	55.6	.....	.....	.....	7.3
CONSOLIDATED INDUSTRY							
1956.....	6,171.4	3,618.6	58.6	43,674.5	27,624.8	63.3	869.3
1961.....	10,578.4	5,394.6	51.0	71,856.6	39,830.8	55.4	969.7
1962.....	12,325.9	6,238.3	50.6	82,611.9	43,760.4	53.0	1,009.8
1963.....	13,930.8	6,860.3	49.2	94,844.7	50,362.0	53.1	1,095.1
1964.....	16,302.5	8,015.9	49.2	106,315.8	58,493.7	55.0	1,189.1
1965.....	19,662.2	9,895.1	50.3	124,328.0	68,676.5	55.2	1,353.5
1966.....	23,505.4	12,440.7	52.9	137,844.5	79,889.2	58.0	1,482.5

REVENUE TON MILES

U. S. Scheduled Airline Industry

	Passenger	Priority U. S. Mail	Non Priority U. S. Mail	Express	Freight	Excess Baggage	Charter Flights	TOTAL
Domestic Trunk Airlines								
1956.....	2,091,522	77,787	13,892	49,713	190,594	23,061	5,907	2,452,476
1961.....	2,806,470	117,928	26,760	56,746	384,161	26,881	16,272	3,435,219
1962.....	3,023,888	131,711	28,501	64,879	473,955	25,430	22,665	3,771,029
1963.....	3,456,933	138,661	28,402	64,914	520,632	23,795	24,230	4,257,567
1964.....	3,958,036	151,763	29,708	70,530	650,732	22,786	45,251	4,928,807
1965.....	4,667,700	182,673	32,866	80,424	835,118	19,355	165,401	5,983,537
1966.....	5,429,052	236,017	41,420	87,128	988,485	13,160	287,751	7,083,013
Local Service Airlines								
1956.....	59,865	1,076	343	1,686	1,619	321	1,352	66,262
1961.....	127,602	2,773	583	3,019	5,491	876	2,084	142,428
1962.....	152,676	3,303	529	3,772	7,218	992	1,837	170,327
1963.....	177,554	3,765	587	4,311	9,024	1,006	2,099	198,347
1964.....	213,233	4,350	655	5,080	11,923	1,194	3,047	239,481
1965.....	249,244	5,520	813	5,983	15,485	1,068	2,872	280,986
1966.....	330,286	7,770	1,050	7,099	19,781	667	4,444	371,097
Intra-Hawaiian Airlines								
1956.....	6,991	65	-----	-----	1,478	19	236	8,789
1961.....	10,047	82	14	-----	1,846	31	494	12,515
1962.....	10,308	90	19	-----	2,100	51	9	12,578
1963.....	11,518	93	21	-----	2,152	40	284	14,109
1964.....	14,578	99	26	-----	2,472	58	433	17,665
1965.....	17,079	106	229	-----	2,431	69	285	20,189
1966.....	19,834	114	751	-----	2,455	59	11	23,224
Helicopter Airlines								
1956.....	145	91	-----	36	7	1	1	281
1961.....	819	94	-----	39	7	4	7	970
1962.....	778	65	-----	44	6	3	10	907
1963.....	1,189	74	-----	44	6	5	15	1,332
1964.....	1,520	92	-----	45	6	6	24	1,692
1965.....	1,787	84	-----	60	10	6	20	1,968
1966.....	2,415	59	-----	69	10	8	8	2,569
Intra-Alaskan Airlines								
1956.....	3,840	1,269	-----	3	2,119	139	19,311	26,681
1961.....	4,742	2,208	-----	-----	2,828	135	1,929	11,844
1962.....	4,874	2,576	-----	-----	2,620	147	3,211	13,428
1963.....	4,797	2,832	-----	-----	2,640	156	6,025	16,449
1964.....	5,720	3,089	-----	-----	3,176	172	5,754	17,910
1965.....	6,680	3,701	1	-----	3,616	188	4,271	18,457
1966.....	6,995	4,095	-----	-----	3,665	161	4,251	19,167

NOTE: In some instances individual figures may not add to totals because of rounding; Foreign Mail ton miles carried by International & Territorial Airlines and by All-Cargo Airlines in international operations are included only in the total ton mile column; Avalon Air Transport figures are included in the Consolidated Industry totals for 1961, 1962, and 1963.

OF TRAFFIC CARRIED

(In Thousands of Revenue Ton Miles)

	Passenger	Priority U. S. Mail	Non Priority U. S. Mail	Express	Freight	Excess Baggage	Charter Flights	TOTAL
All-Cargo Airlines (Domestic)								
1956.....	-----	250	903	846	102,678	-----	70,508	175,185
1961.....	-----	407	261	753	78,287	-----	215,996	295,705
1962.....	-----	175	146	417	81,816	-----	389,536	472,090
1963.....	-----	504	505	748	110,096	-----	231,409	343,262
1964.....	-----	896	951	1,818	147,994	-----	243,350	395,008
1965.....	-----	1,173	1,087	2,475	166,362	-----	298,111	469,208
1966.....	-----	1,639	1,062	3,071	189,714	-----	359,331	554,817
International and Territorial Airlines								
1956.....	523,860	56,267	-----	295	114,877	11,778	69,831	784,996
1961.....	877,023	93,205	42,509	604	216,560	13,190	110,299	1,362,479
1962.....	1,017,184	108,987	52,760	798	263,931	15,125	150,848	1,619,903
1963.....	1,187,056	115,810	54,478	794	295,610	16,822	174,411	1,855,950
1964.....	1,437,259	124,768	45,413	823	393,858	16,922	198,323	2,228,175
1965.....	1,686,801	173,158	70,579	908	596,416	22,093	296,441	2,856,752
1966.....	1,947,889	283,744	158,663	983	720,627	24,184	737,389	3,883,708
All-Cargo Airlines (International)								
1956.....	-----	104	312	387	37,629	-----	65,534	103,966
1961.....	-----	6,425	5,968	4	43,764	-----	76,823	133,094
1962.....	-----	4,441	6,602	14	66,537	-----	99,759	177,497
1963.....	-----	4,663	6,205	21	86,370	-----	75,615	173,121
1964.....	-----	4,856	4,643	14	91,327	-----	86,188	187,202
1965.....	-----	5,878	5,109	10	110,856	-----	141,969	263,986
1966.....	-----	9,333	4,801	1,340	126,000	-----	361,607	503,149
CONSOLIDATED INDUSTRY								
1956.....	2,686,223	136,909	15,450	52,966	451,001	35,319	232,680	3,618,636
1961.....	3,827,040	223,125	76,103	61,165	732,950	41,117	423,931	5,394,631
1962.....	4,209,940	251,349	88,563	69,924	898,187	41,748	668,135	6,238,261
1963.....	4,839,124	266,402	90,200	70,832	1,026,533	41,824	514,169	6,860,302
1964.....	5,630,345	289,913	81,396	78,310	1,301,487	41,137	582,369	8,015,941
1965.....	6,629,291	372,294	110,684	89,859	1,730,294	42,769	909,370	9,895,082
1966.....	7,736,471	542,771	207,747	99,690	2,050,737	38,239	1,754,792	12,440,744

OPERATING

U. S. Scheduled Airline Industry

	Passenger	U. S. Mail		Public Service Revenue	Express	Freight	Other ¹	Total
		Priority	Non-Priority					
Domestic Trunk Airlines								
1956.....	1,142,196	31,593	²	2,609	18,102	42,171	26,161	1,262,832
1961.....	1,826,821	43,958	5,073	-----	21,447	85,288	43,781	2,026,368
1962.....	2,020,975	49,002	5,486	-----	24,332	102,364	47,935	2,250,094
1963.....	2,208,430	51,247	5,471	988	25,246	116,466	44,068	2,451,915
1964.....	2,504,861	56,262	5,838	3,408	27,247	140,962	52,297	2,790,877
1965.....	2,908,045	64,181	6,354	3,508	29,703	174,150	77,614	3,263,556
1966 ^P	3,232,495	79,001	7,988	2,110	31,601	201,277	105,959	3,660,431
Local Service Airlines								
1956.....	40,165	1,107	²	23,210	776	751	1,702	67,711
1961.....	103,623	2,229	216	62,937	1,682	3,089	3,281	177,056
1962.....	125,467	2,674	188	67,948	2,061	4,070	3,691	206,099
1963.....	143,171	2,950	203	67,882	2,508	5,031	4,229	225,975
1964.....	169,244	3,327	220	65,779	2,781	6,698	5,679	253,728
1965.....	203,423	4,103	261	66,001	3,196	8,764	5,614	291,363
1966 ^P	264,730	5,316	298	56,754	3,763	10,950	7,873	349,683
Intra-Hawaiian Airlines								
1956.....	6,043	52	²	288	-----	781	266	7,430
1961.....	11,642	67	5	697	-----	984	690	14,085
1962.....	11,824	72	6	355	-----	1,161	362	13,780
1963.....	13,129	77	6	716	-----	1,179	393	15,499
1964.....	14,924	80	8	878	-----	1,410	599	17,898
1965.....	17,074	86	46	1,124	-----	1,378	731	20,439
1966 ^P	19,675	90	140	1,124	-----	1,375	875	23,280
Helicopter Airlines ¹								
1956.....	438	235	²	2,833	116	29	60	3,711
1961.....	2,772	253	-----	5,258	189	39	89	8,603
1962.....	2,501	174	-----	5,518	215	39	135	8,583
1963.....	3,284	193	-----	4,641	217	41	261	8,637
1964.....	4,814	240	-----	4,300	213	54	554	10,174
1965.....	5,645	221	-----	2,712	216	85	2,257	11,135
1966 ^P	8,584	157	-----	-----	295	98	4,299	13,433
Intra-Alaskan Airlines								
1956.....	4,528	1,794	-----	2,837	5	1,273	7,359	17,796
1961.....	6,181	2,529	-----	6,352	-----	1,775	2,030	18,867
1962.....	6,326	2,873	-----	5,139	-----	1,691	2,705	18,735
1963.....	6,244	3,077	-----	5,317	-----	1,723	3,865	20,225
1964.....	7,267	3,192	-----	5,590	-----	2,031	3,868	21,950
1965.....	7,860	3,650	-----	5,266	-----	2,119	3,106	22,002
1966 ^P	7,969	3,958	-----	5,085	-----	1,992	3,341	22,346

¹ Includes revenues from excess baggage, foreign mail, charter operations, and incidental revenues.

² Included with priority mail.
^P Preliminary

REVENUES

(In Thousands of Dollars)

	Passenger	U. S. Mail		Public Service Revenue	Express	Freight	Other ¹	Total
		Priority	Non-Priority					
All-Cargo Airlines (Domestic)								
1956	-----	263	²	-----	319	16,660	23,043	40,285
1961	-----	154	49	-----	246	13,166	45,766	59,380
1962	-----	81	25	-----	120	11,662	78,813	90,702
1963	-----	182	83	-----	237	15,562	51,523	67,586
1964	-----	358	185	-----	563	20,006	53,047	74,158
1965	-----	447	207	-----	681	22,817	58,127	82,279
1966 ^P	-----	631	201	-----	858	27,635	62,901	92,226
International and Territorial Airlines								
1956	349,019	27,609	-----	11,711	94	38,198	44,529	471,160
1961	533,159	45,361	10,457	3,709	199	63,066	66,439	722,390
1962	595,221	53,905	13,030	3,433	235	71,017	73,603	810,446
1963	692,801	57,697	13,613	2,679	203	80,175	84,286	931,452
1964	781,649	56,943	11,527	2,851	306	99,990	86,753	1,040,020
1965	887,335	63,170	16,989	2,020	319	130,800	110,262	1,210,895
1966 ^P	995,095	96,605	33,378	1,743	314	149,074	197,403	1,473,613
All-Cargo Airlines (International)								
1956	-----	101	-----	-----	127	8,900	17,814	26,942
1961	-----	4,018	1,046	-----	1	9,388	21,838	36,291
1962	-----	2,380	1,786	-----	4	11,747	23,767	39,683
1963	-----	2,486	1,710	-----	9	14,472	18,870	37,548
1964	-----	2,344	1,273	-----	4	14,506	23,907	42,032
1965	-----	2,380	1,377	-----	3	15,999	36,431	56,191
1966 ^P	-----	3,578	1,479	-----	3	19,471	75,295	99,825
CONSOLIDATED INDUSTRY								
1956	1,542,389	62,754	²	43,488	19,539	108,763	120,934	1,897,867
1961	2,484,650	98,585	16,846	78,952	23,765	176,802	183,956	3,063,555
1962	2,762,697	111,178	20,520	82,393	26,968	203,759	231,216	3,438,731
1963	3,067,193	117,916	21,086	82,222	28,421	234,653	207,561	3,759,051
1964	3,482,760	122,746	19,050	82,806	31,114	285,657	226,706	4,250,838
1965	4,029,383	138,238	25,234	80,631	34,118	356,113	294,141	4,957,859
1966 ^P	4,528,549	189,337	43,484	66,817	36,833	411,870	457,947	5,734,837

Note: Avalon Air Transport figures are included in the Consolidated Industry totals for 1961, 1962, and 1963.

DISTRIBUTION OF

U. S. Scheduled Airline Industry

	Flying Operations	Maintenance	General Services & Administration				Total G. S. & A.	Deprecia- tion & Amorti- zation	Total Operating Expenses
			Passenger Service	Aircraft & Traffic Servicing	Promotion & Sales	Adminis- trative			
Domestic Trunk Airlines									
1956.....	340,671	239,530	-----	-----	-----	-----	475,710	106,319	1,162,230
1961.....	574,519	399,809	156,810	328,302	225,554	82,374	793,039	270,117	2,037,485
1962.....	593,816	444,049	164,546	362,912	241,895	89,255	858,608	278,692	2,175,166
1963.....	626,708	464,803	179,890	394,180	261,691	93,187	928,949	302,221	2,322,682
1964.....	676,974	514,552	213,988	425,197	299,629	100,945	1,039,759	262,750	2,494,035
1965.....	767,902	566,294	266,279	483,429	349,045	117,223	1,215,976	297,135	2,847,308
1966 ^P	869,835	597,151	311,153	559,772	410,094	132,878	1,413,897	327,580	3,208,463
Local Service Airlines									
1956.....	21,615	12,610	-----	-----	-----	-----	31,353	2,716	68,294
1961.....	48,664	35,989	8,389	42,368	13,515	9,186	73,457	9,586	167,697
1962.....	55,082	42,309	9,726	48,095	16,298	10,611	84,730	10,604	192,724
1963.....	60,846	47,256	10,660	53,143	18,617	11,585	94,004	11,909	214,015
1964.....	66,787	52,735	11,739	59,053	20,639	13,051	104,482	12,758	236,762
1965.....	74,233	59,894	13,426	66,346	23,469	14,874	118,114	15,098	267,340
1966 ^P	89,001	69,722	17,313	80,332	29,496	18,366	145,507	21,175	325,405
Intra-Hawaiian Airlines									
1956.....	2,032	1,258	-----	-----	-----	-----	3,601	417	7,308
1961.....	3,063	2,867	392	2,321	2,181	1,540	6,434	1,092	13,456
1962.....	2,933	2,677	409	2,430	2,074	1,599	6,512	1,106	13,229
1963.....	3,219	2,923	512	2,706	2,337	1,866	7,420	1,129	14,690
1964.....	3,851	3,574	576	2,996	2,439	1,726	7,737	1,360	16,523
1965.....	4,514	4,002	646	3,301	2,722	1,812	8,482	1,528	18,527
1966 ^P	6,445	4,374	710	3,774	2,999	2,064	9,546	1,832	22,197
Helicopter Airlines ¹									
1956.....	694	981	-----	-----	-----	-----	1,375	606	3,656
1961.....	1,946	2,633	-----	-----	-----	-----	3,086	1,143	8,807
1962.....	1,791	2,453	-----	-----	-----	-----	3,378	1,212	8,835
1963.....	1,744	2,789	-----	-----	-----	-----	3,305	1,000	8,839
1964.....	1,941	3,541	-----	-----	-----	-----	3,817	997	10,295
1965.....	2,250	3,770	-----	-----	-----	-----	4,354	995	11,369
1966 ^P	3,162	4,941	-----	-----	-----	-----	5,333	1,167	14,603
Intra-Alaskan Airlines ¹									
1956.....	6,611	3,593	-----	-----	-----	-----	6,063	668	16,935
1961.....	4,847	4,445	-----	-----	-----	-----	5,895	1,006	16,192
1962.....	5,334	4,812	-----	-----	-----	-----	6,191	1,084	17,421
1963.....	6,112	5,274	-----	-----	-----	-----	6,746	1,220	19,353
1964.....	6,293	5,689	-----	-----	-----	-----	7,138	1,190	20,310
1965.....	5,775	5,919	-----	-----	-----	-----	7,541	1,383	20,618
1966 ^P	5,622	5,252	-----	-----	-----	-----	7,643	1,637	20,154

^P Preliminary.

¹ Detailed General Services & Administration expense data not available.

OPERATING EXPENSES

(In Thousands of Dollars)

	Flying Operations	Maintenance	General Services & Administration				Total G. S. & A.	Deprecia- tion & Amorti- zation	Total Operating Expenses
			Passenger Service	Aircraft & Traffic Servicing	Promotion & Sales	Adminis- trative			
All-Cargo Airlines (Domestic)									
1956	16,232	8,785	-----	-----	-----	-----	11,638	4,135	40,790
1961	23,117	12,395	1,444	6,776	2,100	3,728 ³	14,048	13,124	62,685
1962	31,061	20,849	1,847	8,411	2,169	4,035 ³	16,461	12,029	80,401
1963	23,112	16,518	1,744	8,478	2,342	3,784	16,348	10,330	66,308
1964	24,237	16,476	2,921	11,070	3,245	3,724	20,960	9,165	70,838
1965	24,270	19,350	1,266	12,178	3,107	3,826	20,378	9,274	73,270
1966 ^P	27,875	17,452	1,500	12,146	2,837	3,808	20,291	7,332	72,951
International and Territorial Airlines ²									
1956	132,529	76,145	-----	-----	-----	-----	192,110	35,473	436,257
1961	186,561	109,492	52,220	103,275	107,327	35,326	298,148	104,483	698,685
1962	193,422	113,602	56,045	111,892	116,745	40,790	325,472	91,357	723,853
1963	216,834	117,729	68,904	122,803	133,299	44,383	369,389	95,510	799,462
1964	238,427	145,186	78,371	142,773	151,550	51,729	424,423	88,151	896,187
1965	262,627	146,261	98,257	163,124	170,736	60,359	492,477	100,194	1,001,560
1966 ^P	329,104	181,019	125,988	194,429	197,013	61,064	585,547	123,502	1,219,172
All-Cargo Airlines (International)									
1956	12,597	6,427	-----	-----	-----	-----	7,397	1,086	27,507
1961	15,464	8,489	1,417	4,819	1,579	2,034	9,849	4,091	37,890
1962	12,700	8,413	1,749	5,001	1,615	2,367	10,732	4,699	36,543
1963	10,775	7,650	1,476	4,777	1,693	2,261	10,206	5,043	33,674
1964	11,384	7,613	1,794	5,239	1,700	2,887	11,621	5,173	35,790
1965	16,236	10,623	2,038	7,072	2,055	2,375	13,540	5,382	45,782
1966 ^P	34,770	18,582	1,431	11,392	2,791	3,725	19,339	6,765	79,456
CONSOLIDATED INDUSTRY ²									
1956	532,981	349,329	-----	-----	-----	-----	729,247	151,420	1,762,977
1961	858,328	576,235	220,671	487,861	352,256	143,437	1,204,225	404,708	3,043,496
1962	896,319	639,275	234,323	538,741	380,796	158,450	1,312,310	400,828	3,248,732
1963	949,417	665,006	263,185	586,086	419,978	167,212	1,436,462	428,379	3,479,264
1964	1,029,893	749,367	309,389	646,328	479,203	185,016	1,619,937	381,543	3,780,741
1965	1,157,808	816,113	381,912	735,451	551,134	212,364	1,880,862	430,990	4,285,773
1966 ^P	1,365,813	898,493	458,095	861,845	645,230	221,904	2,207,104	490,990	4,962,400

² The total of General Services and Administration expense is greater than the sum of the detail accounts since some airlines report total expense only.

³ Includes General Services and Administration expenses of Aaxico Airlines, Inc.

Note: Avalon Air Transport figures are included in the Consolidated Industry totals for 1961, 1962 and 1963.

SUMMARY OF

U. S. Scheduled Airline Industry

	Total Operating Revenues	Total Operating Expenses	Net Operating Income	Interest on Long-Term Debt	Other Non- Operating Income (Net)	Income Taxes	Net Profit or Loss ¹	Rate of Return on Invest- ment ² (%)	Profit Margin on Sales ³ (%)
Domestic Trunk Airlines									
1956	1,262,832	1,162,230	100,602	10,177	24,128	56,842	57,852	9.6	4.6
1961	2,026,368	2,037,485	-11,118	61,569	20,531	-12,865	-34,568	1.5	---
1962	2,250,094	2,175,166	74,928	72,364	26,812	22,360	8,196	4.1	0.4
1963	2,451,915	2,322,682	129,233	70,103	13,626	59,640	13,117	4.3	0.5
1964	2,790,877	2,494,035	296,841	69,260	17,030	110,250	134,362	9.6	4.8
1965	3,263,556	2,847,308	416,249	73,222	26,964	148,101	221,889	11.2	6.8
1966 ^P	3,660,431	3,208,463	451,968	88,041	38,151	164,948	237,131	9.7	6.5
Local Service Airlines									
1956	67,711	68,294	-583	434	166	-50	-487	-0.3	---
1961	177,056	167,697	9,359	3,277	707	3,147	4,841	11.8	2.7
1962	206,099	192,724	13,374	3,748	1,475	5,263	5,962	11.7	2.9
1963	225,975	214,015	11,959	3,905	964	4,374	4,872	9.4	2.2
1964	253,728	236,762	16,966	4,160	737	5,948	7,776	10.1	3.1
1965	291,363	267,340	24,023	5,189	2,051	8,320	12,722	10.4	4.4
1966 ^P	349,683	325,405	24,278	9,211	3,891	6,882	12,082	7.7	3.5
Intra-Hawaiian Airlines									
1956	7,430	7,308	122	103	-7	---	83	5.8	1.1
1961	14,085	13,456	629	516	-99	---	133	6.5	0.9
1962	13,780	13,229	551	445	-65	28	-50	4.3	---
1963	15,499	14,690	809	485	-402	---	-213	3.2	---
1964	17,898	16,523	1,375	417	104	139	868	13.7	4.8
1965	20,439	18,527	1,911	468	105	568	980	11.1	4.8
1966 ^P	23,280	22,197	1,083	623	109	239	330	5.2	1.4
Helicopter Airlines									
1956	3,711	3,656	55	23	-39	30	32	1.4	0.9
1961	8,603	8,807	-205	49	68	-78	-46	0.1	---
1962	8,583	8,835	-252	233	129	-223	89	4.0	1.0
1963	8,637	8,839	-202	303	245	-107	-154	1.6	---
1964	10,174	10,295	-121	318	361	85	-197	0.7	---
1965	11,135	11,369	-233	388	227	166	-438	-1.5	---
1966 ^P	13,433	14,603	-1,170	346	200	-305	-907	-5.9	---
Intra-Alaskan Airlines									
1956	17,796	16,935	861	88	64	320	587	15.2	3.3
1961	18,867	16,192	2,675	296	15	1,417	914	14.5	4.8
1962	18,735	17,421	1,314	288	46	563	531	9.2	2.8
1963	20,225	19,353	872	290	96	457	221	5.6	1.1
1964	21,950	20,310	1,640	260	21	613	1,171	14.8	5.3
1965	22,002	20,618	1,384	299	100	701	470	6.5	2.1
1966 ^P	22,346	20,154	2,192	312	28	732	1,280	12.4	5.7

^P Preliminary.

¹ Net Profit or Loss shown is after "Special Items," which are not included in the detail. Therefore, the items do not add to the profit figures shown.

² An alternative method of computation approved by members of the ATA Airline Finance and Accounting Conference, which reflects the value of leased flight equipment and other component differences, results in a rate of return of 8.2 per cent for the domestic trunk carriers and 6.1 per cent for the local service airlines. Because of unavailability of data at time of publication, this method could not be used to compute rates of return for other classes of carriers or the consolidated industry.

PROFIT OR LOSS

(In Thousands of Dollars)

	Total Operating Revenues	Total Operating Expenses	Net Operating Income	Interest on Long-term Debt	Other Non- Operating Income (Net)	Income Taxes	Net Profit or Loss ¹	Rate of Return on Invest- ment ² (%)	Profit Margin on Sales ³ (%)
All-Cargo Airlines (Domestic)									
1956.....	40,285	40,790	-505	368	4,303	1,062	2,368	10.6	5.9
1961.....	59,380	62,685	-3,305	2,366	717	-540	-4,577	-3.2	---
1962.....	90,702	80,401	10,301	4,775	2,897	4,108	4,355	10.4	4.8
1963.....	67,586	66,308	1,279	4,302	1,277	-545	-1,290	3.4	---
1964.....	74,158	70,838	3,319	3,824	1,140	636	-1	4.0	---
1965.....	82,279	73,270	9,008	3,789	625	3,280	2,720	7.2	3.3
1966 ^p	92,226	72,951	19,275	2,376	1,512	7,363	11,047	18.0	12.0
International and Territorial Airlines									
1956.....	471,160	436,257	34,903	3,471	8,576	18,344	19,814	8.3	4.2
1961.....	722,390	698,685	23,706	24,275	4,795	5,558	-2,263	3.1	---
1962.....	810,446	723,853	86,593	26,337	4,893	32,885	33,073	8.7	4.1
1963.....	931,452	799,462	131,991	24,234	6,247	50,287	63,012	13.1	6.8
1964.....	1,040,020	896,187	143,833	22,980	9,700	56,418	76,731	13.3	7.4
1965.....	1,210,895	1,001,560	209,335	25,896	6,578	73,477	121,883	14.7	10.1
1966 ^p	1,473,613	1,219,172	254,441	34,533	26,550	95,403	151,054	14.2	10.3
All-Cargo Airlines (International)									
1956.....	26,942	27,507	-565	193	325	149	-587	-2.9	---
1961.....	36,291	37,890	-1,599	1,628	-8	---	-2,240	-2.1	---
1962.....	39,683	36,543	3,139	2,841	-356	---	118	7.7	0.3
1963.....	37,548	33,674	3,874	2,874	-299	---	-1,072	4.6	---
1964.....	42,032	35,790	6,242	3,039	259	---	2,462	11.6	5.9
1965.....	56,191	45,782	10,409	2,876	22	---	7,555	21.7	13.4
1966 ^p	99,825	79,456	20,369	2,729	1,125	2,165	15,554	31.9	15.6
CONSOLIDATED INDUSTRY									
1956.....	1,897,867	1,762,977	134,890	14,857	37,516	76,697	79,662	8.9	4.2
1961.....	3,063,555	3,043,496	20,059	93,982	26,725	-3,375	-37,881	2.1	---
1962.....	3,438,731	3,248,732	189,999	111,036	35,829	64,984	52,319	5.7	1.5
1963.....	3,759,051	3,479,264	279,787	106,497	21,764	114,105	78,480	6.5	2.1
1964.....	4,250,838	3,780,741	470,097	104,258	29,352	174,088	223,172	10.4	5.3
1965.....	4,957,859	4,285,773	672,086	112,127	36,671	234,612	367,783	12.0	7.4
1966 ^p	5,734,837	4,962,400	772,436	138,171	71,564	277,428	427,572	11.1	7.5

³ Profit as per cent of revenues.

Note: Avalon Air Transport figures are included in the Consolidated Industry totals for 1961, 1962, and 1963.

ASSETS, LIABILITIES AND

U. S. Scheduled Airline Industry

	1956	1961	1962	1963	1964	1965	(Sept. 30) 1966
Domestic Trunk Airlines ¹							
<i>Assets</i>							
Current Assets.....	439,826	694,186	810,571	873,744	882,685	1,156,126	1,229,927
Investments and Special Funds.....	146,147	139,299	110,957	178,513	175,080	324,584	439,519
Flight Equipment.....	1,097,049	2,759,409	3,021,444	3,050,528	3,477,702	3,864,966	4,482,597
Reserve for Depreciation and Airworthiness.....	-563,513	-1,083,111	-1,221,807	-1,339,415	-1,399,189	-1,509,256	-1,626,106
Ground Property and Equipment.....	180,610	351,737	371,061	391,176	425,971	479,091	521,057
Reserve for Depreciation.....	-89,218	-175,025	-187,769	-208,126	-231,432	-250,723	-267,206
Other Property.....	41,359	63,709	27,316	59,060	50,547	65,734	92,896
Deferred Charges.....	19,572	69,762	58,952	33,227	38,895	35,347	44,411
Total Assets.....	1,271,832	2,819,953	2,990,724	3,038,708	3,420,257	4,165,869	4,917,094
<i>Liabilities and Equity</i>							
Current Liabilities.....	334,159	523,565	592,202	657,478	686,810	789,602	818,976
Long-Term Debt.....	324,071	1,408,938	1,449,940	1,330,921	1,436,105	1,596,918	1,954,406
Other Non-Current Liabilities.....	-----	22,203	27,554	15,932	6,074	15,454	15,321
Deferred Credits.....	37,638	148,173	190,152	239,774	321,470	377,687	435,574
Stockholders' Equity—Net of Treasury Stock.....	575,964	717,075	730,875	794,604	969,799	1,386,207	1,692,817
Preferred Stock.....	16,591	34,162	33,552	20,672	17,433	16,134	15,345
Common Stock.....	88,943	128,124	133,085	151,926	163,033	191,742	206,766
Other Paid-In Capital.....	178,059	292,126	303,713	353,189	385,104	470,160	586,348
Retained Earnings.....	292,371	263,276	261,668	270,426	405,513	709,203	885,463
Less: Treasury Stock.....	-----	613	1,143	1,608	1,284	1,031	1,106
Total Liabilities and Equity.....	1,271,832	2,819,953	2,990,724	3,038,708	3,420,257	4,165,869	4,917,094
Local Service Airlines							
<i>Assets</i>							
Current Assets.....	14,874	44,202	49,500	55,114	66,051	85,449	112,997
Investments and Special Funds.....	1,439	2,428	4,074	10,203	13,000	19,553	23,773
Flight Equipment.....	26,106	95,492	107,590	121,011	135,604	191,982	252,144
Reserve for Depreciation and Airworthiness.....	-13,699	-36,484	-39,671	-46,265	-50,032	-59,423	-64,440
Ground Property and Equipment.....	5,796	13,688	15,722	17,663	19,707	22,779	27,666
Reserve for Depreciation.....	-2,949	-6,878	-8,242	-9,632	-11,144	-12,385	-13,492
Other Property.....	3,689	4,784	4,295	2,576	2,595	8,343	17,238
Deferred Charges.....	1,598	5,415	4,987	5,301	5,592	6,233	12,166
Total Assets.....	36,854	122,647	138,263	155,974	181,373	262,531	368,050
<i>Liabilities and Equity</i>							
Current Liabilities.....	17,513	44,199	49,114	51,047	51,632	68,766	79,398
Long-Term Debt.....	7,800	50,067	52,624	61,540	69,730	112,038	188,816
Other Non-Current Liabilities.....	44	58	142	479	474	57	59
Deferred Credits.....	242	618	1,301	2,555	3,202	4,297	3,732
Stockholders' Equity—Net of Treasury Stock.....	11,255	27,704	35,083	40,354	56,333	77,372	96,046
Preferred Stock.....	163	2,665	2,323	2,100	1,887	952	755
Common Stock.....	6,736	10,598	11,180	12,749	15,091	17,505	19,063
Other Paid-In Capital.....	4,890	9,254	10,870	10,816	17,676	27,628	37,483
Retained Earnings.....	-427	5,263	10,818	14,798	21,772	31,322	38,780
Less: Treasury Stock.....	107	73	108	108	92	35	35
Total Liabilities and Equity.....	36,854	122,647	138,263	155,974	181,373	262,531	368,050

¹ Balance sheet data for Domestic Trunk Airlines includes their international as well as domestic operations.

STOCKHOLDERS' EQUITY

(In Thousands of Dollars)

	1965	1961	1962	1963	1964	1965	(Sept. 30) 1966
Intra-Hawaiian Airlines							
<i>Assets</i>							
Current Assets.....	1,241	3,680	3,462	3,152	3,405	6,465	5,700
Investments and Special Funds.....	14	9	9	27	319	1,963	1,113
Flight Equipment.....	6,057	12,047	12,242	13,483	14,101	13,330	18,416
Reserve for Depreciation and Airworthiness.....	-3,070	-4,679	-5,995	-6,703	-7,054	-6,174	-6,838
Ground Property and Equipment.....	1,277	2,553	2,587	2,885	3,314	3,446	4,195
Reserve for Depreciation.....	-847	-1,354	-1,225	-1,374	-1,530	-1,616	-1,799
Other Property.....	17	269	228	491	229	638	722
Deferred Charges.....	168	1,145	1,060	727	545	760	1,558
Total Assets.....	4,857	13,667	12,371	12,686	13,328	18,812	23,065
<i>Liabilities and Equity</i>							
Current Liabilities.....	1,520	3,719	3,578	3,846	3,877	4,897	5,009
Long-Term Debt.....	1,702	6,658	5,555	5,754	5,156	8,240	11,565
Other Non-Current Liabilities.....	—	—	—	18	113	120	160
Deferred Credits.....	68	74	71	35	87	335	397
Stockholders' Equity—Net of Treasury Stock.....	1,567	3,217	3,167	3,034	4,096	5,221	5,934
Preferred Stock.....	—	1,570	1,555	1,458	1,211	573	399
Common Stock.....	1,981	1,361	1,375	1,546	1,921	2,852	3,080
Other Paid-In Capital.....	832	1,793	1,793	1,799	1,866	1,405	1,413
Retained Earnings.....	-1,246	-1,507	-1,558	-1,770	-902	391	1,041
Less: Treasury Stock.....	—	—	—	—	—	—	—
Total Liabilities and Equity.....	4,857	13,667	12,371	12,686	13,328	18,812	23,065
Helicopter Airlines							
<i>Assets</i>							
Current Assets.....	2,309	3,098	3,620	3,263	4,401	5,856	7,193
Investments and Special Funds.....	290	588	215	199	598	736	695
Flight Equipment.....	3,877	5,347	10,019	9,760	9,608	10,363	11,484
Reserve for Depreciation and Airworthiness.....	-1,691	-3,488	-2,934	-2,958	-3,385	-3,995	-4,397
Ground Property and Equipment.....	576	1,107	1,349	1,555	1,783	1,919	2,002
Reserve for Depreciation.....	-197	-665	-764	-894	-1,026	-1,160	-1,205
Other Property.....	71	1,387	113	152	126	241	221
Deferred Charges.....	196	730	859	784	884	1,205	1,248
Total Assets.....	5,431	8,103	12,474	11,861	12,988	15,165	17,241
<i>Liabilities and Equity</i>							
Current Liabilities.....	736	2,303	2,208	2,580	3,008	5,015	4,786
Long-Term Debt.....	817	492	4,923	3,944	4,508	4,352	4,228
Other Non-Current Liabilities.....	—	38	31	21	6	5	3,205
Deferred Credits.....	69	308	236	233	226	403	151
Stockholders' Equity—Net of Treasury Stock.....	3,809	4,963	5,078	5,086	5,240	5,390	4,871
Preferred Stock.....	—	—	—	1,043	1,456	—	—
Common Stock.....	702	957	964	982	994	2,963	2,981
Other Paid-In Capital.....	2,435	2,673	2,692	2,647	2,573	2,648	2,699
Retained Earnings.....	672	1,334	1,424	414	217	-221	-809
Less: Treasury Stock.....	—	—	—	—	—	—	—
Total Liabilities and Equity.....	5,431	8,103	12,474	11,861	12,988	15,165	17,241

ASSETS, LIABILITIES AND

U. S. Scheduled Airline Industry

	1956	1961	1962	1963	1964	1965	(Sept. 30) 1966
International and Territorial Airlines							
<i>Assets</i>							
Current Assets.....	114,807	201,199	209,998	203,892	186,731	230,019	342,487
Investments and Special Funds.....	39,957	64,220	66,030	83,388	101,861	112,659	164,052
Flight Equipment.....	276,046	548,936	593,675	602,852	701,856	739,019	883,772
Reserve for Depreciation and Airworthiness.....	-121,023	-206,783	-242,100	-271,755	-284,887	-262,583	-290,610
Ground Property and Equipment.....	33,746	58,925	62,553	65,928	94,355	99,902	105,527
Reserve for Depreciation.....	-19,529	-32,075	-35,443	-38,682	-42,317	-47,905	-52,838
Other Property.....	2,527	6,214	3,603	4,567	6,103	20,534	29,902
Deferred Charges.....	5,466	36,485	31,459	31,099	31,354	26,355	29,448
Total Assets.....	331,997	677,119	689,776	681,289	795,056	918,000	1,211,741
<i>Liabilities and Equity</i>							
Current Liabilities.....	95,434	157,468	172,339	198,760	183,237	209,828	278,956
Long-Term Debt.....	86,082	318,390	301,520	226,231	274,501	338,496	473,590
Other Non-Current Liabilities.....	1,051	3,131	4,385	1,863	19,743	2,569	2,048
Deferred Credits.....	6,083	28,630	31,305	52,531	62,293	56,714	53,237
Stockholders' Equity—Net of Treasury Stock.....	143,347	169,501	180,225	201,902	255,282	310,392	403,910
Preferred Stock.....	150	—	—	—	—	—	534
Common Stock.....	16,269	19,413	19,483	19,239	19,703	20,064	21,261
Other Paid-In Capital.....	71,927	79,031	80,901	78,412	96,190	106,519	139,545
Retained Earnings.....	55,425	72,441	81,194	105,369	140,099	185,319	244,093
Less: Treasury Stock.....	424	1,385	1,352	1,115	709	1,509	1,523
Total Liabilities and Equity.....	331,997	677,119	689,776	681,289	795,056	918,000	1,211,741
Intra-Alaskan Airlines							
<i>Assets</i>							
Current Assets.....	2,983	6,182	5,395	6,559	6,581	6,623	7,108
Investments and Special Funds.....	168	631	819	825	658	682	1,053
Flight Equipment.....	3,140	8,367	9,509	10,475	10,602	12,203	12,262
Reserve for Depreciation and Airworthiness.....	-2,489	-4,272	-4,948	-5,688	-6,003	-6,945	-7,135
Ground Property and Equipment.....	2,413	3,897	4,138	4,369	4,909	5,842	6,673
Reserve for Depreciation.....	-938	-1,882	-2,074	-2,298	-2,536	-2,816	-3,091
Other Property.....	332	142	417	335	465	1,059	867
Deferred Charges.....	109	487	455	565	652	638	694
Total Assets.....	5,718	13,552	13,714	15,146	15,328	17,285	18,431
<i>Liabilities and Equity</i>							
Current Liabilities.....	2,415	4,868	4,470	5,708	5,541	5,437	5,696
Long-Term Debt.....	684	3,695	3,433	3,350	2,418	3,079	3,988
Other Non-Current Liabilities.....	—	89	104	129	187	1,180	138
Deferred Credits.....	17	81	143	181	213	242	111
Stockholders' Equity—Net of Treasury Stock.....	2,602	4,818	5,565	5,776	6,969	7,348	8,498
Preferred Stock.....	—	—	420	473	468	485	492
Common Stock.....	1,478	2,372	2,124	2,124	2,221	2,552	2,721
Other Paid-In Capital.....	127	183	278	279	322	487	490
Retained Earnings.....	997	2,263	2,744	2,899	3,958	3,824	4,795
Less: Treasury Stock.....	—	—	—	—	—	—	—
Total Liabilities and Equity.....	5,718	13,552	13,714	15,146	15,328	17,285	18,431

STOCKHOLDERS' EQUITY

(In Thousands of Dollars)

	1956	1961	1962	1963	1964	1965	(Sept. 30) 1966
All-Cargo Airlines ²							
<i>Assets</i>							
Current Assets.....	21,192	28,541	33,632	28,987	33,399	38,903	54,603
Investments and Special Funds.....	17,244	21,920	9,097	9,322	7,884	9,637	14,526
Flight Equipment.....	31,571	131,774	157,910	166,757	174,263	192,603	169,541
Reserve for Depreciation and Airworthiness.....	-11,498	-39,397	-40,915	-53,157	-64,504	-71,827	-71,995
Ground Property and Equipment.....	4,666	5,266	5,612	6,301	6,936	7,547	12,744
Reserve for Depreciation.....	-1,833	-2,735	-2,976	-3,443	-3,778	-4,135	-4,473
Other Property.....	3,028	7,175	5,618	7,688	1,907	4,548	2,813
Deferred Charges.....	2,987	8,567	8,620	7,181	7,070	7,202	12,405
Total Assets.....	67,357	161,114	176,600	169,634	163,176	184,477	190,164
<i>Liabilities and Equity</i>							
Current Liabilities.....	19,202	39,693	39,057	31,118	38,004	41,718	49,042
Long-Term Debt.....	16,813	96,166	105,080	97,767	84,543	85,707	66,326
Other Non-Current Liabilities.....	-----	35	408	2,582	2,476	2,555	1,375
Deferred Credits.....	2,276	1,838	5,288	9,733	6,580	10,564	11,182
Stockholders' Equity—Net of Treasury Stock.....	29,066	23,382	26,766	28,433	31,574	43,933	62,240
Preferred Stock.....	1,440	1,192	1,192	1,192	1,192	991	1,235
Common Stock.....	6,868	23,300	23,015	24,052	24,766	26,522	17,569
Other Paid-In Capital.....	14,585	21,633	21,742	13,900	13,915	15,128	22,920
Retained Earnings.....	6,422	-22,738	-19,179	-10,705	-8,293	1,292	20,759
Less: Treasury Stock.....	249	5	5	5	5	-----	244
Total Liabilities and Equity.....	67,357	161,114	176,600	169,634	163,176	184,477	190,164
CONSOLIDATED INDUSTRY ³							
<i>Assets</i>							
Current Assets.....	597,232	981,122	1,116,229	1,174,711	1,183,253	1,529,441	1,760,015
Investments and Special Funds.....	205,259	229,097	191,204	282,477	299,400	469,815	644,730
Flight Equipment.....	1,443,846	3,561,690	3,912,768	3,974,866	4,523,734	5,024,466	5,830,215
Reserve for Depreciation and Airworthiness.....	-716,983	-1,378,443	-1,558,638	-1,725,941	-1,815,054	-1,920,203	-2,071,520
Ground Property and Equipment.....	229,084	437,240	463,098	489,877	556,974	620,525	679,864
Reserve for Depreciation.....	-115,511	-220,643	-238,529	-264,449	-293,763	-320,740	-344,105
Other Property.....	51,023	83,686	41,595	74,870	61,970	101,094	144,657
Deferred Charges.....	30,096	122,597	106,402	78,884	84,992	77,741	101,931
Total Assets.....	1,724,046	3,816,346	4,034,140	4,085,298	4,601,506	5,582,139	6,745,786
<i>Liabilities and Equity</i>							
Current Liabilities.....	470,979	775,960	863,091	950,537	972,109	1,125,263	1,241,864
Long-Term Debt.....	437,969	1,884,407	1,923,075	1,729,507	1,876,961	2,148,831	2,702,919
Other Non-Current Liabilities.....	1,095	25,554	32,624	21,024	29,074	21,939	22,305
Deferred Credits.....	46,393	179,752	228,532	305,042	394,070	450,243	504,383
Stockholders' Equity—Net of Treasury Stock.....	767,610	950,674	986,818	1,079,190	1,329,293	1,835,864	2,274,315
Preferred Stock.....	18,344	39,589	39,042	26,938	23,646	19,135	18,759
Common Stock.....	122,977	186,157	191,261	212,619	227,729	264,199	273,441
Other Paid-In Capital.....	272,855	406,693	421,989	461,040	517,646	623,975	790,900
Retained Earnings.....	354,214	320,312	337,137	381,429	562,363	931,130	1,194,123
Less: Treasury Stock.....	780	2,076	2,608	2,836	2,090	2,575	2,907
Total Liabilities and Equity.....	1,724,046	3,816,346	4,034,140	4,085,298	4,601,506	5,582,139	6,745,786

² Balance sheet data for All-Cargo Airlines includes their international as well as domestic operations.

³ Avalon Air Transport figures included only in Consolidated Industry 1961 and 1962.

COMPARATIVE TRANSPORT SAFETY RECORD
Passenger Fatality Rate per 100,000,000 Passenger Miles

	1956	1961	1962	1963	1964	1965	1966
U. S. Scheduled Airlines							
Domestic							
Fatalities.....	143	124	121	48	65	205	59
Rate.....	0.61	0.38	0.34	0.12	0.14	0.38	0.09
International and Territorial							
Fatalities.....	0	0	0	73	94	21	0
Rate.....	0.00	0.00	0.00	0.59	0.63	0.12	0.00
Total U. S. Scheduled Airlines							
Fatalities.....	143	124	121	121	159	226	59
Rate.....	0.50	0.29	0.26	0.23	0.26	0.31	0.07
Motor Buses							
Fatalities.....	80	80	90	130	80	110	N.A.
Rate.....	0.16	0.15	0.16	0.23	0.13	0.18	N.A.
Railroads							
Fatalities.....	57	20	27	13	9	12	27
Rate.....	0.20	0.10	0.14	0.07	0.05	0.07	0.16
Autos							
Fatalities.....	26,100	24,700	26,800	28,900	31,500	32,700	35,000
Rate.....	2.7	2.2	2.3	2.3	2.4	2.4	2.4

N.A. — Not Available

AIRLINE REVENUES COMPARED
Average Revenue per Passenger Mile — Intercity Common Carriers
(For Selected Years, In Cents Per Mile)

	1956	1961	1962	1963	1964	1965	1966	% Change 1956/1966
Scheduled Airlines:								
Domestic—First Class.....	5.91	7.33	7.57	7.17	7.26	7.33	7.24	+22.5
Coach.....	4.29	5.42	5.76	5.62	5.58	5.52	5.28	+23.1
Total.....	5.33	6.28	6.45	6.17	6.12	6.06	5.83	+ 9.4
International—First Class.....	7.93	8.44	8.42	8.56	8.16	7.62	7.60	- 4.2
Tourist*.....	5.89	5.50	5.43	5.47	5.12	5.00	4.85	-17.7
Total.....	6.68	6.08	5.87	5.82	5.45	5.29	5.16	-22.8
Total U. S. Scheduled Airlines.....	5.58	6.24	6.31	6.09	5.95	5.87	5.67	+ 1.6
Railroads, Class I								
First Class.....	3.40	3.96	3.97	4.00	3.91	3.87	3.84 ^P	+12.9
Coach.....	2.56	2.86	2.89	3.00	3.00	3.00	2.99 ^P	+16.8
Motor Buses, Class I	2.13	2.69	2.67	2.72	2.74	2.88	2.89 ^P	+35.7

* Includes Economy Fares.

¹ Preliminary.

FREIGHT REVENUES COMPARED
Average Revenue per Ton Mile — Intercity Common Carriers
(For Selected Years, In Cents Per Mile)

	1956	1961	1962	1963	1964	1965	1966	% Change 1956/1966
Scheduled Airlines:								
Domestic.....	20.66	22.08	21.31	21.72	20.97	20.46	20.21	- 2.2
International.....	30.88	27.83	25.04	24.78	23.60	20.76	19.91	-35.5
Total U. S. Scheduled Airlines.....	24.12	24.12	22.69	22.86	21.95	20.58	20.08	-16.8
Railroads, Class I	1.38	1.37	1.35	1.31	1.28	1.27	1.26	- 8.7
Trucks, Class I and II	6.00	6.30	6.40	6.30	6.50	6.60	6.50 ^B	+ 8.3

^B Estimated.

PERSONNEL EMPLOYED Scheduled Airline Industry¹

Year (Dec. 31)	Pilots and Copilots	Other Flight Personnel	Pursers, Stewards, Stewardesses	Communi- cations Personnel	Mechanics	Aircraft and Traffic Servicing	Office Employees	All Others	Total
1956.....	11,386	3,384	8,097	3,605	30,962	20,657	49,336	4,076	131,503
1961.....	13,936	4,162	11,858	3,745	34,065	44,617	36,642	20,916	169,941
1965.....	16,881	5,091	17,322	3,123	41,667	57,532	44,162	25,017	210,795
1966.....	21,019	6,788	20,925	3,174	45,327	66,641	50,961	29,193	244,028

¹ Data for Alaskan and All-Cargo not included prior to 1959.

REVENUE PASSENGERS CARRIED

U. S. Scheduled Airline Industry

(For Selected Years, In Thousands of Passengers)

	1956	1961	1962	1963	1964	1965	1966
Domestic Trunk Airlines.....	37,596	44,669	46,759	53,380	60,532	69,883	79,372
Local Service Airlines.....	3,457	6,470	7,651	8,865	10,481	12,316	15,547
Helicopter Airlines.....	64	431	359	458	608	718	1,067
Intra-Hawaiian Airlines.....	625	837	877	973	1,119	1,286	1,487
Intra-Alaskan Airlines.....	195	217	240	225	247	264	270
International and Territorial Airlines.....	4,068	5,699	6,598	7,513	8,775	10,195	11,644
TOTAL SCHEDULED AIRLINE INDUSTRY.....	46,005	58,403	62,549 ¹	71,438 ¹	81,762	94,662	109,387

AVERAGE LENGTH OF HAUL

	1956	1961	1962	1963	1964	1965	1966
Domestic Trunk Airlines.....	576	661	681	682	688	701	716
Local Service Airlines.....	193	208	210	211	214	213	223
International and Territorial Airlines.....	1,285	1,539	1,536	1,585	1,636	1,647	1,657

¹ Includes Avalon Air Transport

PASSENGER TRAVEL BETWEEN THE UNITED STATES AND FOREIGN COUNTRIES *

(Thousands of Passengers)

	1956	1961	1962	1963	1964	1965	1966
Passengers via Air.....	2,643	4,954	5,364	5,997	6,905	8,227	9,780
Passengers via Sea.....	1,242	1,469	1,568	1,639	1,710	1,652	1,549
Total via Air and Sea.....	3,885	6,423	6,932	7,636	8,615	9,879	11,329
Air Share (%).....	68.0	77.1	77.4	78.5	80.2	83.3	86.3
U. S. Citizens via Air (%).....	68.6	61.2	61.4	61.8	61.8	60.9	62.1
Passengers via Foreign-Flag Airlines.....	879	2,496	2,684	2,977	3,465	4,195	4,744
Passengers via U. S.-Flag Airlines.....	1,763	2,458	2,680	3,020	3,440	4,032	5,036
U. S.-Flag Airlines' Share (%).....	66.7	49.6	50.0	50.4	49.8	49.0	51.5

* Figures are for fiscal years and are exclusive of travel over land borders (except Mexican air travel), crewmen, military personnel, and travelers between continental United States and its possessions.

Source: U. S. Department of Justice, Immigration and Naturalization Service, "Report of Passenger Travel Between the United States and Foreign Countries."

INTERCITY PASSENGER TRAVEL IN THE UNITED STATES

(Passenger Miles in Millions)

	1956	1961	1962	1963	1964	1965	1966
Common Carriers							
Airlines.....	22,399	31,062	33,623	38,457	44,141	51,888	60,591
Railroads.....	23,348	16,154	15,859	14,396	14,048	13,260	12,903 [Ⓔ]
Motor Bus ¹	21,700	19,700	21,300	21,900	22,700	23,300	24,800 [Ⓔ]
Total.....	67,447	66,916	70,782	74,753	80,889	88,448	98,294 [Ⓔ]
Air Share (%).....	33.2	46.4	47.5	51.4	54.6	58.7	61.6
Private Automobile.....	670,000	714,000	736,000	766,000	802,000	838,000	880,000 [Ⓔ]
Total Common Carrier and Auto.....	737,447	780,916	806,782	840,753	882,889	926,448	978,294 [Ⓔ]
Common Carrier Share (%).....	9.1	8.6	8.8	8.9	9.2	9.5	10.0
Air Share (%).....	3.0	4.0	4.2	4.6	5.0	5.6	6.2

¹ Includes charter

[Ⓔ] Estimated

AIRCRAFT IN SERVICE

		<i>(In service as of 12/31)</i>						
Manufacturer	Model	1956	1961	1962	1963	1964	1965	1966
Armstrong-Whitworth:	Argosy (Turboprop)	---	7	---	---	---	---	---
Boeing:	377	34	---	---	---	---	---	---
	B707 (Jet)	---	94	117	133	157	187	239
	B720 (Jet)	---	76	99	104	112	121	129
	B727 (Jet)	---	---	---	---	88	168	277
British Aircraft Corp.:	BAC 111 (Jet)	---	---	---	---	---	17	54
Canadair:	CL 44 (Turboprop)	---	9	21	21	21	24	22
Convair:	240	100	46	50	49	51	55	30
	340/440	142	146	149	153	153	145	112
	540 (Turboprop)	---	5	---	---	---	---	---
	580/600 (Turboprop)	---	---	---	---	4	20	69
	880 (Jet)	---	39	45	46	48	47	64
	990 (Jet)	---	---	15	19	19	18	17
Curtis:	C-46	94	44	40	34	22	24	16
Douglas:	DC-3	356	250	213	197	164	140	105
	DC-4	140	25	15	14	15	5	3
	DC-6	299	260	230	217	203	177	131
	DC-7	132	215	203	164	121	64	49
	DC-8 (Jet)	---	93	100	104	114	130	124
	DC-9 (Jet)	---	---	---	---	---	4	54
Fairchild Hiller:	F-27 (Turboprop)	---	44	46	50	54	63	63
	FH-227 (Turboprop)	---	---	---	---	---	---	16
Lockheed:	Lodestar	10	---	---	---	---	---	---
	Constellation	114	69	44	40	41	36	37
	Super Constellation	79	115	114	111	107	70	61
	Electra (Turboprop)	---	122	117	117	117	117	114
	L-382B/100 (Turboprop)	---	---	---	---	---	---	5
Martin:	202	23	17	17	16	15	13	---
	404	97	64	66	59	65	71	73
Nihon:	YS-11 (Turboprop)	---	---	---	---	---	---	3
Nord Aviation:	262 (Turboprop)	---	---	---	---	---	5	---
Sud Aviation:	Caravelle (Jet)	---	17	20	20	20	20	20
Vickers:	V-700 (Series) (Turboprop)	54	57	55	49	48	48	44
	V-800 Series (Turboprop)	---	13	12	11	11	11	8
Other:		29	31	23	84	73	75	62
	Jet	---	319	396	426	558	712	978
	Turboprop	54	257	251	248	255	288	344
	Piston	1,649	1,282	1,164	1,138	1,030	875	679
Total Fixed Wing:		1,703	1,858	1,811	1,812	1,843	1,875	2,001
Helicopters:								
Bell:	B47	7	1	1	1	---	---	---
Sikorsky:	S51	2	1	---	1	1	---	---
	S55	8	5	5	2	2	2	2
	S58	3	7	5	4	4	4	3
	S61 (Turbine)	---	---	4	4	6	7	8
	S62 (Turbine)	---	---	---	4	3	1	1
Boeing Vertol:	V44B	---	5	1	---	---	---	---
	V107 (Turbine)	---	---	4	4	4	7	7
	Turbine	---	---	8	12	13	15	16
	Piston	20	19	12	8	7	6	5
Total Helicopters:		20	19	20	20	20	21	21

Source: Federal Aviation Agency