

THE ECONOMIC IMPACT OF THE AVIATION INDUSTRY
ON THE NY-NJ METROPOLITAN REGION

Preliminary Summary Report

New Jersey State Library

The Port Authority of NY-NJ
Planning & Development Department
Aviation Department
November 21, 1985

This report identifies the linkages of the Port Authority's three airports to the economic base of the New York-New Jersey regional economy and quantifies the importance of aviation and aviation-related activities. In addition, key economic and demographic trends and projections are analyzed for their implications on the demand for air travel by airport and on the distribution of trips originating within the region.

More specifically, the report describes the overall contributions of the airports to the regional economy, defined as the 17-county NY-NJ Metropolitan Area. Both passenger and freight activities are critical in nurturing the region's role as a national and international business center, particularly for corporate headquarters and business, financial and other services. Some of the largest and/or fastest growing industries in the region are among those most dependent on convenient air transportation services. Services as well as goods valued in the billions move across the airports to the benefit of the region. The tourist industry is also heavily dependent on air transportation to bring millions of business and pleasure visitors to the region.

The New York-New Jersey region exists in a highly competitive environment. The quality of air transportation services has a significant impact on the region's competitive standing in relation to other major metropolitan areas in the nation. Landside access, along with airside and terminal conditions, is an important component of the quality of air

transportation service. As other regions devote substantial resources to improve access to their airports, it is important for the NY-NJ region to maintain the quality of services to its airports.

In addition to its strategic role of providing critical services to other industries within the regional economy, the aviation industry is a major generator of economic activity in its own right. Defined as the set of economic activities needed for the movement of passengers and cargo by air, it is an industry that directly employs large numbers of workers both on and off airport and has strong linkages to other industries in the economy through its purchases of goods and services. This report quantifies the current regional economic impacts of the aviation industry, including the impacts of both passenger and cargo activities. The regional economic impacts of the production of goods for international export and the impact of visitor expenditures are quantified as well.

The report also investigates the relationships between the demographic characteristics of air travellers and the relative trip generation ratios of residents in various locations within the region. Together with demographic and employment projections, this information is analyzed for its implications on future air transportation and airport access demand at the region's airports.

A. THE ECONOMIC IMPACTS OF THE AVIATION INDUSTRY

The aviation industry is a vital asset to the region's economy.

In 1984 it generated:*

- \$18.9 billion in economic activity or sales
- 293,000 jobs
- \$ 6.2 billion in wages and salaries
- \$ 3.0 billion in business income
- \$ 0.6 billion in regional taxes
- \$11.2 billion in value added or contribution to Gross
Regional Product (GRP)

As much as 3.5% of the Gross Regional Product (GRP) is attributable to the total impact of the aviation industry. This impact is significant considering the region's large economic base and diverse economy.

* All economic impact figures are estimated using the Port Authority's Regional Input-Output Model. The results include the direct, indirect and induced multiplier effects of activities. Activity levels in the report are for 1984, although, in part, they reflect updates of 1983 for which more extensive information was available.

Of the 143,800 persons employed directly by the aviation industry in 1984, 67,400 worked at the airports. The direct components are broken down as follows:

On-Airport

U.S. Airlines	43,400
Foreign Flag Carrier	3,700
Airport Facility Tenants	18,500
Port Authority	1,800
TOTAL ON-AIRPORT	67,400

OFF-AIRPORT

Export-Import Wholesaling and Distribution	20,000
Air Travel Agencies	12,100
Truck Transportation of Air Cargo	10,000
Freight Forwarders and Customhouse Brokers	8,700
U.S. Airlines	8,300
Banking and Insurance	7,400
Passenger Landside Transport	4,300
Foreign Flag Carriers	3,800
Government Agencies	1,800
TOTAL OFF-AIRPORT	76,400

TOTAL DIRECT JOBS 143,800

The aviation industry has strong linkages to other industries in the region, generating a total of 149,200 indirect and induced jobs. That is, for

every 10 jobs created in the aviation industry, over 10 additional jobs are created in the rest of the regional economy. Indirect effects include industries supplying such inputs as fuel, food, materials advertising and other business services. Induced impacts are generated by the expenditures of wage earners on such items as housing, food, clothing, personal services, etc.

Kennedy Airport (JFK):

JFK generates 207,800 jobs and \$13.6 billion in regional sales, or 71% of the total aviation industry impact.

Newark Airport

Newark Airport activities generate 46,100 jobs and \$2.8 billion in regional sales, accounting for 16% of the industry impact.

La Guardia Airport (LGA):

Activities related to La Guardia airport generate 39,100 jobs and \$2.5 billion in regional sales, accounting for approximately 13% of the total impact. Approximately two-thirds of the Aviation Industry's imports is related to passenger activities on and off the airports. However, air cargo is a significant part of the industry as well.

Economic Impact of the Air Cargo Industry

The economic impact of the air cargo industry can be identified as part of the total impact of the aviation industry. The air cargo component of the aviation industry economic impact is outlined below.

o Air cargo activities generate:

-93,400 jobs

-\$5.3 billion in economic activity or sales

-\$2.0 billion in wages and salaries

-\$1.0 billion in business income

-\$202 million in regional taxes

-\$3.5 billion in value added or contribution to Gross

Regional Product (GRP)

o The air cargo component of the aviation industry accounts for almost one third of the industry's impact on the region.

o Off airport cargo activities and their multiplier effect account for almost 90% of the total impact of the air cargo industry.

B. The Strategic Importance of Aviation Services to the Economy

While the impacts of the aviation industry are related to passenger and cargo volumes, other factors are also important. For example, airlines which locate headquarters functions within the region generate additional impacts and thus make a greater contribution to the regional economy. Furthermore, non-resident airline passengers who come into the region as visitors, generate additional impacts through their personal expenditures within the region, and thus produce a greater effect than resident or inter-line passengers. The importance of non-resident trips to the regional economy is quantified below in the Visitor Impacts section. Importantly, these impacts are in addition to the overall industry impacts noted above.

Impact of Visitors to the Region Travelling by Air

The tourism industry, supported by this Region's ability to attract visitors from all over the world, depends on air transportation for bringing both pleasure and business visitors into the region (pleasure travellers include all those travelling for other than business reasons). Businesses which rely on visitor expenditures are generally labor intensive and employ large numbers of low skilled service workers.

- o Air transportation is the dominant mode of transportation for bringing visitors to the NY-NJ region, accounting for the largest single share of visitors (40%). Two thirds of the business visitors to the region travel by air. (A visitor is defined as staying over one night in the region).
- o The 1.7 million pleasure visitors and over 1 million business visitors travelling by air to the region during the summer quarter of 1984 are estimated to have expended \$1.7 billion during their stay in the region. These visitor expenditures are estimated to have generated:
 - 71,000 jobs
 - \$2.7 billion in total economic activity or sales
 - \$790 million in wage and salaries
 - \$490 million in business income
 - \$83 million in State and City income and Sales taxes
 - \$1.5 billion Contribution to Gross Regional Product
- o 39% of the air visitors traveled for business reasons.

Due to variations in the numbers of business and pleasure visitors and in the average length of stay for visitors, the visitor impacts varied significantly by airport as summarized in the table below.

VARIATIONS IN VISITOR
IMPACTS BY AIRPORT

	<u>TOTAL</u>		
	Average Length of Stay	Percent of Total Visitors	Percent of Total Impacts
KIA	7.0 nights	36%	38%
LGA	5.2 nights	35%	29%
NIA	8.1 nights	29%	33%

	<u>BUSINESS</u>			<u>PLEASURE</u>		
	Average Length of Stay	Percent of Business Visitors	Percent of Business Impacts	Average Length of Stay	Percent of Pleasure Visitors	Percent of Pleasure Impacts
KIA	7.8 nights	25%	39%	6.7 nights	43%	37%
LGA	4.0 nights	47%	37%	6.4 nights	27%	22%
NIA	4.3 nights	28%	24%	10.4 nights	30%	40%

Source: Port Authority In-flight survey, 1984

For example, while La Guardia had the highest proportion of business visitors, Kennedy had the highest proportion of business visitor impacts because business visitors from Kennedy have a higher average length of stay than those from La Guardia. Conversely, while the greatest proportion of pleasure visitors fly through Kennedy, the greatest proportion of pleasure visitor impacts are estimated to be from Newark due to a longer average length of stay.

C. IMPORTANCE OF AIR TRANSPORTATION TO BUSINESS

Air transportation services, including both passenger and cargo activities, are of vital importance to firms conducting business within the region. A Port Authority survey of businesses throughout the region revealed:

- o over half of all firms believe that air passenger service is "very important" or "important" to their business

- o nearly half believe that air cargo services are "very important" or "important"

Other surveys reveal that businesses in the Manufacturing, Finance, Insurance, and Real Estate Service (F.I.R.E), Transportation, Communications and Public Utilities (TCPU), and Wholesale Trade sectors consider air passenger services to be very important to the successful operation of their businesses. In addition, large firms and firms in the Manhattan CBD are more likely than other firms to consider air passenger services important. Within the Manhattan CBD, firms in the retail trade and hotel and entertainment industries also indicated that they were relatively dependent on air passenger service. Air cargo services were particularly important to large firms, to firms in the Manhattan CBD and to firms in the manufacturing, hotel and restaurant, and wholesale trade industries.

On an annual basis, 6.4 million business trips are estimated to be made by residents of the region and 5.2 million trips to the region are made by non-residents who visit the region for business purposes. Comparing these figures to the total number of jobs in the region (7.1 million), each regional job:

- o generates almost one (.9) business trip by a resident of the region.

- o attracts about three-quarters (.74) of a business trip by a non-resident

The generation of resident business trips differs significantly by industry. The greatest generators of business trips are also some of the largest and/or fastest growing industries in the region.

Manufacturing

- o The manufacturing industry is the largest generator of air traffic, generating 1.8 resident business trips per job or 2.2 million trips.
- o As evidenced by the occupational mix of business travellers from the manufacturing industries, it is the headquarters function that generates the bulk of the air traffic.
- o While production jobs in the manufacturing sector have been declining, the headquarters and office functions are a strong sector of the region's economy.

Finance, Insurance and Real Estate (F.I.R.E)

- o The financial, insurance and real estate (F.I.R.E) industries generate 1.5 resident business trips per job or 1.1 million trips.
- o Employment in the F.I.R.E industries grew by almost 24 percent between 1977 and 1984 and now accounts for about 10% of total regional employment.
- o F.I.R.E industry employment is projected to grow by 17% between 1984 and 1995.

Services

- o While services as a whole generate .9 resident business trips per job (1.6 million trips) or about the same as the average for all industries, legal and amusement services generate a greater share of resident business trips than of regional jobs.
- o Business services attract substantial business travel by non-residents.
- o Service sector employment grew by 33.6% between 1977 and 1984 and accounted for 26% of total regional employment in 1984.
- o Service sector employment is projected to grow by 25.5% between 1984 and 1995.

Transportation, Communication, Public Utilities (TCPU)

- o Transportation, communication and public utilities (TCPU) industries generate 1.4 resident business trips per job or 640,000 trips.
- o Accounting for 6.6% of total regional employment, TCPU industry employment grew by 4.2% between 1977 and 1982.

Foreign Firms

Foreign firms, which account for 8% of New York City's employment and 15% of its banking employment also comprise a growing proportion of the region's manufacturing firms. Foreign firms consistently rate convenient air transportation to their home country as one of the most important reasons for

locating in New York. Air cargo services are also considered to be very important by foreign firms.

International Trade

Aviation plays a key role in facilitating international trade in the NY-NJ region. Improved air transportation has stimulated trade in goods and services by making it faster, easier and less costly to market and sell goods and services abroad. This role has grown in importance as international trade has become an increasingly significant part of the nation's and region's economies. For the NY-NJ region, over half (by value) of general cargo trade moving through the region is shipped by air and air cargo's share is growing.

The region's airports provide essential services to the firms in the region who manufacture goods for export to international markets. These are generally high-value goods with high-time sensitivity. Based on 1981 production levels, the regional production of manufactured goods exported by air had the following total impact on the regional economy:

- 92,000 jobs
- \$6.8 billion in economic activity or regional sales
- \$1.9 billion in wages and salaries
- \$1.2 billion in business income
- \$200 million in regional taxes

- o These impacts are distinct from the activities generated by the handling and processing of these exports, which are included in the air cargo industry impacts.

o Five industry groups in the NY-NJ region are major exporters which rely heavily on air cargo services for the shipment of their exports:

- electrical and electronic equipment
- non-electrical machinery
- miscellaneous manufacturing
- transportation equipment
- instruments and related products

In the long run, good access to airports is one of several considerations that affect the location decisions of firms that rely heavily on distant air markets.

Service Exports

Air transportation enhances the NY-NJ region's role as an exporter of services such as finance and engineering, by providing the high quality international airline services required to facilitate the marketing and selling of services outside the region. Air passenger service is vital to industries who export their services to both domestic and international markets. These industries are growing rapidly in the NY-NJ region, reflecting national and world trends. International service exports have been expanding rapidly in the U.S. and worldwide. Between 1970 and 1980, they grew by an average compound rate of over fourteen percent. The major categories of international services exports -- finance and business services, construction, engineering and consulting services, transportation services, and tourism -- are all heavily concentrated in the NY-NJ region. The New York-New Jersey region also contains a large concentration of firms that export services domestically to other parts

of the country, including business, financial, transportation and other services.

D. DEMOGRAPHIC AND EMPLOYMENT TRENDS AFFECTING AIR TRAVEL DEMAND

Population and demographic trends influence the growth patterns in resident air travel demand at each of the three airports. They also affect growth in ground transportation demands which are likely to have impacts on landside access to the airports. Particularly important in predicting likely growth patterns, are:

- o demographic characteristics of resident air travellers
- o demographic characteristics of the region's overall population and differences in demographic characteristics across geographic sectors
- o demographic, population and employment projections for the region and for the geographic sectors of the region

With almost 80% of resident air travellers leaving for one of the regional airports directly from their homes, the distribution of travel demand by airport is significantly influenced by the distribution of air travellers by residence.

The following table indicates the proportion of air travellers from various residential locations using each of the three airports.

	JFK	La Guardia	Newark
Manhattan	34%	47%	19%
Other New York City	67	21	12
Long Island	51	44	5
Other New York Suburbs	41	45	14
New Jersey Sector	13	7	80

In projecting the distribution of air travellers by residence it is important to note that the ratio of air trips to resident population varies by geographic location due to differences in demographic characteristics which influence the demand for air travel. On the whole, resident air travellers differ from the overall population in that a greater proportion are:

- o in the professional, managerial and administrative occupations
- o college and high school graduates
- o in the higher income categories

Reflecting these characteristics, the counties with the greatest proportion of professional, managerial and administrative workers as a percent of total workforce generally tend to have the highest ratio of air trips to population.

The following table compares the current distribution of air trips by residence, to population. Manhattan and the New Jersey counties generate disproportionately high shares of air trips while the New York City boroughs outside Manhattan generate a disproportionately low share of total trips.

	Percent of Total Regional Air Trips	Percent of Total Regional Population
Manhattan	19%	9%
Other New York City	21	37
New York Suburbs	25	24
New Jersey Sector	34	29

The New Jersey sector generates large numbers of trips by women, part-time workers and homemakers, travelling for personal reasons. New York City, particularly Manhattan, generates a large number of trips by young professionals and administrative/managerial workers. These trends may help to explain the relatively high ratio of air trip generation from these areas.

The Implications of Demographic and Employment Projections for Future Air Travel Demand at the Three Airports.

Regional demographic and employment trends point to increased demand for air travel over the next decade due to:

- o projections of overall population growth of over 500,000 compared to regional population loss of over 1 million people between 1970 and 1980
- o although the regional population is aging and the elderly do not generate much demand for air travel, a counter-balancing factor will be the growing impact of maturing "baby boomers" with dual income households and greater demand for air travel

o projections of employment growth for the region of 462,000 jobs by 1995, with much of this growth concentrated in industries with high trip generation ratios

The Manhattan Central Business District as well as the suburbs are expected to generate most of the traffic growth. New Jersey's demographic trends point to a faster than average growth rate.

**The Economic Impact of
The Aviation Industry on the
New York-New Jersey
Metropolitan Region**

New Jersey State Library

The Aviation Industry is a Vital Asset to the Region's Economy

It generates:

\$18.9 Billion Annually in Economic Activity

293,000 Jobs

\$6.2 Billion in Wages and Salaries

\$3.0 Billion in Business Income

\$0.6 Billion in State and City Income and Sales Taxes

\$11.2 Billion Contribution to Gross Regional Product

JOBS

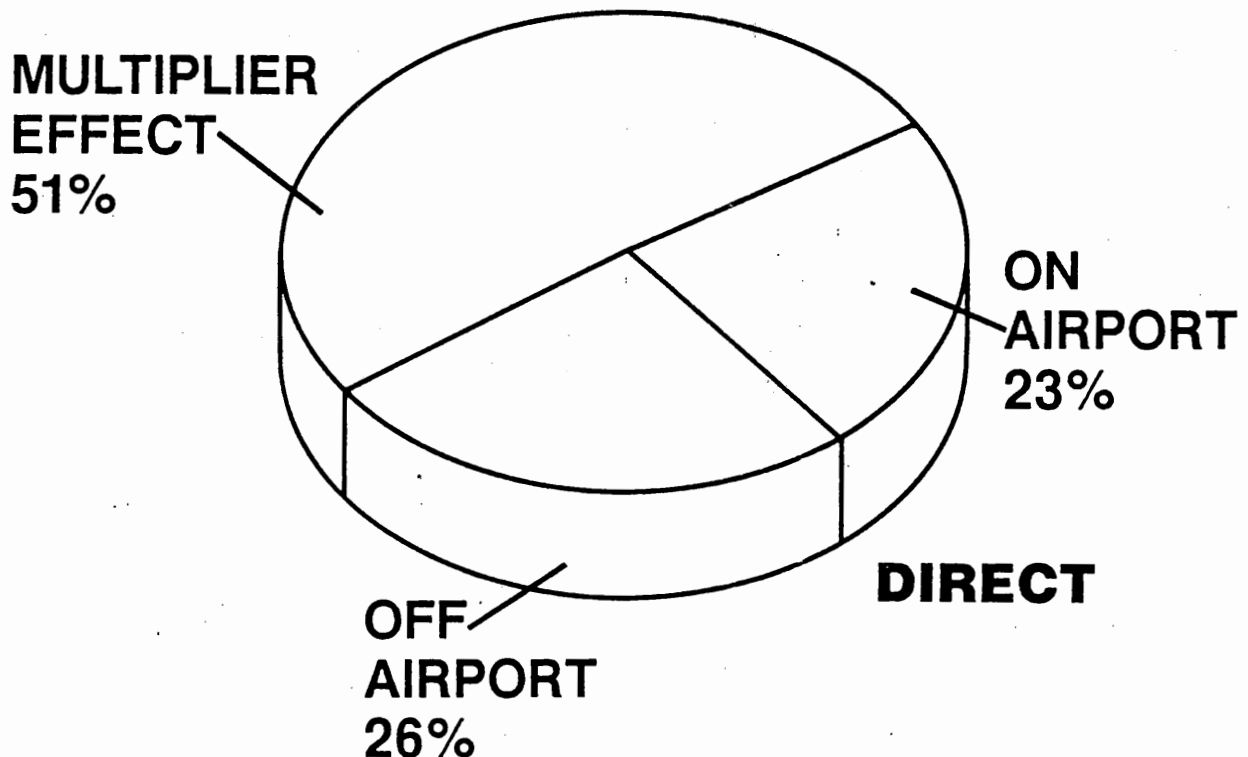
INDIRECT AND INDUCED

MULTIPLIER
EFFECT
51%

ON
AIRPORT
23%

OFF
AIRPORT
26%

DIRECT



Components of the Aviation Industry

	Direct Jobs
On-Airport	
U.S. Airlines	43,400
Foreign Flag Carriers	3,700
Airport Facility Tenants	18,500
Port Authority	1,800
	<hr/>
Total On-Airport	67,400
Off-Airport	
Export-Import Wholesaling and Distribution	20,000
Air Travel Agencies	12,100
Truck Transportation of Air Cargo	10,000
Freight Forwarders and Customhouse Brokers	8,700
U.S. Airlines	8,300
Banking and Insurance	7,400
Passenger Landside Transport	4,300
Foreign Flag Carriers	3,800
Government Agencies	1,800
	<hr/>
Total Off-Airport	76,400
TOTAL DIRECT JOBS	143,800

The Multiplier Effect Generates an Additional 149,200 Jobs

Indirect Impact

Regional Industries Supply:

Fuel

Food

■ **Materials**

Advertising

Other Business Services

Induced Impact

Expenditures of Workers Involved in direct and indirect activities:

Food

Clothing

Housing

Medical

Personal Services

Leading Industries:

Wholesale and Retail Trade, Services

Economic Impact By Airport

	<u>ECONOMIC ACTIVITY</u>	<u>JOBS</u>
Kennedy	\$ 13.6 Billion	207,800
Newark	\$ 2.8 Billion	46,100
LaGuardia	\$ 2.5 Billion	39,100
	\$18.9 Billion	293,000

Air Cargo Accounts for About A Third of Total Aviation Industry Impacts

It generates:

\$5.3 Billion in Economic Activity

93,400 Jobs

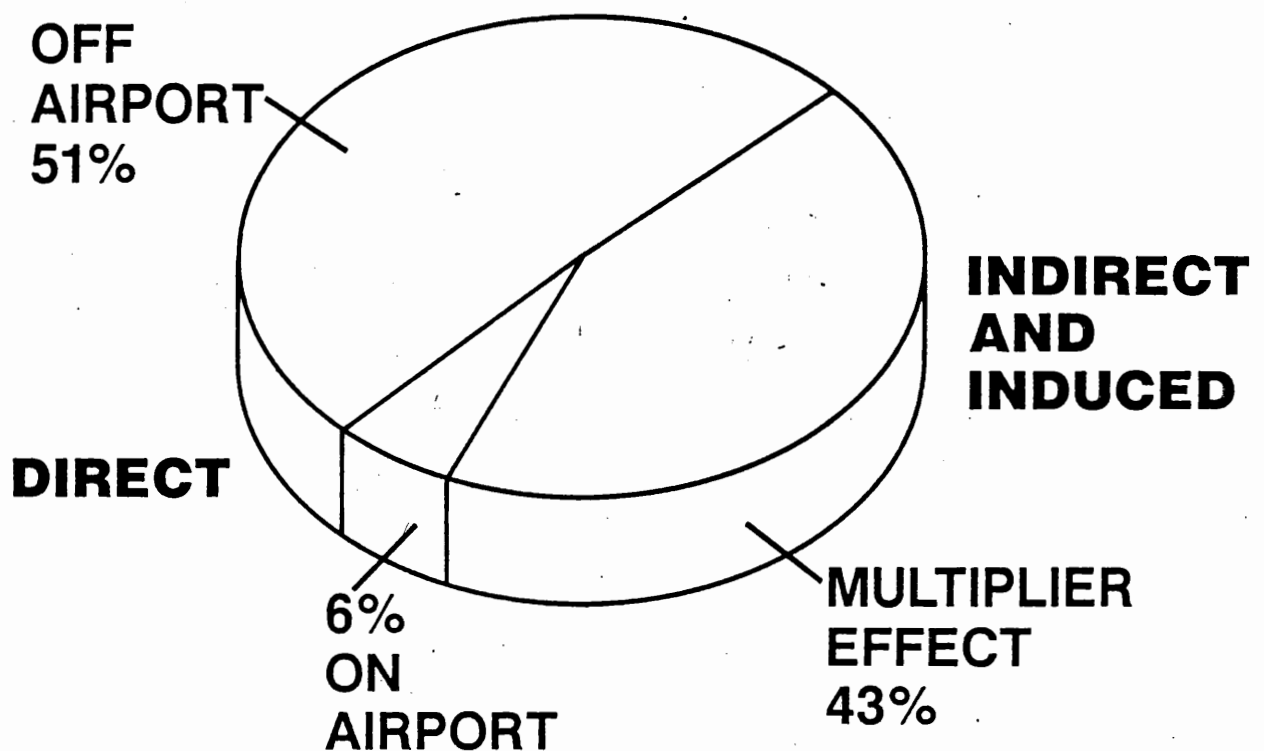
\$2.0 Billion in Wages and Salaries

\$1.0 Billion in Business Income

\$202 Million in State and City Income and Sales Taxes

\$3.5 Billion Contribution to Gross Regional Product

JOBS



The Strategic Importance of Aviation Services

Over the long run, the quality of air transportation significantly affects the region's competitive standing.

Both businesses and individuals depend on Aviation services.

- **Some of the region's key sectors are heavily dependent on air travel, e.g. Corporate Headquarters, Business Services, FIRE.**
- **Visitors infuse millions of dollars into the regional economy generating additional impacts.**
- **Regional firms which manufacture goods exported by air generate 92,000 jobs and \$6.8 billion in economic activity.**

Air Travellers Visiting the Region Generate Significant Additional Impacts

Visitors to the New York-New Jersey region rely heavily on air transportation.

- **40% of region's visitors travel by air**
- **Two-thirds of business visitors travel by air**
- **During the summer quarter of 1984, 2.8 million air travellers visited the region for at least one night, spending \$1.7 billion and generating 71,000 jobs and \$2.7 billion in direct and indirect impacts.**

Trip Generation of Resident Air Travellers Varies Significantly Across Geographic Sectors of the Region

<u>SECTOR</u>	<u>DISTRIBUTION OF POPULATION</u>	<u>DISTRIBUTION OF AIR TRIPS</u>
Manhattan	9%	19%
Other New York City	37	21
New York Suburbs	24	25
New Jersey Sector	29	34

- **Almost 80% of resident air travellers (including business and personal) leave for the airport from their place of residence, a dominant factor influencing choice of airport.**

Demographic and Employment Trends Point to Increased Demand for Air Travel Over the Next Decade

Projected Regional Growth 1985-1995

Population 525,000

Employment 462,000

- In the New Jersey sector, population will grow at twice the rate, and employment at 1.5 times the rate of the regional average.**

Aviation Statistics - 1984

	Passenger Traffic (Millions)		
	<u>DOMESTIC</u>	<u>OVERSEAS</u>	<u>TOTAL</u>
Kennedy	13.6	16.3	29.9
LaGuardia	20.3	—	20.3
Newark	22.7	1.0	23.7
Total	56.6	17.3	73.9

	Cargo (Thousands of Short Tons)		
	<u>DOMESTIC</u>	<u>OVERSEAS</u>	<u>TOTAL</u>
Kennedy	353	883	1,236
LaGuardia	47	—	47
Newark	218	10	228
Total	618	893	1,511

■ Foreign air cargo handled at the region's airports was valued at \$46 Billion.