New York's Air Travelers

The Port of New York Authority

Aviation Department, Forecast and Analysis Division

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THE ENO FOUNDATION FOR HIGHWAY TRAFFIC CONTROL

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PREFACE

This survey was conducted in the Aviation Department of The Port of New York Authority under the initiative and direction of Mr. Norman L. Johnson, Chief of the Forecast and Analysis Division.

The report was written under the direction of Mr. Albert J. Raebeck, Supervising Analyst of the Market Research Section of this division.

Sampling design and mathematical aspects of the report were supervised by Mr. Frederick V. Hurst, Jr., assistant to Mr. Raebeck.

Mr. Johnson came to the Port Authority in 1948. In 1952 he was appointed Chief of the Forecast and Analysis Division of the Aviation Department, in charge of economic analysis of the Port Authority Airport development program. This work includes traffic analysis, forecasting, and market research.

He served as Budget Officer for the Civil Aeronautics Authority from 1939–1942. During the war years he served with the War Shipping Administration. He was Director of Planning and Development for the Airline Terminal Corporation from 1946–1948. This corporation was formed by the Air Transport Association in 1946 to operate the Willow Run and Greater Cincinnati Airports.

Originally a telephone company commercial engineer in the Bell System, he joined the I. T. and T. Corporation in 1927 and made basic telephone market studies and organized the commercial department of the Puerto Rican, Mexican and Roumanian telephone companies.

He entered government service in 1933 and became Chief of Management Analysis Division of the Home Owners Loan Corporation. He left this post in 1939 to join the C.A.A. under the new organization which resulted from the C.A.A. Act of 1938.

Mr. Raebeck joined the Port Authority in 1953. He was previously a statistician in the Division of Statistical Standards,

Bureau of the Budget, and formerly an instructor in economics at Princeton.

Mr. Hurst is a mathematical statistician with advanced degrees from Columbia University.

FOREWORD

This survey was conducted by The Port of New York Authority with the collaboration of all domestic air carriers serving New York City airports, and Air France. It is probably the first of its kind conducted in this country.

Because of its uniqueness and informative nature, it could well be the forerunner of other profitable studies of all carriers and other major transportation areas.

It is published with the permission of The Port of New York Authority.

The Eno Foundation extends its kindest appreciation for the privilege of publishing it.

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INTRODUCTION

The survey which is the subject of this report was conducted as a joint undertaking by the domestic airlines serving La Guardia, New York International, and Newark Airports and The Port of New York Authority, to determine some of the basic characteristics of air travelers using these airports. The rapid and undiminished growth of air travel volume during the last few years has clearly indicated the changing character of air travel and travelers, and the development of a new dimension in the air transportation market.

The Airlines and the Port Authority have a joint interest and obligation in developing and serving the untapped potential market for air transportation. One of the ways to foresee the nature and volume of air travel in the future, as it will affect the terminals and airlines serving the New York-Northern New Jersey Metropolitan Area, is to analyze the changing composition and characteristics of the people who use the airlines serving this area today, and periodically to conduct similar surveys in the future to determine and project the changing nature of the air travel market. Since most of the information considered relevant to the analysis can be supplied most readily, or exclusively, by travelers themselves, a questionnaire technique was used in this survey.

It is necessary to study the characteristics of sufficient air travelers selected by methods that will assure the general validity and applicability of the findings within precise limits of accuracy. Since it is impracticable to study the characteristics of all ten million passengers who pass through the New York and Newark Airports during the year, the Port Authority proposed, in the summer of 1954, a sample survey of passengers departing from the three airports for domestic destinations, to be conducted jointly by the Port Authority and the thirteen airlines serving these airports. The airlines agreed to this proposal. The survey was conducted in accordance with the agreed plan, and significant findings are reported herein.

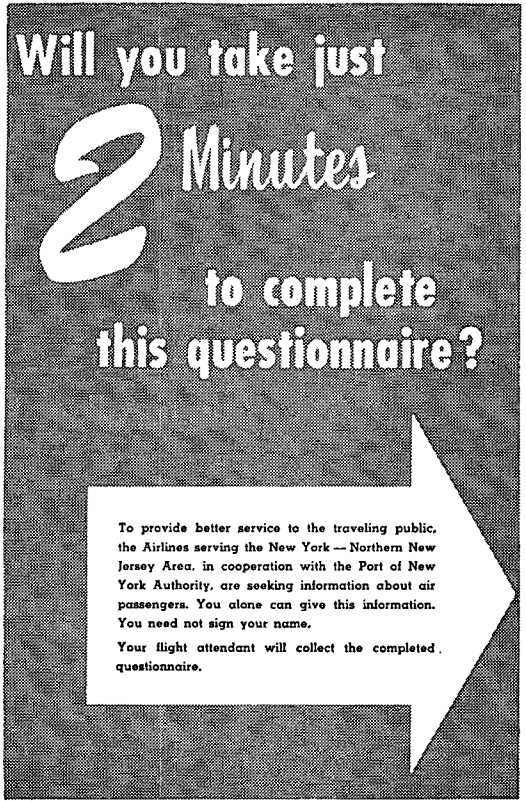
ACKNOWLEDGMENTS

This survey could not have been conducted without the full collaboration of the management and personnel of the participating airlines. In addition to the airline officials who authorized the survey, dispatchers, station managers, and, particularly, flight attendants on the sample flights gave, without exception, wholehearted assistance to the survey.

The following airlines collaborated in the study:

Air France
Allegheny Airlines
American Airlines
Capital Airlines
Colonial Airlines
Eastern Air Lines
Mohawk Airlines
National Airlines
Northeast Airlines
Northwest Orient Airlines
Trans-Canada Air Lines
Trans World Airlines
United Air Lines

The methods used in drawing the sample, in assigning weights to the responses, and in estimating reliability of findings, were developed by the Port Authority. These methods were reviewed by the Survey Research Center of the University of Michigan, and the Center found them to be satisfactory. The responsibility for the conduct of the survey and for all calculations, findings and conclusions presented herein belongs solely to the Port Authority.



1. How did you arrive at the airport to board this plane?

Auto ☐ Airplane ☐ Public Bus ☐
Taxi ☐ Airport Coach ☐ Other ☐

2. Where did you start your trip to the airport?

City _____ _____
(If New York City, give borough) Zone No.
State _____

3. What is the destination of your trip?

City _____
State _____

4. What is the main purpose of your trip?

Personal ☐ Business ☐

If personal, please indicate whether it is for:

Vacation, holiday or leave . . . . . ☐
Accompanying husband on business trip . ☐
Going to or from school . . . . . ☐
Emergency . . . . . ☐
Other purpose (please specify)_____
_____

5. What class of ticket do you have for this flight?

	One Way	Round Trip
First Class	☐	☐
Coach or Tourist	☐	☐
Family Plan Half Fare	☐	☐

6. Approximately how many air trips have you made in the past 12 months? (Please count round trips as two and include **this** trip)

_____ Trips

7. Where do you live?

City _____ _____
(If New York City, give borough) Zone No.
State _____

8. What kind of work do you do?

Housewife ☐ Mechanic, Craftsman ☐
Student ☐ Factory Worker ☐
In Armed Forces ☐ Farmer ☐
Professional, Technical ☐ Salesman ☐
Manager, Official ☐ Retired ☐
Secretary, Clerk ☐ Other _____

9. In what kind of business are you employed?

Agriculture, Forestry & Fisheries ☐ Wholesale, Retail Trade ☐
Mining ☐ Business & Personal Services ☐
Construction ☐ Finance, Insurance, Real Estate ☐
Manufacturing ☐ Medicine, Law Education, Religion ☐
Transport, Utilities ☐ Other _____
Government ☐
Entertainment ☐

10. Sex: Male ☐ Female ☐

11. Age: 12-24 ☐ 25-44 ☐ 45-64 ☐ 65 & over ☐

12. What is your family's income (before taxes)?

Under $3,000 ☐ $10,000-$19,999 ☐
$3,000-$5,999 ☐ $20,000 and over ☐
$6,000-$9,999 ☐

WE THANK YOU FOR YOUR COOPERATION

THE QUESTIONNAIRE, *left:* front cover, *right:* inside pages

CONDUCT OF THE SURVEY

The Questionnaire: To make it easier for passengers to record answers to the questions and to speed tabulation, questions were designed where possible to be answered with a check-mark. The only exceptions were location names and number of trips. The questionnaire was printed on folded card stock, to form a booklet. Therefore, it was possible to write the answers without any backing for the questionnaire, and the answers were folded into the booklet to assure privacy. The statement on the cover of the questionnaire made clear the anonymity of the response. The categories employed in questions on income, industry and occupation are comparable to U. S. Census classifications.

Information concerning the following characteristics of air travelers was considered the most valuable data obtainable by in-flight survey methods:

Local Origin of Trip	Family Income
Flight Destination	Frequency of Travel
Purpose of Trip	Mode of Ground Transportation to the Airport
Age and Sex of Traveler	Type of Ticket Purchased
Occupation of Traveler	

Airline Responsibility: Each airline operating domestic scheduled flights from La Guardia, New York International, and Newark Airports cooperated with the Port Authority in conducting the survey. One of the airlines agreed to test a preliminary questionnaire on two of its flights. The results of the pre-test were used in refining the questionnaire, but the data themselves were not used in final tabulations.

The flight attendants distributed questionnaires and pencils to all passengers on the outbound flights selected. They encouraged the passengers to fill them out, then collected them. They then put the questionnaires into an envelope and mailed them back to the survey supervisor.

Port Authority Responsibility: The Port Authority conducted the survey up to the point at which the questionnaires were

delivered to the flight attendants of the selected flights, and after the completed questionnaires were returned by the flight attendants.

The first stages in planning the design of the survey involved selection of the subjects to be covered, representative types of flights to be surveyed, and the time period to be included. The questionnaire was then designed, pre-tested, and refined, and a probability sample of flights was drawn, in the fashion described in Appendix I.

A field supervisor met the flight attendant at the terminal shortly before the selected flight was scheduled to depart. He obtained from the airline dispatcher the number of adults and children boarding at the New York Airport. This information was used in computing response rates and in determining how many persons were represented by the actual respondents. He gave the attendant the necessary number of questionnaires and pencils, and an addressed, stamped envelope, and explained how to distribute and pick up the questionnaire on board the plane.

When the completed questionnaires were returned, codes were assigned to answers, the responses were recorded on punch-cards, and machine tabulations of the results were run off.

Each questionnaire was assigned its proper statistical weight so that the summary of all questionnaires, and certain meaningful sub-groups of questionnaires would accurately represent all passengers departing on all flights during the survey period.

In accordance with established policies and understandings, each airline has been provided with a complete set of punch-cards covering questionnaires returned by its own passengers if it so desired. Special studies and tabulations that may be of interest to the airlines covering the entire sample will be provided by the Port Authority under special arrangements, but information concerning the passengers of specific airlines is restricted to each airline concerned.

SCOPE OF THE SURVEY

The results of the survey are the summary of answers supplied by 7,783 passengers who constitute a probability sample of the 240,000 passengers on scheduled domestic flights leaving La Guardia, New York International and Newark Airports during the period September 9–29, 1954. The validity of the sample as a measure of the entire group is discussed in Appendix I.

Although the sample was limited to passengers on flights leaving the New York Area and therefore can only represent with assurance the total number of *departing* passengers, it is reasonable to assume that in many respects the sample did, in fact, closely represent total inbound domestic passengers as well. As shown in records submitted by the airlines, the number of inbound passengers approximately equalled the number of travelers leaving the airports during this period.

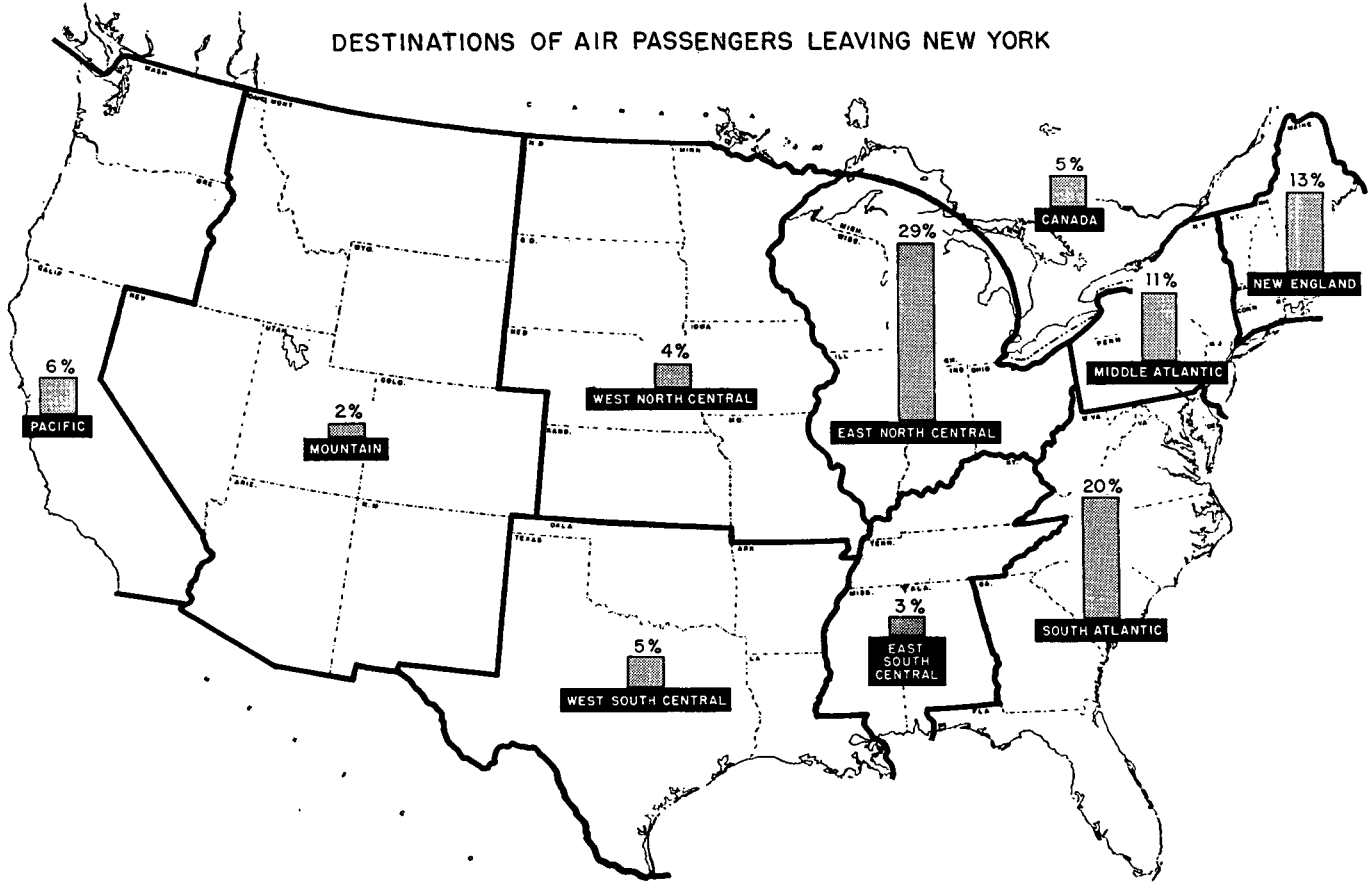
In the long run, inbound and outbound passengers are the same people, and will have the same incomes, occupations, industries and like characteristics although, during a particular three-week period, this may not be true. During September, for example, there may have been a disproportion of outbound business travelers, and inbound vacationers. In addition, inbound and outbound travelers may behave differently with respect to ground transportation used between the airport and the local terminus of the trip.

As the survey findings concentrate on passengers whose trip originated at the New York Area Airports, travelers who changed planes in New York, the so-called transfer passengers, are excluded from the basic tables and are treated separately in the last section of the findings. Excluding transfer passengers, there were 6,456 questionnaires representing 194,100 passengers. This number is the base of most of the tables in this report.

The basic tables, therefore, reflect the characteristics of locally originating passengers, departing from La Guardia, New York International, or Newark Airports on scheduled domestic flights during the period September 9–29, 1954. All points in the con-

tinental United States, Canada and Mexico are included as domestic destinations. The extension of the results to transfer passengers, to inbound passengers, or to outbound passengers during other times of the year, involves knowledge of travel habits beyond what is known from the survey itself.

However, there will be many circumstances in which the data from this survey will be useful, even though applied to groups of passengers who are not specifically represented by the sample.



Source: Table 1

FIGURE 1

FINDINGS

The Air Trip

Destination and Purpose of Trip: Table 1 reflects the answers to two items on the questionnaire. One is the destination of the passenger's trip, and the other is the purpose of the trip. The first was an open question, asking the respondent to fill in his destination. The second gave him a choice between "personal" and "business." In addition, if he answered "personal," he was asked to choose among four types of personal travel, or if none of these categories fitted his purpose, he was requested to write it out. A few respondents (about 1 percent) checked both the "business" and "personal" purposes, and these were included in the "business" column of Table 1.

It is important to distinguish "personal" from "pleasure." As will be seen in Table 4, an appreciable number of passengers expressed their purpose as "personal" without indicating that the trip was part of a vacation or holiday.

Sixty percent of the people traveled for business reasons, while 40 percent traveled for the various personal reasons. This preponderance of business travel is reflected in the destinations to which most of the passengers were going. Over half of the passengers were destined for the commercial and industrial New England, Middle Atlantic and East North Central states. The East North Central region alone accounted for 29 percent of the traffic. Two-thirds of the trips made to this area were for business, compared to 60 percent for the survey as a whole.

Business travel was also more important among passengers to New England and the Middle Atlantic states than for passengers generally. A substantial portion of travelers to Boston had a business purpose, and flights to that city constituted over half of all trips to New England. The purpose of trips to New England points other than Boston matched the United States average very closely.

The South Atlantic region ordinarily is not considered to be primarily an industrial area, and its relatively low percentage of

Table 1

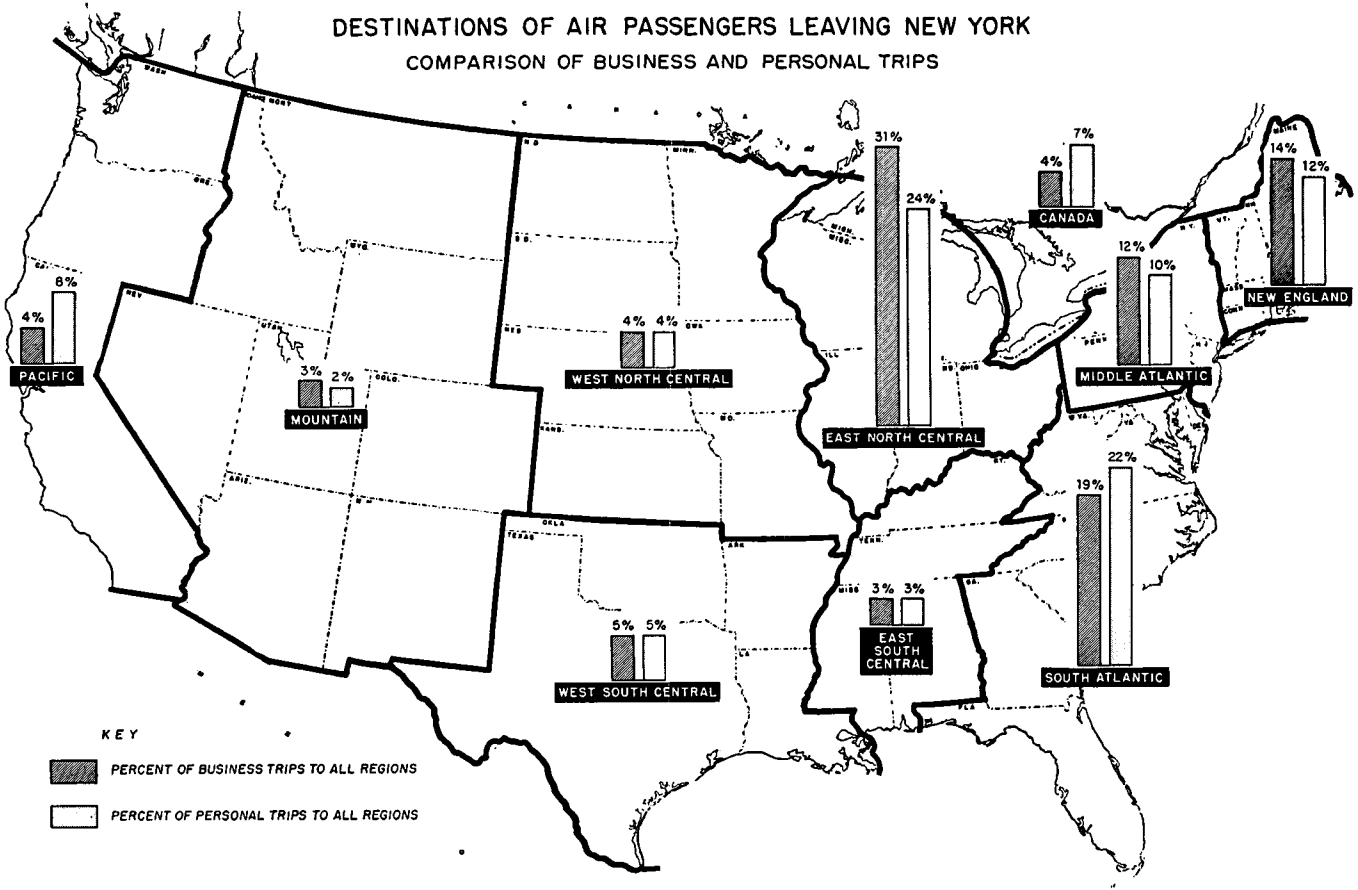
DESTINATION OF PASSENGERS TO REGIONS AND PRINCIPAL CITIES
BY PURPOSE OF TRIP
(Excludes Transfer Passengers)

Destination	*Percent of Passengers*	*Number of Passengers*	*Percent of Passengers by Purpose*	
			Business	*Personal*
All Destinations	100%	194,100	60	40
New England	13	25,900	64	36
Boston	7	14,400	69	31
Middle Atlantic	11	21,800	65	35
Pittsburgh	4	7,100	74	26
Buffalo	1	2,100	(59)	(41)
South Atlantic	20	39,500	56	44
Washington	7	13,700	73	27
Miami	5	9,100	26	74
East North Central	29	55,200	66	34
Chicago	11	21,500	67	33
Cleveland	4	8,100	67	33
Detroit	3	6,000	57	43
East South Central	3	6,000	58	42
West North Central	4	7,600	54	46
West South Central	5	9,400	59	41
Mountain	2	4,500	(64)	(36)
Pacific	6	11,200	46	54
Los Angeles	2	4,500	55	45
San Francisco	2	4,000	(41)	(59)
Canada	5	9,900	47	53
Montreal	3	5,900	50	50
Toronto	1	2,100	(43)	(57)
Other	2	3,100	(35)	(65)

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

business travel in total appears to support this belief. Closer examination, however, shows that this ratio is greatly influenced by Miami; 65 percent of the travel to all *other* places in the South Atlantic states was in fact for business purposes.

Except for the small number of passengers going to the



Source: Table 2

FIGURE 2

mountain states, each of the remaining regions drew a higher proportion of passengers traveling for personal reasons than did the country as a whole. Non-business travelers constituted over half of those going to Canada.

Table 2 tells the magnitude of travel to each region, and to some cities, for all business travel and for all personal travel. The differences in percentages among the three columns reflect

Table 2

DESTINATION OF PASSENGERS TO REGIONS AND PRINCIPAL CITIES
BY PURPOSE OF TRIP
(Excludes Transfer Passengers)

	Percent of Passengers for Each Purpose		
Destination	*All Purposes*	*Business*	*Personal*
All Destinations	100%	100%	100%
New England	13	14	12
Boston	7	9	6
Middle Atlantic	11	12	10
Pittsburgh	4	5	2
Buffalo	1	1	1
South Atlantic	20	19	22
Washington	7	9	5
Miami	5	2	9
East North Central	29	31	24
Chicago	11	13	9
Cleveland	4	5	3
Detroit	3	3	3
East South Central	3	3	3
West North Central	4	4	4
West South Central	5	5	5
Mountain	2	3	2
Pacific	6	4	8
Los Angeles	2	2	3
San Francisco	2	1	3
Canada	5	4	7
Montreal	3	3	4
Toronto	1	1	2
Other	2	1	3
Number of Passengers	194,100	117,200	76,900

the proportions of business and personal travel shown in Table 1. The greatest differences are for the Pacific Coast and Canada, each of which had approximately twice its share of personal trips compared with its share of business trips. This is a reflection of the fact, seen in Table 1, that these were areas to which many people traveled for personal reasons.

Table 3

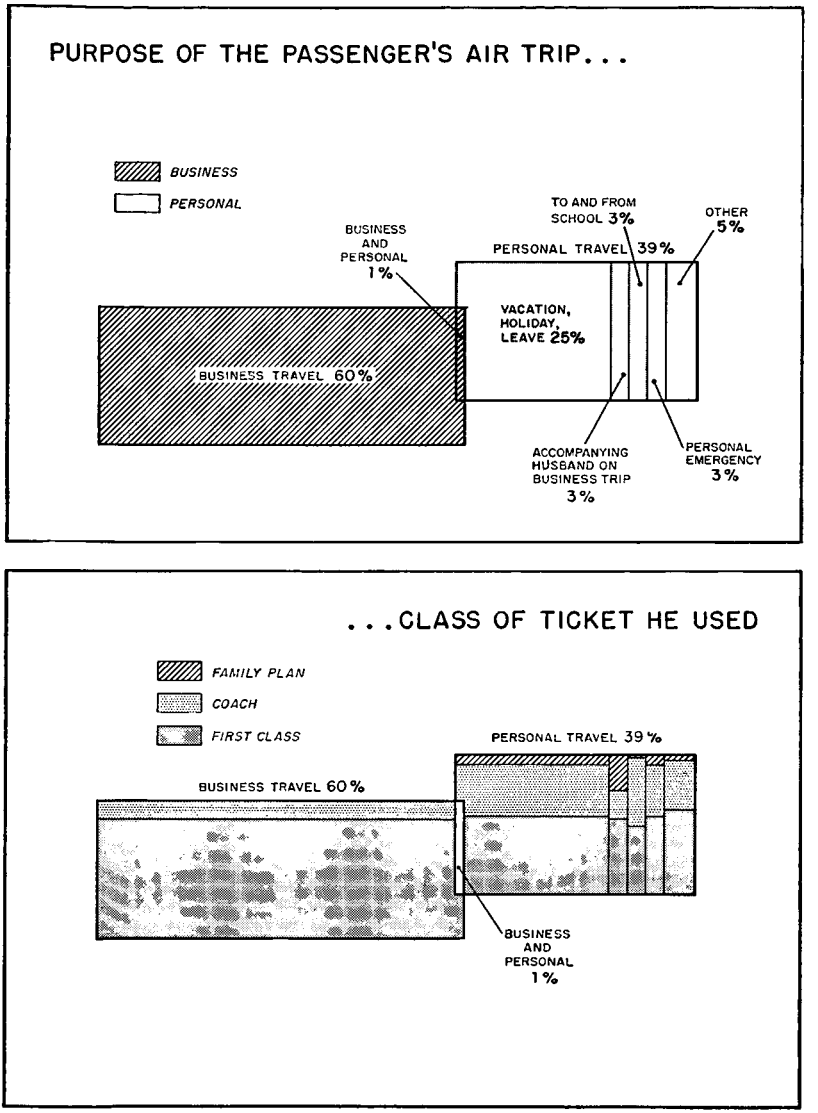
DESTINATION OF PASSENGERS TO THE FIFTEEN MOST FREQUENT DESTINATIONS BY PURPOSE OF TRIP
(Excludes Transfer Passengers)

Rank	*Destination*	*Percent of Passengers*	*Number of Passengers*	*Percent of Passengers by Purpose*	
				Business	*Personal*
1	Chicago	11	21,500	67	33
2	Boston	7	14,400	69	31
3	Washington	7	13,700	73	27
4	Miami	5	9,100	26	74
5	Cleveland	4	8,100	67	33
6	Pittsburgh	4	7,100	74	26
7	Detroit	3	6,000	57	43
8	Montreal	3	5,900	50	50
9	Los Angeles	2	4,500	55	45
10	San Francisco	2	4,000	(41)	(59)
11	Cincinnati	2	3,200	(80)	(20)
12	Milwaukee	2	3,100	(66)	(34)
13	Dallas	1	3,000	*	*
14	St. Louis	1	2,900	(60)	(40)
15	Denver	1	2,900	*	*

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

* Based on too few cases to merit publication.

Boston, Pittsburgh, Washington, Chicago and Cleveland combined accounted for 41 percent of all business travel, but only 25 percent of travel for personal reasons. Miami, on the other



Source: Table 4

FIGURE 3

hand, was the destination of 9 percent of the personal trips, contrasted with 2 percent of business trips.

Table 3 ranks the top fifteen cities to which people went dur-

ing the survey period. The first six cities accounted for about 40 percent of the scheduled domestic passengers. With the exception of Miami, all of these cities had a high percentage of business travel. Miami had about 5 percent of the total traffic, and recorded a very high percentage of pleasure travel.

A surprising note in Table 3 is the fact that Detroit registered a lower-than-average percentage of business travel. The reasons for this are not apparent, although a possible answer is that in addition to the number of people going to Detroit itself, many passengers may have listed Detroit as their destination when in fact they were going to Michigan resort areas. Montreal, which is a center of financial and commercial activity, as well as a vacation spot, reflects these characteristics by the equal distribution of business and pleasure travel to that city.

Confidence in the distribution of traffic among cities during the survey period is strengthened by the Civil Aeronautics Board Origination and Destination survey of September 1953, which indicates a similar distribution of traffic out of New York. Though the 1953 survey reflects activity that occurred a year earlier, there is no reason to expect any radical change in the destinations of air passengers over a relatively short period of time. A comparison of the data from the two sources is given in Appendix III. Data from the September 1954 C.A.B. O & D survey are not yet available.

Purpose of Trip and Class of Ticket: The relationship between the purpose of a passenger's trip and the type of ticket he buys is shown in Table 4. Three-fourths of all passengers, irrespective of the purpose of their trip, traveled first-class. Examination of the purpose of the passengers' trips shows a strong relationship between purpose of trip and type of ticket. Among business travelers, 87 percent had first-class accommodations, compared with only 56 percent for those who traveled for personal reasons. The various categories of personal travelers shows a similar distribution of the various types of ticket, with the exception of those who accompanied their husbands on a business trip. One-fourth of these travelers had family-plan tickets.

Table 4

PURPOSE OF TRIP AND CLASS OF TICKET
(Excludes Transfer Passengers)

Purpose of Trip	*Percent of Passengers*	*Number of Passengers*	*Perecent of Passengers by Class of Ticket*		
			First Class	*Coach*	*Family Plan*
All Purposes	100%	194,100	74	23	3
Business	60	115,400	87	13	0
Personal, Total	39	76,900	56	37	7
Vacation, Holiday, Leave	25	48,200	56	38	6
Accompanying Husband on Business Trip	3	6,700	55	20	25
To or From School	3	6,400	49	50	1
Personal Emergency	3	5,500	56	38	6
Other or Unspecified Personal	5	10,100	61	36	3
Business and Personal	1	1,800	*	*	*

* Based on too few cases to merit publication.

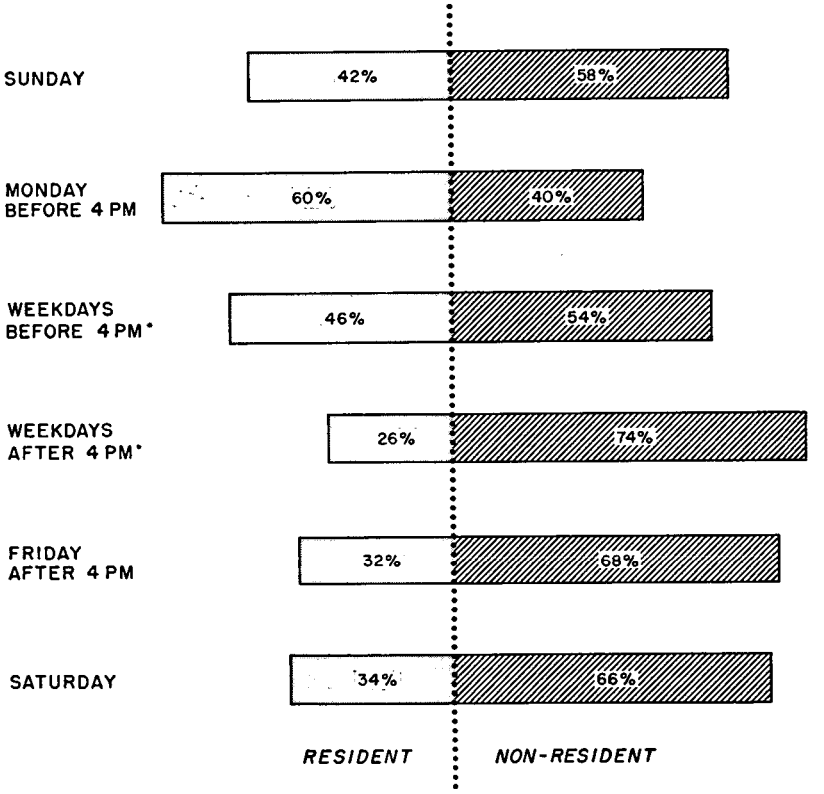
Table 5

PASSENGERS RESIDENT AND NON-RESIDENT IN THE METROPOLITAN AREA, LEAVING NEW YORK DURING CERTAIN PERIODS OF THE WEEK
(Excludes Transfer Passengers)

Period	*Passengers*	*Percent of Passengers by Residence in Metropolitan Area*	
		Resident	*Non-Resident*
All Days	194,100	41	59
Sunday	27,800	42	58
Monday before 4 P.M.	17,500	60	40
Weekdays[a] before 4 P.M.	64,000	60	54
Weekdays[a] after 4 P.M.	45,800	26	74
Friday after 4 P.M.	15,100	32	68
Saturday	23,900	34	66

[a] Monday before 4 P.M. and Friday after 4 P.M. were not considered as weekdays, and are shown separately.

RESIDENT AND NON-RESIDENT PASSENGERS LEAVING NEW YORK DURING CERTAIN PERIODS OF THE WEEK



*Monday before 4pm and Friday after 4pm were not considered as weekdays, and are shown separately.

Source: Table 5

FIGURE 4

A family-plan traveler is one who has a ticket that entitles him to travel at a reduced price with a relative who has a first-class ticket, subject to certain regulations. Thus, the 25 percent of those accompanying their husbands who traveled family plan, are traveling on first-class flights. Combining this 25 percent with

the 55 percent who had first-class tickets results in a total of 80 percent on first-class flights for this group. Therefore this distribution closely and logically resembles that of the business travelers. Table 4 indicates that about 6 percent of all business travelers took their wives with them.

The largest purpose category among personal travelers is the one in which the respondents stated that they were traveling on vacation, holiday or leave. This group accounted for 25 percent of all passengers during the survey and 63 percent of all those traveling for personal reasons. Although more than half of the passengers traveling for personal reasons were on first-class flights, this group's proportion of coach passengers was three times that of the business group.

Day and Hour Preference of Trip: Table 5 shows that residents of the Metropolitan Area have a preference for leaving early in the day and early in the week. This tendency is evidenced by the fact that the residents' percentage of all passengers ranges from a strong 60 percent on Mondays before 4 P.M. through 46 percent on weekdays before 4 P.M., and dips to 32 percent on Friday evenings, and 26 percent on weekday evenings. The residents' preference for an earlier departure during the day is probably due to their desire to remain home, rather than leave later during the previous day and spend the night away from home. Similarly, their tendency to leave the city early in the week probably reflects the preference to return home for the weekend.

Non-residents of the Metropolitan Area indicated an opposite pattern. They preferred to leave later in the day and later in the week, probably for the same reasons that passengers residing in the New York Area did the opposite. Non-resident passengers tend to leave later in the day, probably in order to avoid spending an extra night away from home. They also leave later in the week so as to be home for the weekend. If they had preferred to spend a weekend in New York, Monday's early traffic would have been more heavily affected by non-resident passengers. This explanation cannot be expected to apply to vacation trips, but these were seen to constitute only 25 percent of the total.

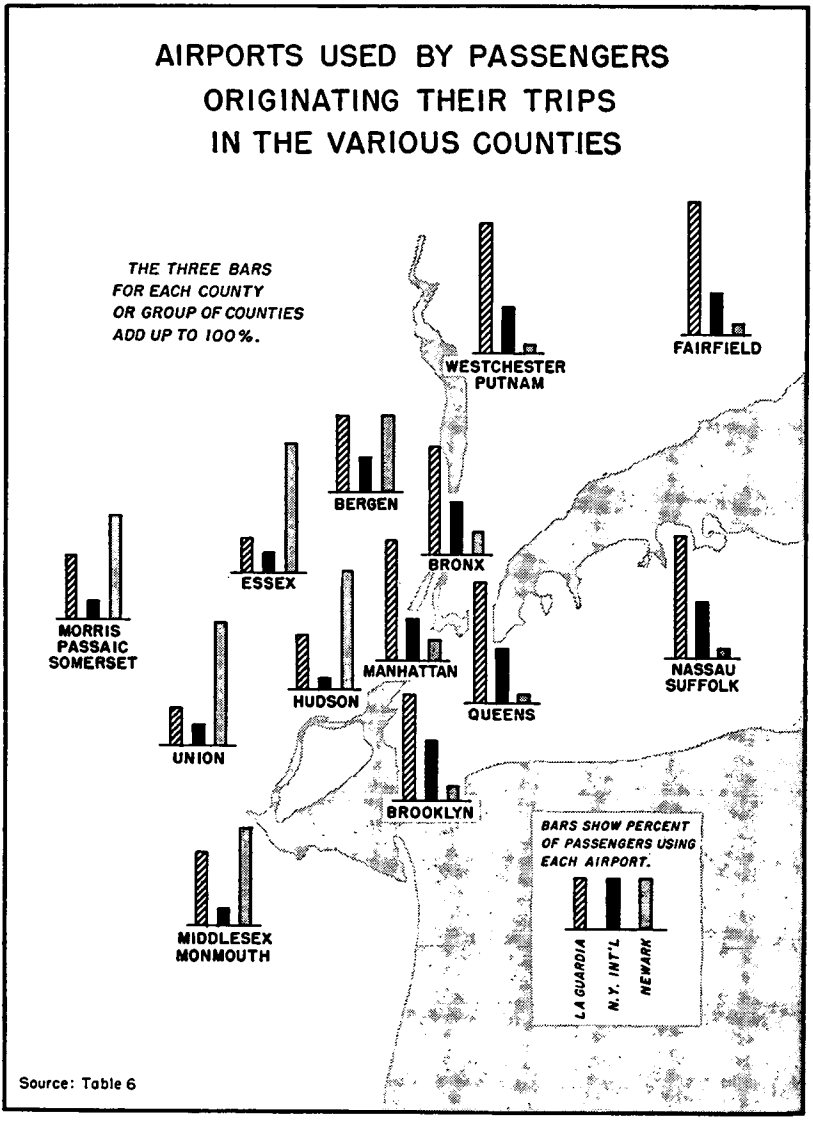

AIRPORTS USED BY PASSENGERS
ORIGINATING THEIR TRIPS
IN THE VARIOUS COUNTIES
THE THREE BARS
FOR EACH COUNTY
OR GROUP OF COUNTIES
ADD UP TO 100%.
WESTCHESTER
PUTNAM
FAIRFIELD
BERGEN
BRONX
ESSEX
MORRIS
PASSAIC
SOMERSET
MANHATTAN
HUDSON
QUEENS
NASSAU
SUFFOLK
UNION
BROOKLYN
MIDDLESEX
MONMOUTH
BARS SHOW PERCENT
OF PASSENGERS USING
EACH AIRPORT.
LA GUARDIA
N.Y. INT'L
NEWARK
Source: Table 6

FIGURE 5

The Trip to the Airport

In addition to providing information about where and when these passengers travel, the in-flight survey provides data about the local origin of their trip, how the passengers divided their patronage among the three airports and the means of ground transportation they used in getting to the airports.

Local Origin: It is evident by the distribution of the total traffic

Table 6

AIRPORTS USED BY PASSENGERS, ACCORDING TO ORIGIN OF TRIP TO AIRPORT FROM PRINCIPAL COUNTIES
(Excludes Transfer Passengers)

Origin	*Number of Passengers*	*Percent of Passengers by Airport Used*		
		La Guardia	*N. Y. International*	*Newark*
All Origins	194,100	59	23	18
Metropolitan Area	187,800	59	23	18
East of Hudson	157,900	65	25	10
Manhattan	102,200	65	23	12
Bronx	3,700	(59)	(29)	(12)
Brooklyn	9,100	58	33	9
Queens	14,400	65	30	5
Nassau and Suffolk	15,400	65	30	5
Westchester and Putnam	8,800	70	25	5
Fairfield	4,300	(72)	(23)	(5)
West of Hudson	29,900	31	12	57
Bergen	6,300	41	18	41
Hudson	1,900	(30)	(6)	(64)
Morris, Passaic, Somerset	4,100	(35)	(10)	(55)
Essex	9,300	19	11	70
Middlesex and Monmouth	2,900	(39)	(8)	(53)
Union	3,700	(21)	(12)	(67)
Outside Metropolitan Area	6,300	39	32	29
New England	3,400	(50)	(40)	(10)
Middle Atlantic	2,900	(27)	(21)	(52)

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

NOTE: Components do not add to totals because smaller counties are omitted.

among airports, as seen in Table 6, that La Guardia gets the lion's share (59 percent) at this time. However, this distribution is quite different among the various counties from which passengers originate. The county of origin is not necessarily the same as residence, inasmuch as many people who begin their trip from a county are not resident there, while others who are

Table 7

COUNTY OF ORIGIN OF TRIPS TO EACH AIRPORT
(Excludes Transfer Passengers)

Origin	*Number of Passengers, 3 Airports*	*Percent of Passengers to Each Airport*			
		Three Airports	*LGA*	*NYIA*	*NWK*
Total	194,100	100%	100%	100%	100%
Metropolitan Area	187,800	97	98	96	95
East of Hudson	157,900	82	90	88	45
Manhattan	102,200	53	58	52	36
Bronx	3,700	2	2	2	1
Brooklyn	9,100	5	5	7	2
Queens	14,400	7	8	10	2
Nassau	13,600	7	8	9	2
Suffolk	1,800	1	1	1	0
Westchester	8,700	5	5	5	1
Putnam	100	0	0	0	0
Fairfield	4,300	2	3	2	1
West of Hudson	29,900	15	8	8	50
Bergen	6,300	3	2	3	8
Hudson	1,900	1	1	0	4
Passaic	1,200	1	0	1	1
Morris	2,400	1	1	1	4
Essex	9,300	5	2	2	19
Somerset	500	0	0	0	1
Middlesex	1,600	1	1	0	3
Union	3,700	2	1	1	7
Monmouth	1,300	1	0	0	2
Orange	500	0	0	0	0
Rockland	400	0	0	0	0
Richmond	800	0	0	0	1
Outside Metropolitan Area	6,300	3	2	4	5
New England	3,400	2	1	3	1
Middle Atlantic	2,900	1	1	1	4
Number of Passengers	194,100	194,100	113,900	45,500	34,700

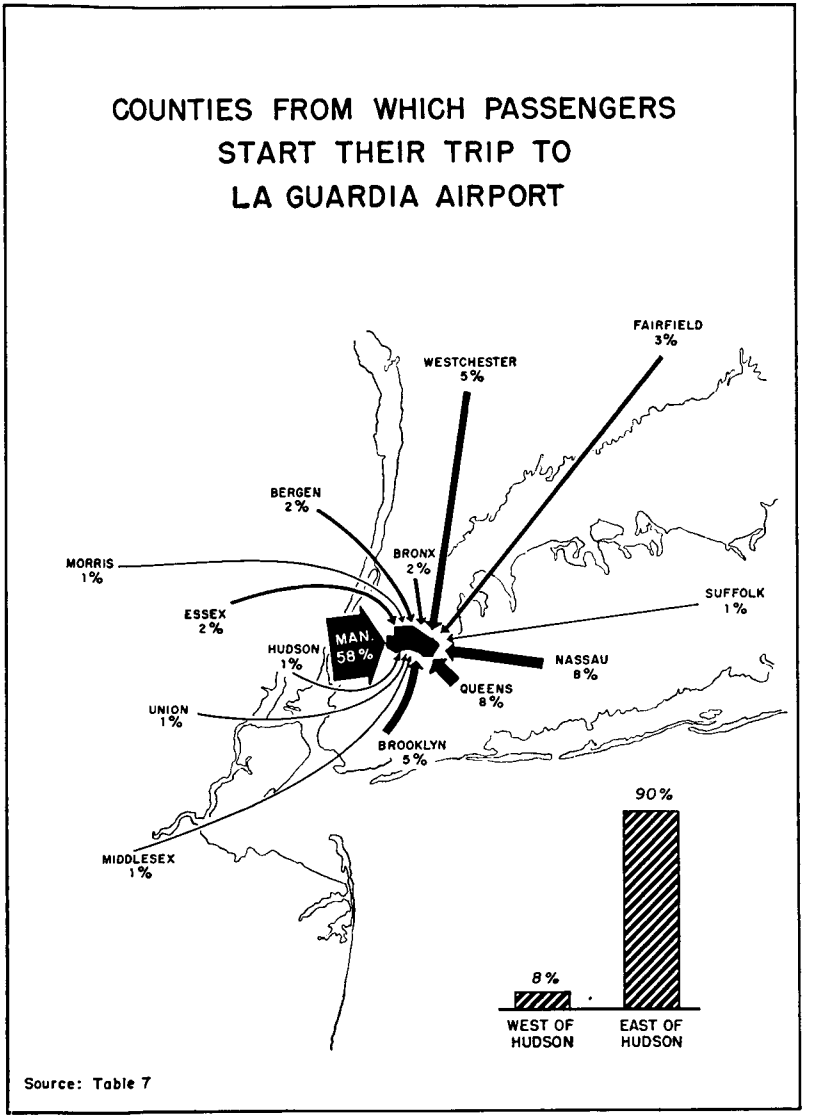

COUNTIES FROM WHICH PASSENGERS
START THEIR TRIP TO
LA GUARDIA AIRPORT
FAIRFIELD
3%
WESTCHESTER
5%
BERGEN
2%
MORRIS
1%
BRONX
2%
ESSEX
2%
SUFFOLK
1%
MAN.
58%
HUDSON
1%
NASSAU
8%
QUEENS
8%
UNION
1%
BROOKLYN
5%
MIDDLESEX
1%
90%
8%
WEST OF
HUDSON
EAST OF
HUDSON
Source: Table 7

FIGURE 6

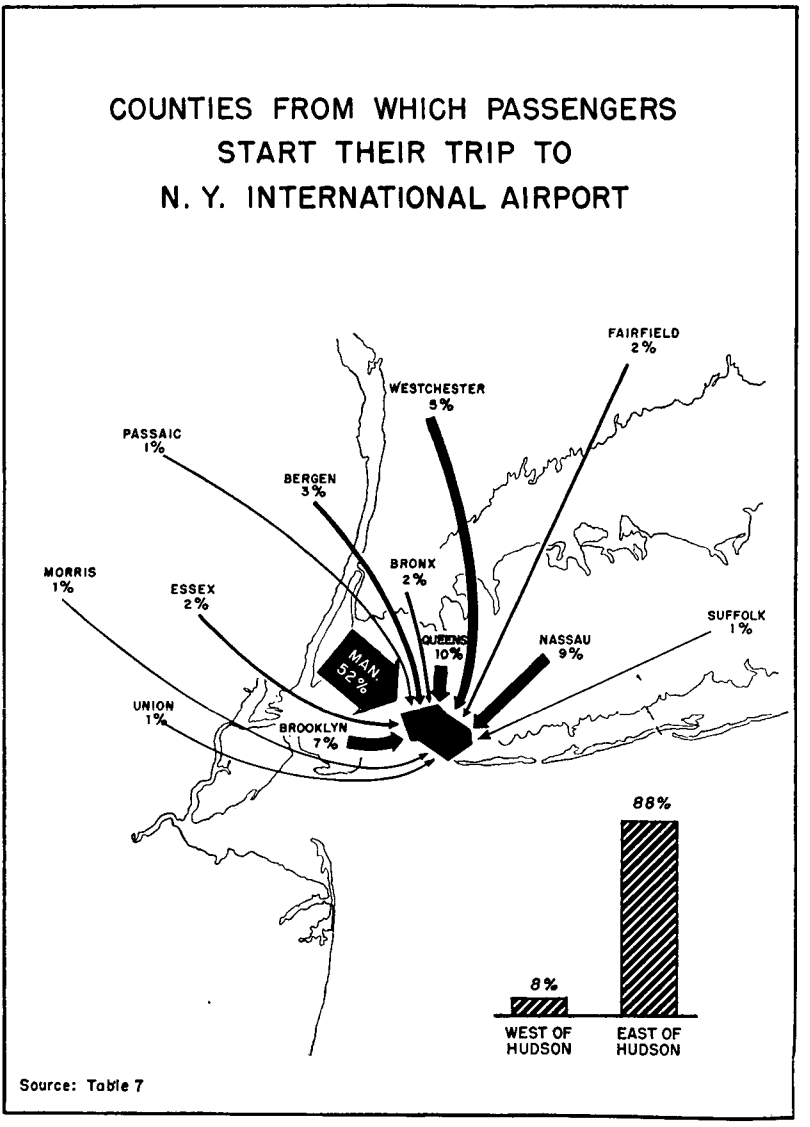

COUNTIES FROM WHICH PASSENGERS
START THEIR TRIP TO
N. Y. INTERNATIONAL AIRPORT
FAIRFIELD
2%
WESTCHESTER
5%
PASSAIC
1%
BERGEN
3%
BRONX
2%
MORRIS
1%
ESSEX
2%
MAN.
52%
QUEENS
10%
NASSAU
9%
SUFFOLK
1%
UNION
1%
BROOKLYN
7%
88%
8%
WEST OF
HUDSON
EAST OF
HUDSON
Source: Table 7

FIGURE 7

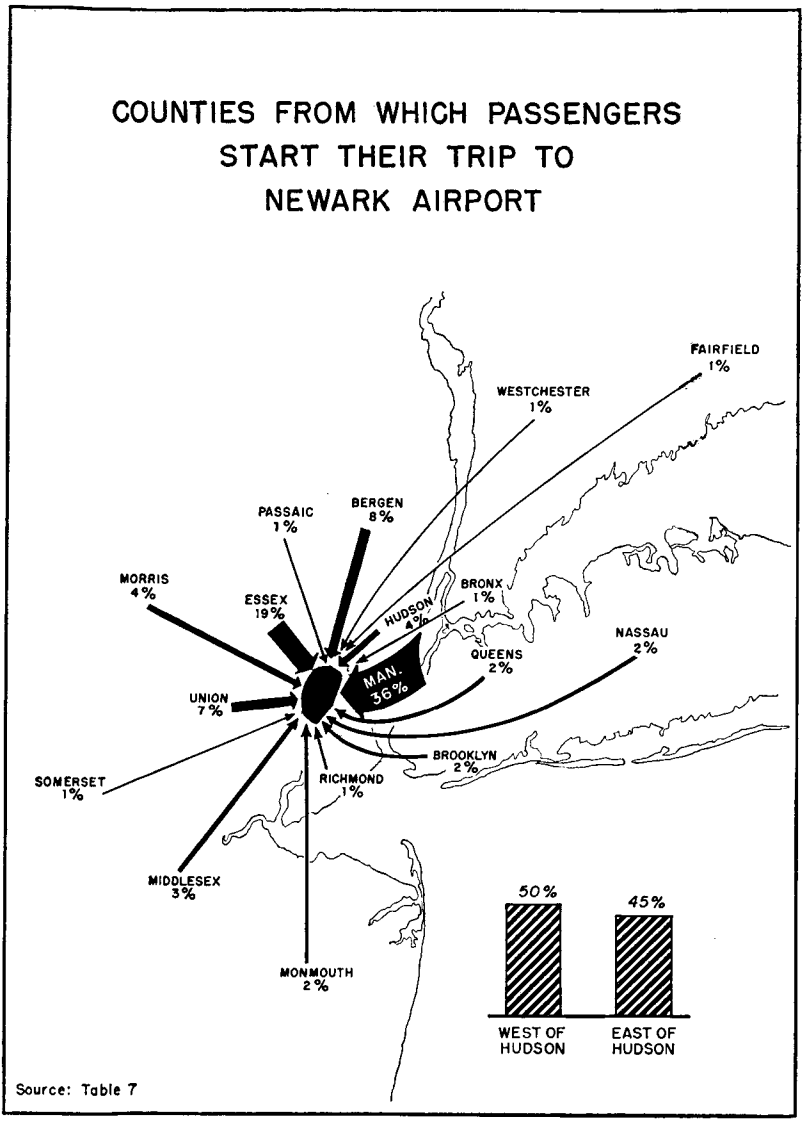

COUNTIES FROM WHICH PASSENGERS START THEIR TRIP TO NEWARK AIRPORT
FAIRFIELD 1%
WESTCHESTER 1%
PASSAIC 1%
BERGEN 8%
MORRIS 4%
ESSEX 19%
HUDSON 4%
BRONX 1%
NASSAU 2%
QUEENS 2%
MAN. 36%
UNION 7%
BROOKLYN 2%
SOMERSET 1%
RICHMOND 1%
MIDDLESEX 3%
MONMOUTH 2%
50%
45%
WEST OF HUDSON
EAST OF HUDSON
Source: Table 7

FIGURE 8

resident in the county may begin their trip elsewhere. Data on residence are treated in a later section

The counties on either side of the Hudson River are basically different in their distribution of traffic among the airports. This is best seen in the percentages of passengers going to Newark Airport (57 percent of the passengers coming from the counties west of the Hudson River went to Newark Airport, while 10 percent of those from east of the river did so). Counties east of the Hudson River are similar in their distribution of passengers among airports, while the counties across the river show greater diversity. At one extreme, among the New Jersey counties, 82 percent of the total traffic from Bergen County is divided equally between Newark and La Guardia Airports, illustrating that Newark Airport does not have the great advantage for people in Bergen County that it does for those in other parts of Northern New Jersey. At the other extreme, 70 percent of the people leaving from Essex County used Newark Airport.

The data on which Table 7 is based are the same as those underlying Table 6, but rearranged to reflect the origin of all passengers who took flights from each airport. This table shows clearly that proximity and accessibility are strong factors in determining the areas from which each airport draws its patrons. La Guardia and New York International Airports draw overwhelmingly from the counties east of the Hudson River, while Newark draws from the two sides of the river about equally. The preponderant importance of Manhattan as a source of passengers is apparent for all airports, especially the two Long Island facilities.

Ground Transportation: The means of transportation by which air passengers get to the airports from the various counties is largely influenced by the distances, the transportation facilities and the time and expense involved in getting there. As each airport has a unique transportation situation, each is treated separately, in three parts of Table 8.

Table 8A distributes the major modes of ground transportation to La Guardia Airport—automobile, taxi and airport coach

Table 8A

ORIGIN OF PASSENGERS DEPARTING BY AIR FROM LA GUARDIA AIRPORT BY MODE OF GROUND TRANSPORTATION TO AIRPORT
(Excludes Transfer Passengers)

Origin	*Percent of Passengers*	*Number of Passengers*	*Percent of Passengers by Mode of Transportation to Airport*			
			Auto	*Taxi*	*Airport Coach*	*Other*
Total	100%	113,900	33%	39%	25%	3%
Metropolitan Area	98	111,400	33	40	24	3
East of Hudson	90	102,300	31	43	23	3
Manhattan	58	66,500	13	53	31	3
Brooklyn	5	5,200	56	27	11	6
Queens	8	9,300	61	28	3	8
Nassau	8	8,700	81	11	5	3
Westchester	5	6,100	66	21	9	4
Fairfield	3	3,100	(50)	(34)	(16)	(0)
West of Hudson	8	9,100	54	13	29	4
Outside Metropolitan Area	2	2,500	(64)	(23)	(10)	(3)

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

NOTE: Components add to less than totals because smaller counties are omitted.

The modes of transportation are those cited by passengers in response to the question, "How did you arrive at the airport to board this plane?" As such, where more than one mode was used, it was the final mode that was reported.

for passengers coming from the entire Metropolitan Area and for some of the larger counties. The area west of the Hudson is treated as a unit since the data with respect to La Guardia Airport were too sparse to allow a breakdown by counties.

Manhattan exerts an extremely strong influence on the average distribution of modes of ground transportation to La Guardia Airport for the Metropolitan Area as a whole, since 58 percent of all La Guardia passengers came from this Borough. Manhattan's low percentage of car use to the airport probably results from the fact that a very large portion of the air passengers from Manhattan do not reside in the Metropolitan Area and therefore do not have the use of an automobile. As might be expected, the proportion of persons using airport coach is by far highest for

Table 8B

ORIGIN OF PASSENGERS DEPARTING BY AIR FROM NEW YORK INTERNATIONAL AIRPORT
BY MODE OF GROUND TRANSPORTATION TO AIRPORT
(Excludes Transfer Passengers)

Origin	*Percent of Passengers*	*Number of Passengers*	*Percent of Passengers by Mode of Transportation to Airport*			
			Auto	*Taxi*	*Airport Coach*	*Other*
Total	100%	45,500	38%	17%	42%	3%
Metropolitan Area	96	43,500	39	17	41	3
East of Hudson	88	39,800	38	17	42	3
Manhattan	52	23,500	12	23	61	4
Brooklyn	7	3,000	(70)	(23)	(6)	(1)
Queens	10	4,400	77	13	8	2
Nassau	9	4,100	90	5	4	1
Westchester	5	2,100	(71)	(5)	(24)	(0)
West of Hudson	8	3,700	53	8	34	5
Outside Metropolitan Area	4	2,000	(44)	(17)	(37)	(2)

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

NOTE: Components add to less than totals because smaller counties are omitted.

The modes of transportation are those cited by passengers in response to the question, "How did you arrive at the airport to board this plane?" As such, where more than one mode was used, it was the final mode that was reported.

people coming from Manhattan, and is higher for those leaving Brooklyn than other counties. Over half of all the people going to La Guardia from Manhattan arrive at the airport by taxi, reflecting its relative inexpensiveness and convenience.

Table 8B which deals with New York International, shows that Manhattan provides almost the same proportion of the total traffic to this airport as for La Guardia. Here again, the percentage of auto use from Manhattan is the same as in Table 8A. However, a considerable shift has occurred with respect to the use of taxi and airport coach services. The percentage of airport coach users is twice that recorded at La Guardia, while the percentage of taxi users is only half that of La Guardia. Expense strongly influences the choice of ground transportation for those

Table 8C

ORIGIN OF PASSENGERS DEPARTING BY AIR FROM NEWARK AIRPORT
BY MODE OF GROUND TRANSPORTATION TO AIRPORT
(Excludes Transfer Passengers)

Origin	Percent of Passengers	Number of Passengers	Percent of Passengers by Mode of Transportation to Airport: Auto	Taxi	Airport Coach	Other
Total	100%	34,700	50%	12%	34%	4%
Metropolitan Area	95	32,800	50	12	34	4
East of Hudson	46	15,800	19	6	70	5
Manhattan	36	12,400	12	7	75	6
West of Hudson	49	17,000	78	17	1	4
Bergen	8	2,700	(92)	(4)	(3)	(1)
Essex	19	6,500	67	28	0	5
Union	7	2,500	(94)	(4)	(2)	(0)
Outside Metropolitan Area	5	1,900	*	*	*	*

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

* Based on too few cases to merit publication.

NOTE: Components add to less than totals because smaller counties are omitted.

The modes of transportation are those cited by passengers in response to the question, "How did you arrive at the airport to board this plane?" As such, where more than one mode was used, it was the final mode that was reported.

not using a private automobile; airport coach fares are the same to both airports, while the taxi fare is more expensive to New York International because of its greater distance from Manhattan.

Table 8C concerns the use of ground transportation to Newark Airport. Not as many counties are listed individually as for the other airports, because of the smaller sample size. Manhattan, which contributed more than one-third of the traffic to Newark Airport during the survey period, distributed the ground transportation sharply in favor of airport coach. Essex County, where Newark Airport is situated, distributed the use of ground transportation mainly between automobile and taxi, with a small portion (5 percent) probably going by public buses.

ORIGIN OF PASSENGERS DEPARTING FROM EACH AIRPORT AND GROUND TRANSPORTATION USED

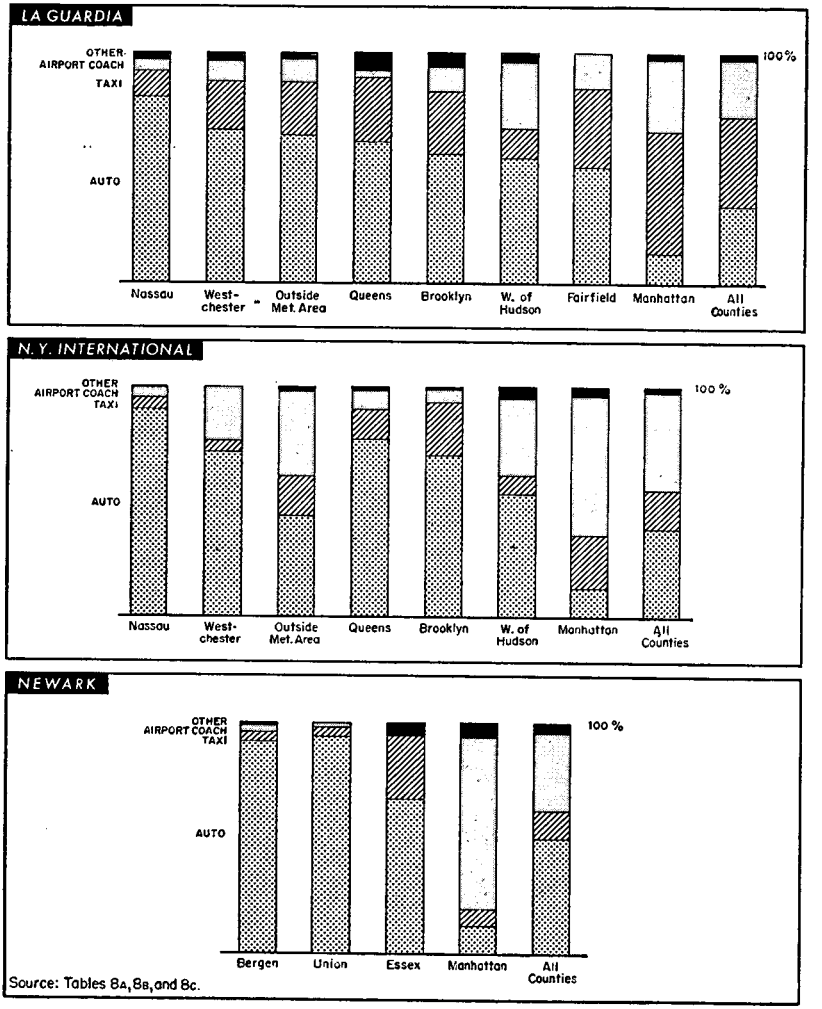


FIGURE 9

No airport coach service to Newark Airport originates on the New Jersey side of the Hudson River. Though the sample size for Bergen and Union Counties is not large enough to interpret their results with certainty, the strength of the use of a private

Table 9

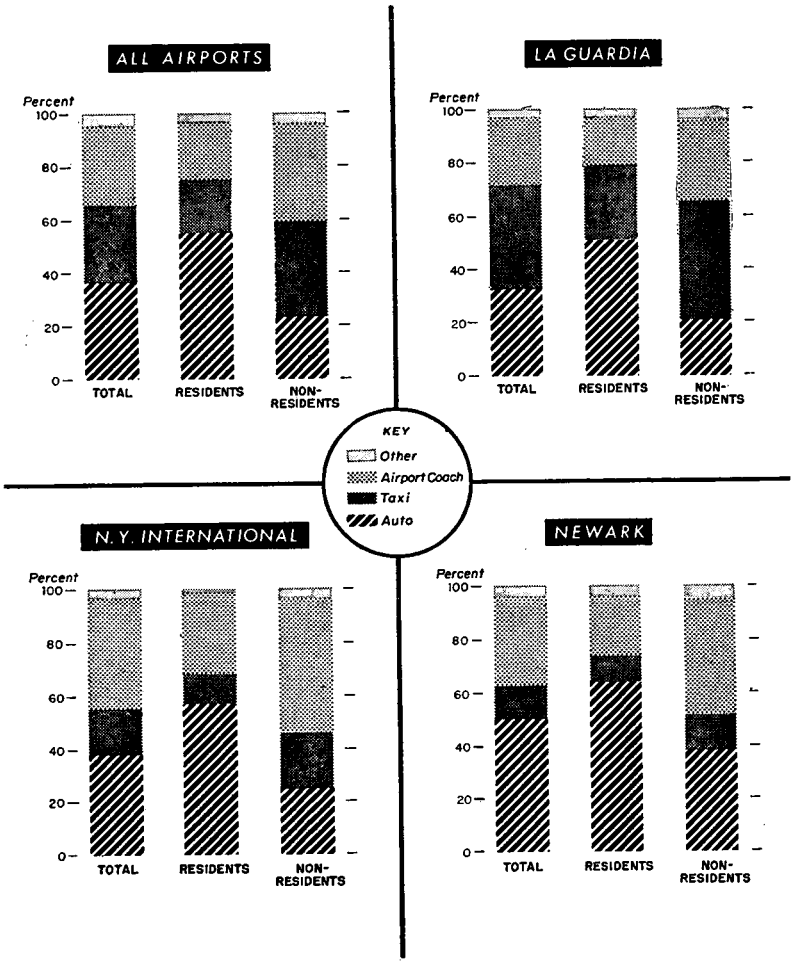
GROUND TRANSPORTATION TO EACH AIRPORT
FOR RESIDENTS AND NON-RESIDENTS OF THE METROPOLITAN AREA
(Excludes Transfer Passengers)

Airport	*Percent of Passengers*	*Number of Passengers*	*Percent of Passengers by Mode of Transportation to Airport*			
			Auto	*Taxi*	*Airport Coach*	*Other*
All Airports						
Total	100%	194,100	37%	29%	30%	4%
Residents	41	79,400	55	20	22	3
Non-Residents	59	114,700	24	35	37	4
La Guardia						
Total	100%	113,900	33	39	25	3
Residents	40	45,000	51	28	18	3
Non-Residents	60	68,900	21	45	30	4
New York International						
Total	100%	45,500	38	17	42	3
Residents	42	19,000	57	11	31	1
Non-Residents	58	26,500	25	21	50	4
Newark						
Total	100%	34,700	50	12	34	4
Residents	44	15,400	64	10	22	4
Non-Residents	56	19,300	38	13	44	5

car is a probable measure of wide automobile ownership and excellent facilities provided by the New Jersey Turnpike and other roads.

Table 9 compares the mode of ground transportation to the airports used by residents and non-residents of the Metropolitan Area. This table illustrates that the use of a private car is mainly restricted to resident passengers, since fewer of the non-residents would be expected to have a private car available. For both residents and non-residents, relatively many more passengers used a car to get to Newark Airport than to the two New York Airports. This reflects the smaller proportion of persons coming from Manhattan, whence automobiles are relatively infrequently used.

Curiously, the greater rate of car usage at Newark compared with the other airports is primarily due to higher automobile use among non-resident air passengers. The high cost of trans-Hudson



Source: Table 9

FIGURE 10

taxi service is reflected in the extensive use (44 percent) of the airport coach by non-residents in going to Newark Airport from Manhattan.

The Airport Used and Its Relationship to Residence: Table 10 distributes the 79,000 in-flight survey passengers who reside in

the Metropolitan Area, according to their county of residence, including a percentage distribution of the traffic that these counties provided to each of the airports. This table distinguishes itself from Tables 8A, 8B and 8C in that it deals with residents of the Metropolitan Area alone and in that the counties listed are not necessarily the point of origin for the air trip.

A notable point of information derived from Table 10 is the smaller importance of Manhattan as a source of travel, when con-

Table 10

COUNTY OF RESIDENCE, FOR RESIDENTS OF METROPOLITAN AREA DEPARTING FROM EACH AIRPORT
(Excludes Transfer Passengers)

		Percent of Passengers to Each Airport			
	Number of Passengers, 3 Airports	*Three Airports*	*La Guardia*	*N. Y. International*	*Newark*
Total Metropolitan Area	79,400	100%	100%	100%	100%
East of Hudson	58,500	74	83	83	33
Manhattan	14,600	18	21	18	12
Bronx	3,000	4	4	5	2
Brooklyn	5,800	7	7	11	4
Queens	9,500	12	13	16	4
Nassau	11,000	14	16	15	6
Suffolk	1,600	2	2	2	1
Westchester	9,000	12	14	11	3
Putnam	0	0	0	0	0
Fairfield	4,000	5	6	5	1
West of Hudson	20,900	26	17	17	67
Bergen	5,300	7	6	5	13
Hudson	800	1	1	0	4
Passaic	1,100	1	1	1	2
Morris	1,900	2	2	1	6
Essex	5,700	7	3	4	23
Somerset	400	1	0	1	2
Middlesex	500	1	0	1	1
Union	2,800	3	1	3	11
Monmouth	1,100	1	1	0	3
Orange	400	1	0	1	1
Rockland	300	0	1	0	0
Richmond	600	1	1	0	1
Number of Passengers		79,400	45,000	19,000	15,400

trasted with the percent of persons beginning their trip in the Borough. This is to be expected, since most of the people leaving from Manhattan either reside in other counties in the Metropolitan Area or reside outside the Metropolitan Area. Manhattan is the business and vacation center of the city, and its offices and hotels make it the major point from which people would be expected to depart for the airports.

The geographical differences between airports are highlighted in the case of Newark Airport where, except for Manhattan, traffic is primarily derived from the New Jersey counties. Essex County, which has the largest population and which embraces Newark Airport, quite naturally has the highest percent (23 percent) of the total traffic to that airport by *residents* of the

Table 11

AIRPORT USED BY PASSENGERS RESIDING IN PRINCIPAL COUNTIES OF THE METROPOLITAN AREA
(Excludes Transfer Passengers)

	Number of Passengers, 3 Airports	*Percent of Passengers by Airport*		
		La Guardia	*N. Y. International*	*Newark*
Total	194,100	59%	23%	18%
Total Metropolitan Area	79,400	57	24	19
East of Hudson	58,500	64	27	9
Manhattan	14,600	63	24	13
Bronx	3,000	(56)	(32)	(12)
Brooklyn	5,800	55	35	10
Queens	9,500	63	31	6
Nassau	11,000	65	27	8
Westchester	9,000	71	24	5
Fairfield	4,000	71	24	5
West of Hudson	20,900	36	15	49
Bergen	5,300	46	17	37
Essex	5,700	25	13	62
Union	2,800	20	18	62
Outside Metropolitan Area	114,700	60	23	17

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

NOTE: Components add to less than totals because smaller counties were omitted.

Metropolitan Area. Essex County originates 34 percent of the total traffic to Newark provided by residents of the area west of the Hudson. Nassau County surprisingly accounted for 6 percent of Newark's passengers. It is quite possible that many of these people work in Manhattan, and began their trip from their office. The county distributions of La Guardia and New York International resident patronage show strong similarity.

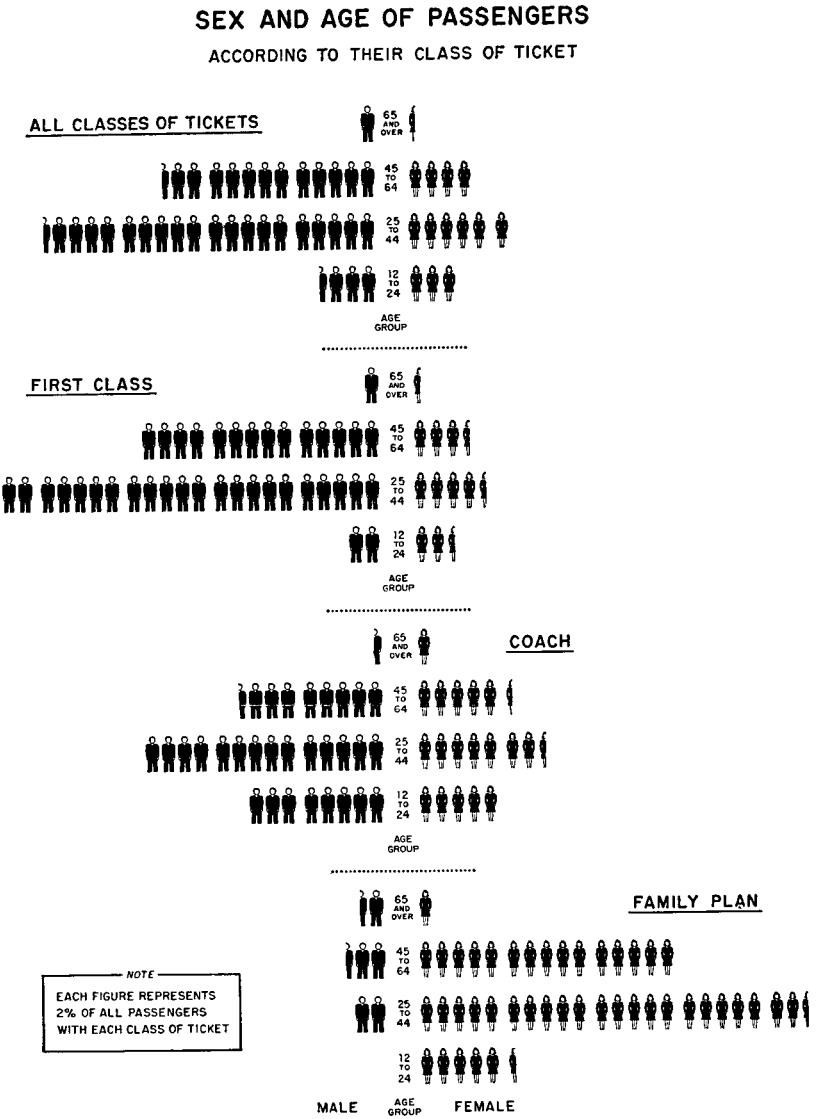
Table 11 shows how the passengers residing in the Metropolitan Area in each of the principal counties were distributed among the three airports in the New York region.

The nearness of Westchester and Fairfield Counties to La Guardia Airport shows up in their preference for that airport. Bergen County residents indicate a preference for La Guardia Airport, despite the fact that Newark is at least equally as accessible as La Guardia Airport. The greater schedule frequency out of the New York Airport may influence the choice of the Bergen County residents. The question of location cannot be expected to influence greatly the choice between La Guardia and New York International by residents of Queens and Nassau Counties. La Guardia Airport's present superiority in convenience and frequency of flight accommodations make it the heavy choice over New York International. Residents of the other counties listed in the table apportion their traffic much along geographical lines.

Characteristics of the Traveler

The preceding sections of this report discuss data concerning the destinations of the passengers, where they came from, what airports they used, how they got to the airport, and when they made their trips. This section will cover a series of tables about the passengers themselves. Data on their sex, age, occupation, industry and income will be examined to determine their relationship to the passengers' air travel.

Age and Sex, and Type of Ticket: Table 12 and Figure 11 distribute the passengers into four age groups, according to their sex and the type of ticket they purchased. Included for com-



Source: Table 12

FIGURE 11

parison is a distribution of the U. S. population, twelve years of age and over, into the same age and sex groups. Almost three-fourths of the 194,000 domestic passengers who traveled on

scheduled airlines during the survey period were men. The 25–44 group is clearly dominant, for both men and women, in all classes of tickets except the men with family plan tickets.

Male travelers accounted for 78 percent of all first-class ticket holders, reflecting the preponderance of business travel made by this group. Table 4 shows that 87 percent of all business travelers purchased first-class accommodations. The *proportion* of coach travel by women was considerably larger, although in actual *numbers,* more women traveled on first-class tickets. Relatively many more young people of both sexes traveled by coach than traveled first-class. The age distribution of coach passengers is similar to that of the U. S. population, in each category except the oldest; but the preponderance of men among coach travelers contrasts with the approximately equal distribution of sexes in

Table 12

AGE AND SEX OF PASSENGERS WITH EACH CLASS OF TICKET
(Excludes Transfer Passengers)

		Percent of Passengers by Age				
	Sex	*Total*	*12–24*	*25–44*	*45–64*	*65 and Over*
All Classes of Tickets—	Total	100%	13%	51%	33%	3%
194,100 Passengers	Male	73	7	39	25	2
	Female	27	6	12	8	1
First Class Tickets—	Total	100%	9	53	35	3
144,600 Passengers	Male	78	4	44	28	2
	Female	22	5	9	7	1
Coach Tickets—	Total	100%	26	43	28	3
44,000 Passengers	Male	62	16	28	17	1
	Female	38	10	15	11	2
Family Plan Tickets—	Total	100%	11	49	35	5
5,500 Passengers	Male	12	0	4	5	3
	Female	88	11	45	30	2
Comparative Data for the U.S., July 1, 1954[1]						
U.S. Population	Total	100%	24	38	27	11
12 Years of Age	Male	49	12	19	13	5
and over—	Female	51	12	19	14	6
123,105,000 Persons						

[1] Computed from U. S. Bureau of the Census, Current Population Reports, Series P–25, No. 101, August 9, 1954, Table 1.

the population as a whole. The extremely high percentage of women who use the family plan results from the terms under which such tickets are sold.

Frequency of Travel: Table 13 gives a frequency distribution of the number of trips that respondents indicated they had made during the last twelve months. Passengers were requested to "count round trips as two" trips. It is quite apparent that most of the trips reported were made by a very small percentage of the

Table 13

NUMBER OF TRIPS MADE IN LAST TWELVE MONTHS
(Counting Round Trips as Two and Including Trip Sampled)
(Excludes Transfer Passengers)

Number of Trips per Passenger	*Number of Passengers*	*Percent of Passengers*	*Total Number of Trips*	*Percent of all Trips*
1	19,200	10%	19,200	1%
2–9	87,900	45	369,600	10
10–19	29,700	15	431,300	11
20–29	19,400	10	484,500	13
30–39	9,500	5	335,800	9
40–49	6,000	3	260,100	7
50–59	7,600	4	404,700	11
60–79	5,600	3	390,400	10
80–99	2,000	1	166,600	4
100–149	5,100	3	532,300	14
150 and over	2,100	1	376,600	10
Total	194,100	100%	3,771,100	100%

travelers. Passengers making 150 trips or more in the twelve months preceding the survey accounted for 10 percent of all trips reported, while the group itself amounted to only 1 percent of all the passengers. Similarly, 12 percent of all the passengers accounted for half (49 percent) of all the trips reported taken during the last twelve months. The passengers in this group averaged fifty or more trips per year.

Caution must be exercised in interpreting data on the number of trips made by passengers. The qualifications attached to the data are discussed in Appendix IV. While these considerations

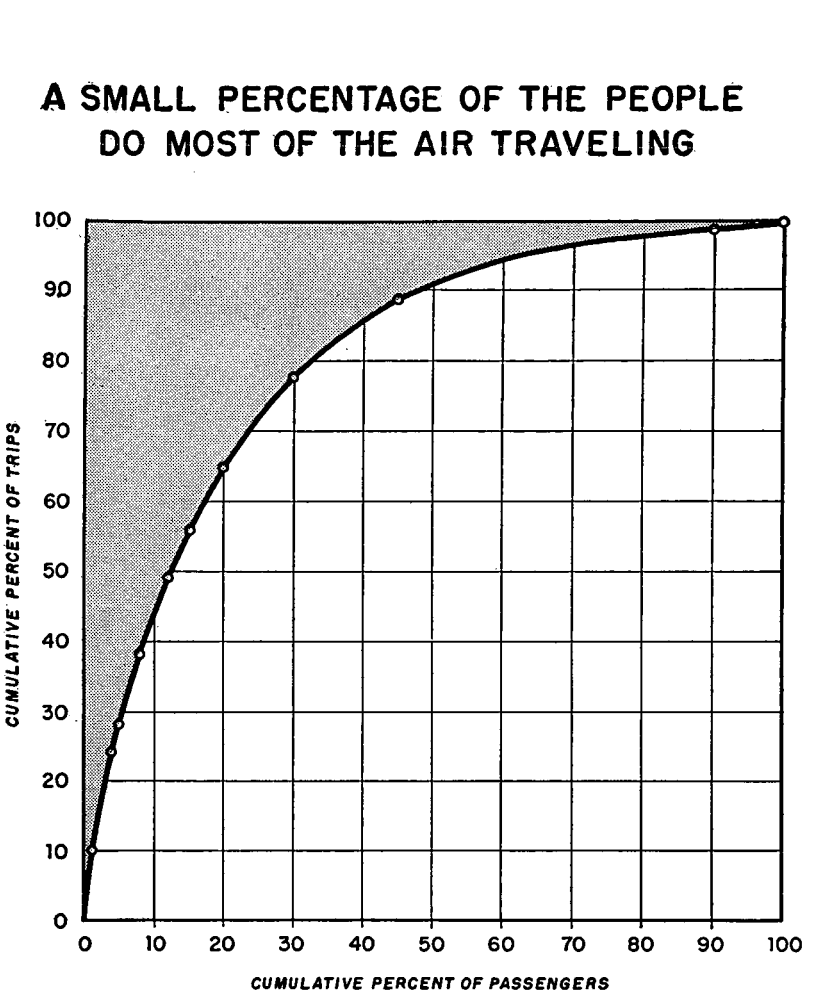


FIGURE 12

limit the usefulness of data on absolute numbers of trips, they do not detract from cumulative comparisons of numbers of trips and persons, such as the following:

1% of all passengers took	10% of all air trips in a year
5%	28%
15%	56%
30%	78%
45%	89%
90%	99%

Income: Income is so much the "symbol of success," and at the same time the object of taxation, that it is extremely difficult to know whether people are reporting it accurately. The in-flight survey questionnaire was purposely designed as a folder so that answers would be concealed, and since the questionnaire was anonymous, as great an inducement to honesty as possible was provided. In addition to deliberate misstatement, there is also the real possibility that many people do not know their family income. This may especially be true of wives and children. There is no alternative but to accept the responses made.

Table 14 and Figure 13 separate air passengers into five income groups and the three types of tickets purchased by these groups. It is quite clear that the ratio of first-class accommodations purchased is higher as the family income of the passengers is higher. Fifty percent of all the respondents to the survey reported a family income of $10,000 or more per year. More than 80 percent of these people bought first-class tickets. The lower income groups show a marked tendency to travel on coach flights. More than 40 percent of the passengers whose reported family incomes were under $6,000 purchased tourist tickets.

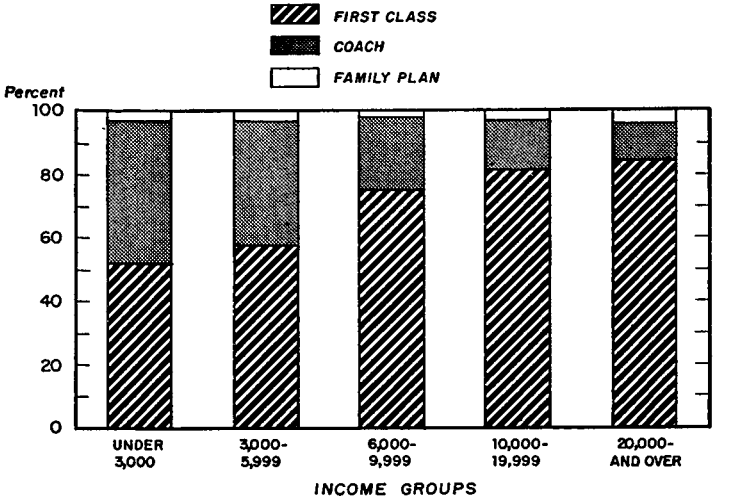
Table 14

FAMILY INCOME OF PASSENGERS BY CLASS OF TICKET
(Excludes Transfer Passengers)

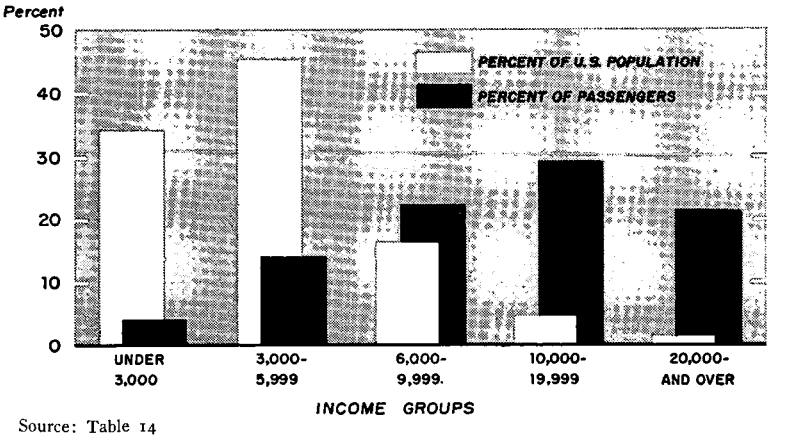
Family Income	*Percent of Passengers*	*Number of Passengers*	*Percent of Passengers by Class of Ticket*			*Percent of Persons in U. S. Population 1952*[1]
			First Class	*Coach*	*Family Plan*	
Total	100%	194,100	74%	23%	3%	100%
Under $3,000	4	7,700	52	45	3	34
$3,000–$5,999	14	27,900	57	40	3	45
$6,000–$9,999	22	43,300	75	23	2	16
$10,000–$19,999	29	55,800	81	16	3	4
$20,000 and Over	21	40,300	84	12	4	1
Unknown Income	10	19,100	68	28	4	—

[1] Adapted from Bureau of the Census, Current Population Reports, Series P-60, No. 15, April 27, 1954, Table 3. Adjusted as described in Appendix II.

INCOME OF PASSENGERS AND CLASS OF TICKET



INCOME OF PASSENGERS AND INCOME OF POPULATION



Source: Table 14

FIGURE 13

The difference between family incomes reported on the survey and for the United States as a whole is striking. The half of the passengers reporting family incomes over $10,000 contrasts with 5 percent of the population generally. About four-fifths of

the population have incomes below $6,000, while only 18 percent of the respondents reported incomes in these groups. As income data are generally reported either as the number of families with a given family income or as the number of persons with a given personal income, the data in Table 14 had to be adapted from U. S. Census data in the manner described in Appendix II.

Table 15 presents passengers in the various family income brackets, and the frequency of their travel. The average number of trips made in the last twelve months is far greater for passengers with higher family incomes. This ranges from the low average of four trips per year for those whose family income is under $3,000 to a high of about thirty-six trips per year for those with family incomes in excess of $20,000 per year.

These averages cannot be interpreted as relating to air travel by the population generally, because persons who made no trips had no possibility of being surveyed. The average is therefore the number of trips for those making one or more trips. The overstatement discussed in Appendix IV also applies here. The passengers in the two highest income categories accounted for 50 percent of all the passengers during the survey period, showing the highest rate of purchase of first-class tickets, and the highest average number of trips per year.

Table 15

NUMBER OF TRIPS PER YEAR FOR PASSENGERS IN EACH INCOME GROUP
(Excludes Transfer Passengers)

Family Income	*Number of Passengers*	*Average Number of Trips in Last 12 Months*
Total	194,100	19.4
Under $3,000	7,700	3.9
$3,000–$5,999	27,900	6.6
$6,000–$9,999	43,300	14.8
$10,000–$19,999	55,800	22.8
$20,000 and Over	40,300	35.8
Unknown Income	19,100	10.0

Table 16

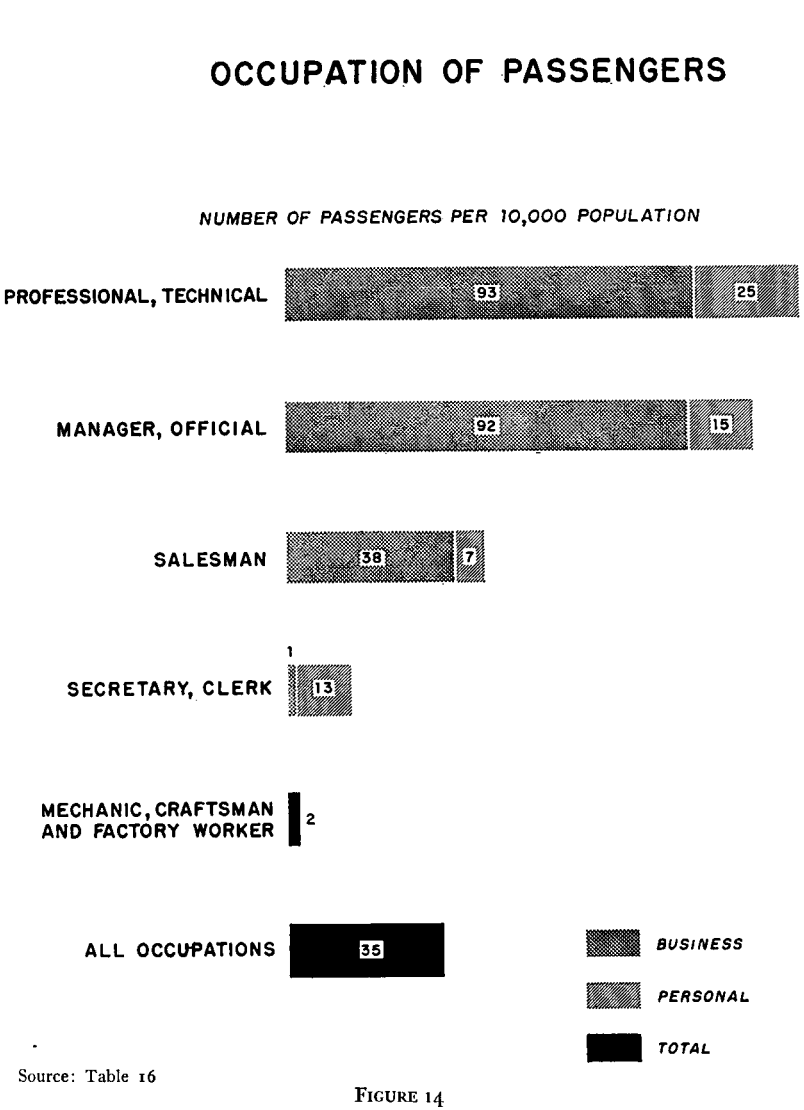
OCCUPATION OF PASSENGERS
(Excludes Transfer Passengers)

Occupation and Purpose	*Percent of Passengers*	*Number of Passengers*	*U. S. Working Population 1950 (Thousands)*	*Passengers per 10,000 Population*	*Average Number of Trips in Last 12 Months*
Total	100%	194,100	56,239	35	19.4
Professional, Technical:	30	58,000	4,910	118	21.4
Business	24	45,600		93	
Personal	6	12,400		25	
Manager, Official:	28	53,600	5,018	107	28.0
Business	24	46,000		92	
Personal	4	7,600		15	
Salesman:	9	17,700	3,927	45	36.0
Business	8	14,800		38	
Personal	1	2,900		7	
Secretary, Clerk:	5	9,700	6,895	14	5.6
Business	1	1,000		1	
Personal	4	8,700		13	
Mechanic, Craftsman and Factory Worker	2	4,500	18,923	2	5.8
Other and Unknown Occupation	3	6,200	16,253	4	13.1
Housewife	12	23,700			4.4
Student	5	9,700			4.4
Armed Forces	5	8,700			8.4
Retired	1	2,300			(7.0)

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

NOTE: Breakdown into business and personal made only for more populous occupation categories.

Occupation: Table 16 and Figure 14 relate the occupation of passengers to the average number of trips made during the twelve months preceding the survey period. In addition, the number of passengers making business and personal trips is shown for the larger occupation groups. The largest group, "Professional-Technical" accounted for 30 percent of the total number of passen-



Source: Table 16

FIGURE 14

gers, and 80 percent of this group indicated they were on a business trip. The "Manager-Official" category was almost the same size; 85 percent of the people in this group stated they were traveling on business.

The "Salesmen" category, though a low third in rank, rep-

resenting about 9 percent of the total traffic, showed the highest average number of trips (36) during the twelve-month period. About 90 percent of the salesmen in the survey were on business trips. The "Secretary-Clerk" group accounted for a fair share (5 percent) of all the passengers. The average number of trips per year taken by this group, about six, is low when compared with other groups already mentioned. As shown, only one out of five trips made by secretaries and clerks is for business.

Housewives account for a large portion (12 percent) of the total travel of all occupation groups. The trips made by these women were almost entirely for personal reasons.

Table 16 also relates the number of passengers in each occupation with the importance of the occupation in the population generally, through use of a ratio of passengers, separately for those on business and personal trips, per 10,000 population. In this measure, secretaries and clerks are seen to rank high in personal travel. The manager-officials, who take about eight times as many trips as the secretary-clerks per unit of 10,000 population, take only slightly more personal trips (15) relative to their population than the thirteen trips reported by the secretary-clerk group. Mechanics, craftsmen and factory workers, as a group, took only two trips per 10,000 population for business or personal reasons combined.

Characteristics of the Resident Travel Market

Purpose of Trip: Table 17 shows that among passengers living in the Metropolitan Area, 67 percent were leaving the area on business trips. Among non-residents the proportion was smaller, but this is not necessarily an indication that New Yorkers do more business traveling in general, because the survey does not cover all trips of non-residents, just those from New York.

There is a considerable difference among regions in the purpose of their residents' travel from New York, varying from 64 percent of business travel for residents of the East North Central region to 34 percent for Canadians.

Just as the residents of various sections of the country differ

Table 17

RESIDENCE OF PASSENGERS BY PURPOSE OF TRIP
(Excludes Transfer Passengers)

Residence	*Percent of Passengers*	*Number of Passengers*	*Percent of Passengers by Purpose*	
			Business	*Personal*
Total	100%	194,100	61%	39%
N.Y.-N.J. Metropolitan Area	41	79,400	67	33
Outside Metropolitan Area	59	114,700	57	43
New England	9	16,900	59	41
Middle Atlantic	7	13,800	53	47
South Atlantic	8	16,800	57	43
East North Central	16	31,000	64	36
East South Central	2	3,600	(56)	(44)
West North Central	3	5,700	52	48
West South Central	3	5,900	54	46
Mountain	1	2,200	*	*
Pacific	4	7,100	51	49
Canada	3	5,700	34	66
All Other	3	6,000	49	51

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

* Based on too few cases to merit publication.

in the reported purposes of their travel, so do the residents of the several counties within the New York/New Jersey Metropolitan Area. Table 18 shows the number of passengers residing in each county in the Metropolitan Area as well as the ratio of business to personal travel for passengers who live in the larger counties. The preponderance of business travel is especially manifest for passengers resident in Nassau, Westchester and Bergen Counties.

Table 19 compares traffic and population in each of the counties. Outstanding is the fact that the share of the traffic provided by Nassau, Westchester and Bergen markets in the Metropolitan Area is much greater than their share of the local population. The table also shows, however, that if one excludes business traffic from the measure, the share provided by these counties is considerably smaller. But as their percents of personal trips are no

Table 18

RESIDENCE OF PASSENGERS LIVING IN METROPOLITAN AREA
BY PURPOSE OF TRIP
(Excludes Transfer Passengers)

Residence	*Percent of Passengers*	*Number of Passengers*	*Percent of Passengers by Purpose*	
			Business	*Personal*
Metropolitan Area	100%	79,400	67%	33%
East of Hudson	74	58,500	66	34
Manhattan	19	14,600	62	38
Bronx	4	3,000	(45)	(55)
Brooklyn	7	5,800	52	48
Queens	12	9,500	59	41
Nassau	14	11,000	79	21
Suffolk	2	1,600	*	*
Westchester	11	9,000	77	23
Putnam	0	0	*	*
Fairfield	5	4,000	(72)	(28)
West of Hudson	26	20,900	68	32
Bergen	7	5,300	82	18
Hudson	1	800	*	*
Passaic	1	1,100	*	*
Morris	2	1,900	*	*
Essex	7	5,700	61	39
Somerset	1	400	*	*
Middlesex	1	500	*	*
Union	3	2,800	(64)	(36)
Monmouth	1	1,100	*	*
Orange	1	400	*	*
Rockland	0	300	*	*
Richmond	1	600	*	*

* Based on too few cases to merit publication.

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

smaller than their share of the population, it is clear that these counties have a high amount of business travel rather than a small amount of personal travel.

This table gives the percentage ratio of the number of travelers residing in each of the counties to the total number of resident passengers in the Metropolitan Area. Similar distributions are shown for all passengers on business trips and all passengers on

Table 19

RESIDENCE OF PASSENGERS LIVING IN METROPOLITAN AREA
(Excludes Transfer Passengers)

Residence	*Number of Passengers*	*Population 1954*	*Percent of Passengers by Purpose*			*Percent of Population*
			All Purposes	*Business*	*Personal*	
Metropolitan Area	79,400	14,910,000	100%	100%	100%	100%
East of Hudson	58,500	10,515,000	74	73	74	71
Manhattan	14,600	1,961,000	19	17	21	13
Bronx	3,000	1,510,000	4	3	6	10
Brooklyn	5,800	2,738,000	7	5	10	18
Queens	9,500	1,693,000	12	11	14	11
Nassau	11,000	967,000	14	17	9	7
Suffolk	1,600	380,000	2	2	2	3
Westchester	9,000	683,000	11	13	8	5
Putnam	0	22,000	0	0	0	0
Fairfield	4,000	561,000	5	5	4	4
West of Hudson	20,900	4,395,000	26	27	26	29
Bergen	5,300	641,000	7	8	4	4
Hudson	800	643,000	1	1	2	4
Passaic	1,100	362,000	1	1	2	3
Morris	1,900	196,000	2	3	2	1
Essex	5,700	947,000	7	7	9	6
Somerset	400	116,000	1	1	0	1
Middlesex	500	317,000	1	1	0	2
Union	2,800	165,000	3	3	4	1
Monmouth	1,100	262,000	1	1	1	2
Orange	400	443,000	1	0	1	3
Rockland	300	98,000	0	0	0	1
Richmond	600	205,000	1	1	1	1

Population data from Regional Plan Association:
Population, 1954–1975 in The New Jersey-New York-Connecticut Metropolitan Region, RPA Bulletin No. 85, November, 1954, Table V.

personal trips. If, in the case of Nassau, Westchester, and Bergen Counties, the comparison is limited to personal travel, these counties correspond more closely to the rest of the area. Westchester and Nassau Counties provided a rather sizeable share of

the personal passengers as compared with their population, although not nearly to the same degree as their contribution to total business travel.

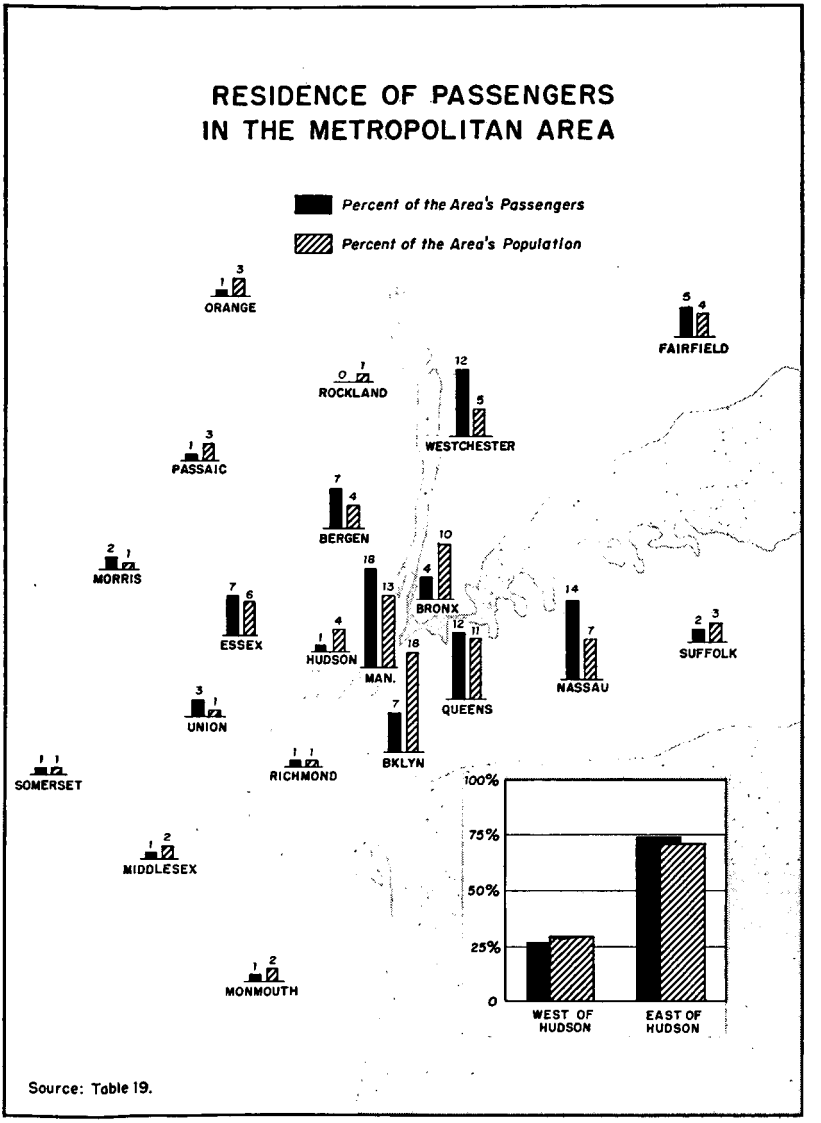


FIGURE 15

Although the ratio of business to personal travel by Manhattan residents was lower than the average for the Metropolitan Area, a larger share of the Manhattan residents traveled than reported for the general local population. Brooklyn, the largest in population, with 18 percent of the area's total, had only 7 percent of the passengers. Its share of the business passengers was even lower, 5 percent, while its share of the personal passengers was 10 percent.

The Income Factor: An obvious explanation for differences in volume of air travel among residents of the various counties is the difference in the distribution of incomes among the counties. Because air travel is so highly correlated with income, a moderate difference in family incomes results in substantial differences in air travel frequency. The question remains, however, whether the income patterns of residents of each county fully explain the observed differences in travel volumes, or whether there are other important basic factors that influence travel differently among the various counties.

Tables 20 and 21 were prepared in an attempt to identify such "other" factors. Their purpose is to isolate the income factor, so that differences remaining among the counties become apparent. To this end, separate data for the population, number of passengers and number of trips, as well as ratios of passengers and trips per unit of population, are shown for each income bracket and for each county. Comparison within a single income bracket then becomes possible among counties; income "is held constant."

There are two major limitations to the success of Tables 20 and 21 in abstracting the influence of income. One is the necessarily crude nature of the adjustment in Census data (described in Appendix II) to produce estimates of the number of persons in each category of 1954 family income. The other is the broadness of the "$10,000 and over" income category. It was seen in Tables 14 and 15 that people whose family incomes were $10,000 and over accounted for 50 percent of all passengers, and that the average trips made were considerably different for those in the $10,000–$19,999 group from those in the over-$20,000 group.

Table 20

Passengers and Total Population in Each Income Group By Residence in Larger Counties of the Metropolitan Area

(Excludes Transfer Passengers)

Residence	All Incomes	Family Income: Under $3,000	$3,000–$5,999	$6,000–$9,999	$10,000 and Over
Total Metropolitan Area					
Passengers	79,400	2,300	11,900	20,300	44,900
Population	14,910,000	4,119,300	6,325,700	3,082,300	1,382,700
Pass. per 1,000 Pop.	5.3	.6	1.9	6.6	32.5
Total East of Hudson					
Passengers	58,500	2,000	9,100	13,500	33,900
Population	10,515,000	2,998,000	4,397,700	2,117,900	1,001,400
Pass. per 1,000 Pop.	5.6	.7	2.1	6.4	33.9
Manhattan					
Passengers	14,600	600	2,000	2,600	9,400
Population	1,961,000	821,700	704,000	260,800	174,500
Pass per 1,000 Pop.	7.4	.7	2.8	10.0	53.9
Bronx					
Passengers	3,000	(400)	(900)	(700)	(1,000)
Population	1,510,000	412,200	678,000	320,100	99,700
Pass. per 1,000 Pop.	2.0	(1.0)	(1.3)	(2.2)	(10.0)
Brooklyn					
Passengers	5,800	400	1,900	1,500	1,900
Population	2,738,000	813,200	1,202,000	539,400	183,400
Pass. per 1,000 Pop.	2.1	.5	1.6	2.8	10.4
Queens					
Passengers	9,500	400	1,900	3,000	4,200
Population	1,693,000	338,600	755,100	424,900	174,400
Pass. per 1,000 Pop.	5.6	1.2	2.5	7.1	24.1
Nassau					
Passengers	11,000	0	900	2,800	7,300
Population	967,000	174,100	394,500	240,800	157,600
Pass. per 1,000 Pop.	11.4	.3	2.3	11.4	46.5
Westchester					
Passengers	9,000	200	700	1,500	6,600
Population	683,000	159,800	253,400	146,200	123,600
Pass. per 1,000 Pop.	13.2	1.0	2.8	10.4	53.8
Fairfield					
Passengers	4,000	(0)	(300)	(1,100)	(2,600)
Population	561,000	156,000	236,700	110,000	58,300
Pass. per 1,000 Pop.	7.1	(0)	(1.3)	(10.0)	(44.3)
Total West of Hudson					
Passengers	20,900	300	2,800	6,800	11,000
Population	4,395,000	1,121,200	1,928,100	964,400	381,300
Pass. per 1,000 Pop.	4.8	.3	1.5	7.0	28.9
Bergen					
Passengers	5,300	0	700	1,600	3,000
Population	641,000	116,600	279,500	165,400	79,500
Pass. per 1,000 Pop.	8.2	.4	2.3	9.4	38.0
Essex					
Passengers	5,700	0	700	1,800	3,200
Population	947,000	251,900	399,600	199,800	95,700
Pass. per 1,000 Pop.	6.1	.2	1.6	9.2	33.4
Union					
Passengers	(2,800)	(0)	(500)	(1,000)	(1,300)
Population	443,000	85,500	190,900	114,800	51,800
Pass. per 1,000 Pop.	(6.3)	(.4)	(2.2)	(8.7)	(25.2)

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

Notes: Income refers to number of persons with designated family income.
See Appendix II for source of income data for population.

But as Census data show only a single group over-$10,000, no distinction is possible above this figure. These limitations restrain the conclusions to be drawn from the tables and preclude significance in small differences in the figures shown. There is good reason to believe, however, that *substantial* differences in the tables are due to *real* differences among the counties which income alone does not explain.

Table 20 shows the number of resident passengers and total population in each income group for the Metropolitan Area and for each of the larger counties, as well as the ratio of passengers to each unit of 1,000 population. The data in the "all incomes" column of this table strengthen the idea that counties having more high-income families provide a greater portion of the travel market from the Metropolitan Area. Nassau, Westchester and Bergen counties each has a population of which about 40 percent have family incomes of $6,000 or more per year. Each of these counties has well over the average number of passengers for each unit of 1,000 population.

Bergen County, the lowest of the three, has one and a half times the average for the area as a whole. These results confirm the indications of Table 18 and 19 that Nassau, Westchester and Bergen Counties produce a high degree of business travel. Examination of some of the income groups reveals some differences in the amount of travel made by people residing in different counties who have the same family income. Manhattan, Nassau and Westchester counties have the highest number of passengers for each unit of 1,000 population in the $10,000-per-year-and-over family income group, for which Table 15 shows that the highest frequency of travel takes place. This is also reflected in the number of trips made in the last twelve months, relative to the population in the top income group, shown in Table 21.

The values for these three counties are a high of about 54 passengers and 1,400 trips per unit of 1,000 population in Westchester, 47 passengers and 1,300 trips recorded in Nassau County, while Bergen County is fairly high, with 38 passengers and 1,050 trips for each 1,000 persons in the group earning $10,000 or more per year. Except for Essex County, which was about average, the

Table 21

Number of Trips Made in Last 12 Months by Passengers and Total Population in Each Income Group For Larger Counties of the Metropolitan Area

(Excludes Transfer Passengers)

		Family Income			
	All Incomes	*Under $3,000*	*$3,000–$5,999*	*$6,000–$9,999*	*$10,000 and Over*
Total Metropolitan Area					
Trips	1,623,900	10,000	74,500	328,000	1,211,400
Population	14,910,000	4,119,300	6,325,700	3,082,300	1,382,700
Trips per 1,000 Pop.	108.9	2.4	11.8	106.4	876.1
Total East of Hudson					
Trips	1,224,700	7,300	61,100	231,200	925,100
Population	10,515,000	2,998,000	4,397,700	2,117,900	1,001,400
Trips per 1,000 Pass.	116.5	2.4	13.9	109.2	923.8
Manhattan					
Trips	328,400	2,900	13,200	56,500	255,800
Population	1,961,000	821,700	704,000	260,800	174,500
Trips per 1,000 Pop.	167.5	3.5	18.8	216.6	1,465.9
Bronx					
Trips	(26,600)	(1,200)	(3,100)	(4,400)	(17,900)
Population	1,510,000	412,200	678,000	320,100	99,700
Trips per 1,000 Pop.	(17.6)	(2.9)	(4.6)	(13.7)	(179.5)
Brooklyn					
Trips	73,600	1,500	8,400	16,600	47,100
Population	2,739,000	813,200	1,203,000	539,400	183,400
Trips per 1,000 Pop.	26.9	1.8	7.0	30.8	256.8
Queens					
Trips	177,200	400	9,100	44,400	123,300
Population	1,693,000	338,600	755,100	424,900	174,400
Trips per 1,000 Pop.	104.7	1.2	12.1	104.5	707.0
Nassau					
Trips	266,000	100	16,900	46,700	202,300
Population	967,000	174,100	394,500	240,800	157,600
Trips per 1,000 Pop.	275.1	.7	42.8	194.1	1,283.5
Westchester					
Trips	202,100	339	5,281	27,520	168,980
Population	683,000	159,800	253,400	146,200	123,600
Trips per 1,000 Pop.	295.9	2.1	20.8	188.2	1,367.2
Fairfield					
Trips	121,900	(0)	(1,800)	(25,500)	(94,600)
Population	561,000	156,000	236,700	110,000	58,300
Trips per 1,000 Pop.	217.2	(0)	(7.4)	(231.9)	(1,622.3)
Total West of Hudson					
Trips	399,300	2,700	13,400	97,100	286,100
Population	4,395,000	1,121,200	1,928,100	964,400	381,300
Trips per 1,000 Pop.	90.8	2.4	6.9	100.7	750.4
Bergen					
Trips	116,100	200	2,100	29,900	83,900
Population	641,000	116,600	279,500	165,400	79,500
Trips per 1,000 Pop.	181.2	1.8	7.7	180.9	1,054.7
Essex					
Trips	111,700	200	3,400	24,000	84,100
Population	947,000	251,900	399,600	199,800	95,700
Trips per 1,000 Pop.	117.9	.8	8.4	120.0	879.0
Union					
Trips	(50,000)	(100)	(2,300)	(18,000)	(29,600)
Population	443,000	85,500	190,900	114,800	51,800
Trips per 1,000 Pop.	(113.0)	(1.4)	(12.0)	(157.1)	(571.9)

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

Notes: Income refers to number of persons with designated family income.
See Appendix II for source of income data for population.

remaining counties are all below the average for the Metropolitan Area with respect to proportion of people with family incomes of $10,000 or more. Manhattan, with the highest number of resident passengers and trips per 1,000 population in the over-$10,000 group, differs from Westchester and Nassau Counties in that business travel as a proportion to total travel of residents was below the average for the area.

In summary, it is evident that among people whose family incomes are over $10,000 there is a substantial variation from county to county in amount of air travel. This may be due to differences not disclosed by the Census in average incomes above $10,000, or to a faulty adjustment of the population data; but more likely it points to a real difference among travel characteristics among counties. This difference noted in the high incomes is also evident in the income groups below $10,000. Whether number of passengers per 1,000 population, or number of trips in the last twelve months per 1,000 population is used as an index of inter-county differences, the range in frequency of travel is substantial. In the $6,000–$9,999 income bracket, passengers varied from 2.2 per 1,000 population in the Bronx to 11.4 in Nassau. In trips per 1,000 population for this income group, the range was 13.7 for the Bronx to 231.9 for Fairfield.

Similar differences can be found among other income groups, pointing to the conclusion that income differences alone do not explain the very different air travel frequencies among the counties. Nor do accessibility to airports or the adequacy of schedules at the nearer airport appear to account for the differences. At each income level Brooklynites appear to do little air traveling, although that borough is conveniently located to all airports, especially the two airports having the wider range of schedules.

On the other hand, Bergen County, with much less convenient access to the airports than Brooklyn, is at most income levels above the Metropolitan Area average in the frequency of its residents' travel. There are evidently subtler forces at work that account for these differences, perhaps related to social status or national origin, which have not been measured here. Bare income statistics do not, of course, reveal how families with the

Table 22

FAMILY INCOME AND NUMBER OF TRIPS IN LAST TWELVE MONTHS
FOR RESIDENTS AND NON-RESIDENTS OF THE METROPOLITAN AREA
(Excludes Transfer Passengers)

	Passengers and Trips, All Incomes	*Percent of Passengers and Trips by Family Income*					
		Under $3,000	*$3,000–$5,999*	*$6,000–$9,999*	*$10,000–$19,999*	*$20,000 and Over*	*Unknown Income*
Total Passengers	194,100	4%	14%	22%	29%	21%	10%
Number of Trips	3,771,000	1	5	17	33	39	5
Average Number of Trips	19	4	7	15	23	36	10
Residents	79,400	3	14	23	30	22	8
Number of Trips	1,623,900	1	4	19	37	34	5
Average Number of Trips	20	4	6	17	25	32	13
Non-Residents	114,700	5	14	22	27	21	11
Number of Trips	2,147,100	1	5	15	31	43	5
Average Number of Trips	19	4	7	13	21	39	8

same income may spend their money very differently. Certainly it is reasonable to surmise that there is a fundamental difference in spending behavior between a suburban family whose head is a business executive earning $12,000 per year, and a city family with two or three blue-collar earners whose combined income is $12,000 per year. Different parts of the Metropolitan Area have different proportions of these two types of families, and the many types in between.

Table 22 deals with the family income and the number of trips made in the last twelve months by residents and non-residents of the Metropolitan Area and includes the average number of trips for each income group. Half of all the domestic scheduled passengers were in the $10,000-and-over income group, and they accounted for 72 percent of the total number of trips made during the last year. An examination of the residents and non-residents shows a similar distribution of the passengers and trips made in each of the income groups. Residents in all income groups combined averaged about the same number of trips (20) per year as did non-residents who averaged 19 trips per year.

What Industries Generate Business Air Travel?

For the 60 percent of passengers traveling for business, the characteristics of their firms are as significant as the characteristics of the traveler. The freedom of choice of the business traveler is considerably reduced as to the decision on when he will travel, where he will go, the means of transportation he will use, his type of ticket, and in fact, whether the trip will be made. Some business travelers may have a good deal to say about these particulars of their trips, while others may be sent on trips by their superiors with all details taken care of by different persons.

There might be a maximum of flexibility in the case of an independent professional man, who has the choice of accepting or rejecting a commission in another city. Economic necessity may curb even his freedom as to whether or not to travel. In other cases, the decision that the businessman will make a trip is determined by someone other than the traveler, but the choice

of the particular time and means of transportation may be left to the traveler.

In the United States: Table 23 and Figure 16 show that the industrial composition of business travelers leaving New York is dominated by manufacturing. Thirty-nine percent of the business travelers were in manufacturing, while in the working population as a whole, manufacturing accounts for 26 percent of the people. While the wholesale-retail segment of industry is well represented with 15 percent of the travelers, this is less than the 19 percent in the working population generally. No other industry group accounts for as much as 10 percent of the business travelers.

Although it is an insignificant part of the total air travel represented by the survey, the entertainment industry accounted for the highest number of business travelers compared to the number of persons in that industry throughout the country. Finance, insurance, and real estate contributed a large number of travelers in relation to the working population in this industry.

It is not possible to know whether the difference among industries in their air travel per 10,000 population is due to the extent of travel generally by persons in the industries, or whether it is due to the fact that the New York area specializes in some industrial functions. The high levels for entertainment and for finance indicate that for these industries, at least, it probably is New York's specialization that accounts for the high proportion of travel of persons within these industries.

Among passengers in each industry who were traveling during the survey period, there was a considerable variation in the average number of trips made in the last twelve months. These averages were computed for all passengers who reported an industry, whether they were on a business trip or a personal trip, since the number of trips in the past year as reported covered all purposes. The highest average is seen to be the fifty-seven trips for persons in the construction industry. As this industry did not have many passengers in comparison with its national population, it appears that not many people in the construction industry

Table 23

NUMBER OF PASSENGERS IN EACH INDUSTRY CATEGORY MAKING A BUSINESS TRIP
AVERAGE NUMBER OF TRIPS IN LAST 12 MONTHS FOR ALL PASSENGERS IDENTIFIED WITH INDUSTRY
(Excludes Transfer Passengers)

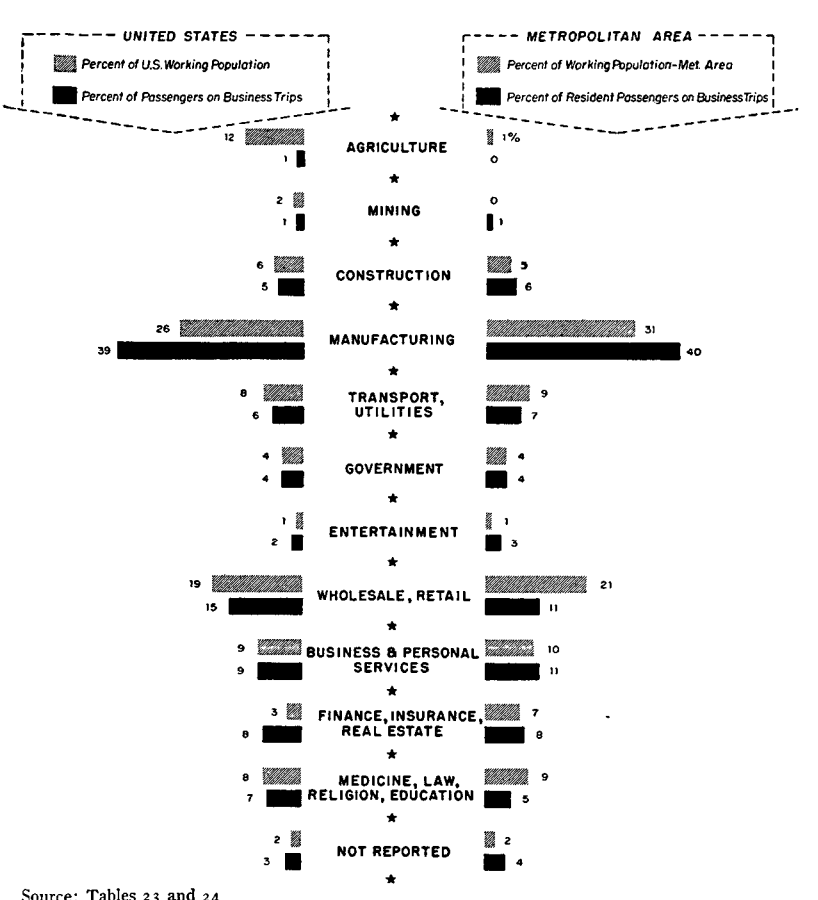
Industry	*Total U. S. Working Population 1950*		*Passengers on Business Trips*[1]		*Business Passengers per*[1] *10,000 Population*	*Average Trips of All Passengers in Last 12 Months*
	Number	*Percent*	*Number*	*Percent*		
All Industries	56,225,300	100%	111,600	100%	20	20
Agriculture	6,996,200	12	900	1	1	*
Mining	929,500	2	1,300	1	14	*
Construction	3,440,700	6	5,400	5	16	57
Manufacturing	14,570,800	26	43,100	39	30	28
Transport, Utilities	4,368,900	8	6,700	6	15	22
Government	2,488,800	4	4,400	4	18	(13)
Entertainment	552,700	1	2,800	2	51	(26)
Wholesale-Retail	10,550,000	19	16,700	15	16	19
Business and Personal Services	4,900,500	9	10,100	9	21	21
Finance, Insurance, Real Estate	1,915,100	3	8,500	8	44	16
Medicine, Law, Religion, Education	4,671,200	8	8,200	7	18	14
Not Reported	840,900	2	3,500	3		

[1] Excludes persons without an industry (e.g., housewives, students, retired people) who made trips they reported as business trips.

* Based on too few cases to merit publication.

( ) Measure is probably accurate, but based on too few cases to assure that it is within the prescribed range of reliability.

travel to New York, but those who travel at all travel a great deal. This conforms to the general impression that it is an industry with many local workers and a relatively few highly mobile engi-



Source: Tables 23 and 24

FIGURE 16

neers. People in finance, on the other hand, individually make fewer trips per year than the average traveler, although we have seen that the number of passengers during the survey period was high in relation to their national numbers.

In the New York-New Jersey Metropolitan Area: Table 24 relates the industry of passengers residing in the Metropolitan Area to the local population in each industry. Therefore it describes the industry of passengers whose business takes them out of the area. It is not surprising, consequently, that wholesale and retail trade has one of the lowest ratios, as this industry probably attracts out-of-towners rather than sending out local residents. The high value for mining is reasonable; headquarters personnel of mining companies would inevitably travel to their operating locations.

Table 24

BUSINESS PASSENGERS RESIDING IN METROPOLITAN AREA COMPARED WITH WORKING POPULATION, FOR EACH INDUSTRY
(Excludes Transfer Passengers)

	Working Population, Metropolitan Area 1950		*Resident Business Passengers*[1] *with Industry*		*Business Passengers per 10,000 Population*
	Number	*Percent*	*Number*	*Percent*	
All Industries	5,670,000	100%	50,900	100%	90
Agriculture	48,300	1	200	0	41
Mining	4,300	0	400	1	930
Construction	303,300	5	3,200	6	106
Manufacturing	1,745,600	31	20,200	40	116
Transport, Utilities	514,700	9	3,800	7	74
Government	251,700	4	1,800	4	72
Entertainment	74,200	1	1,600	3	216
Wholesale-Retail	1,192,800	21	5,700	11	48
Business and Personal Services	561,300	10	5,400	11	96
Finance, Insurance, Real Estate	374,400	7	4,100	8	110
Medicine, Law, Religion, Education	511,100	9	2,700	5	53
Not Reported	88,300	2	1,800	4	204

[1] Excludes persons without an industry (e.g., housewives, students, retired people) who made trips they reported as business trips.

Transfer Passengers

In addition to the questionnaires representing passengers who originated their trip at La Guardia, New York International, or

Newark Airports, there were 1,282 questionnaires representing some 44,000 transfer passengers. As previously stated, a transfer passenger is one whose air trip originated at some point outside the New York Area and who changed planes in New York to continue to his ultimate destination. Some of these passengers shuttled from one airport to another; others changed planes at the same airport. Passengers who stayed on a through-flight were not given questionnaires, and are not represented in the survey. Tables 25 and 26, which deal with transfer passengers, are confined solely to the origin and destination of the trips made by them.

Table 25

DESTINATION OF TRANSFER PASSENGERS FOR REGIONS AND PRINCIPAL CITIES

Destinations	*Percent of Passengers*	*Number of Passengers*
All Destinations	100%	44,100
New England	35	15,500
Boston	16	7,200
Hartford-Springfield	7	3,000
Providence	7	2,900
Middle Atlantic	17	7,400
Philadelphia	8	3,600
Albany, Troy, Schenectady	3	1,200
Pittsburgh	2	1,000
South Atlantic	15	6,400
Washington	5	2,400
East North Central	14	6,100
Chicago	5	2,100
East South Central	2	900
West North Central	2	1,000
West South Central	5	2,200
Mountain	1	300
Pacific	4	2,000
San Francisco	2	1,100
Canada	4	1,800
Montreal	3	1,200
Other	1	500

Destination: Table 25 deals with the destination of the transfer passengers for the various regions of the United States. Their destinations were considerably different from those in Table 1 for originating passengers. New England, which was the destination of only 13 percent of originating passengers, is the area to which over a third of the transfer passengers were going. Most of the traffic to New England was destined for Boston, Providence, and Hartford-Springfield, with more than half of these passengers going to Boston. The Middle Atlantic states accounted for 17 percent of the total transfer traffic and almost half of this went to Philadelphia.

The other two large regions, the South Atlantic and the East North Central, each had about 15 percent of the total traffic with a third of the traffic for each region going to Washington and Chicago, respectively. The transfer traffic to remaining areas of the United States is small. Canada had a 4 percent share of the transfer passengers, and 75 percent of this traffic went to Montreal.

Origin: Table 26 concerns itself with the originating points of transfer passengers for the various regions and for some of the country's principal cities. It also includes those passengers who originated their trips at overseas points and are continuing their trip on domestic flights. The same regions that shared most of the traffic as destination points in Table 25 accounted for most of the traffic as points of origin in Table 26. New England, the South and Middle Atlantic states, and the East North Central states were the points of origin for two-thirds of the transfer passengers. Boston alone was the origin of 14 percent of these people. Overseas points accounted for origins of 11 percent of the total transfer passengers.

Transfer passengers whose point of origin was unknown accounted for 10 percent of all the origins. This figure is attributable more to confusion on the part of transfer passengers in responding to the question on the origin of their trip, rather than to a failure to answer the question at all.

It is clear from these tables that a major part of the transferring involves people going either to or from New England. Sixty-five

percent of the trips have either their origin or destination in New England, 30 percent in Boston alone.

Table 26

ORIGIN OF TRANSFER PASSENGERS FROM REGIONS AND PRINCIPAL CITIES

Origin	*Percent of Passengers*	*Number of Passengers*
All Origins	100%	44,100
New England	30	13,400
Boston	14	6,100
Hartford-Springfield	5	2,400
Providence	4	1,900
Middle Atlantic	11	4,900
Philadelphia	4	1,900
Albany, Troy, Schenectady	2	1,000
South Atlantic	11	4,900
Washington	3	1,200
East North Central	13	5,600
Detroit	3	1,200
Chicago	3	1,100
East South Central	2	700
West North Central	2	800
West South Central	2	700
Mountain	1	300
Pacific	4	1,800
Canada	3	1,500
Overseas	11	5,100
Trans-Atlantic	7	3,200
Caribbean	3	1,600
Unknown	10	4,400

APPENDIX I

Survey Methodology

Selecting the Sample of Flights: The decision to have a survey supervisor on hand at the airport shortly before flight time of each sample flight largely dictated the structure of the sample. The three-week survey period had to be partitioned into uniform working shifts. Forty-two shifts were defined at each airport, by having two shifts per day; one from 6 A.M. to 4 P.M., the other from 4 P.M. to 2 A.M.—a total of 126 shifts for the three airports. It was assumed that the period from 2 A.M. to 6 A.M. was insignificant, and could be disregarded without distorting survey findings.

The number of shifts to be selected from these 126 was set at 23, or enough to yield at least 5,000 questionnaires. These shifts were allocated among airports as follows: 9 at La Guardia, 7 at New York International, and 7 at Newark, to achieve the most efficient distribution of the sampling effort.

The choice of shifts at each airport was made so as to assure representation of daytime and nighttime flights, and also weekend and weekday flights. These parts of the week constituted strata from which selections were made at random, the probability of selection being proportional to estimated variability in each stratum.

The next stage of sampling was the selection of flights within each selected shift at each airport. The number of flights to be chosen for each airline was determined before the selection according to the share of airport activity accounted for by the airline. These numbers established the proportions among airlines which were used in selecting flights in all shifts, with the result that the number of flights selected for any particular airline is approximately constant from shift to shift at any airport.

To make the flight selections within a shift, a sequence of airlines was pre-listed. A starting time and starting airline were randomly selected, and the nearest flight for the first airline was selected. The next time was about forty-five minutes later (to

give the supervisor time to see the flight attendant before flight time), when the nearest flight of the second airline was chosen. If the specified airline did not have a flight within a reasonable interval of the selected time, the next airline was selected and the order interchanged for the two selections.

If a selected flight was missed in the field because of cancellations, delays of over an hour, or diversions, the same or a similar flight number was taken one or more weeks later.

Computation of Estimates in Tables of the Report: In using the sample to make estimates of the number of persons who have a certain characteristic out of the total number of passengers during the survey period, as much use as possible was made of control data. These control figures, obtained from airline operating records, were the number of passengers on flights during each period of the week, on first-class compared with coach flights, from each airport and for each airline. To illustrate the tie-in with these operating data (which are free from sampling error) the estimation of the number of passengers who reside in the Metropolitan Area is described below.

Questionnaires from flights in the sample showed that 45 percent of the passengers on the first-class flights of a particular airline departing from La Guardia Airport during a weekday evening were residents of the New York-New Jersey Metropolitan Area. As the total number of first-class passengers departing from La Guardia Airport on this airline during weekday evenings of the survey period is available from the operating records, the survey ratio can be applied to this known datum, and an estimate formed of the number of Metropolitan Area residents in this segment of the passenger population.

This estimate is therefore grounded in part on operating records and in part on the survey. An estimate is formed in a similar way for passengers of other airlines, other airports, other periods of the week, and on coach flights, and the results totaled to form an aggregate estimate of the number of Metropolitan Area residents departing from the three airports on all domestic flights of the thirteen airlines throughout the survey period.

Although this is an accurate description of the result of the method used in producing the estimates appearing in the report, a number of computational short-cuts were used which allowed combining some of these steps without any sacrifice in accuracy.

Reliability of Data: The virtue of probability sampling is that it makes possible the estimation of degree to which the sample estimates can depart from the values that would have been obtained if all passengers had been included in the survey. Because the estimates of sampling variability are based on the dispersion of observations in the sample, they are different for each datum obtained on the survey. That is, the sampling variability is much less for information which shows great uniformity among respondents, than for questions to which people tend to report a wide variety of answers. But because the computation of these individual variability estimates is a highly involved mathematical procedure, an estimate of sampling variability was computed only for place of residence. This estimate serves to illustrate the principle, and also serves as an approximation of similar estimates of variance for other measures made from the sample.

The sampling variability is not only different for each datum being measured, but it increases only fractionally as compared with the reduction in size of the subsample upon which the datum is based. In other words, the distribution of the means of ground transportation used by persons starting their trip in Manhattan is more reliable than the distribution of those starting their trip in one of the smaller counties. Figure 17 describes this relationship. Although it was computed for residence only, it can serve as an approximation for other measures as well. This graph tells, for each number of interviews on which the measure is based, the coefficient of variation associated with the measure.

For example, a datum based on the full 6,500 non-transfer passenger interviews—such as the fact that 29 percent of passengers were traveling to the East North Central states—has a coefficient of variation of 2.5 percent. This can be interpreted to mean that it is "almost" certain that the percent of all passengers traveling during the survey period who were going to this region

was between 27.5 per cent and 30.5 percent. These limits were computed by adding two coefficients of variation (5 percent) to the measure of 29 percent, and by substracting the same amount

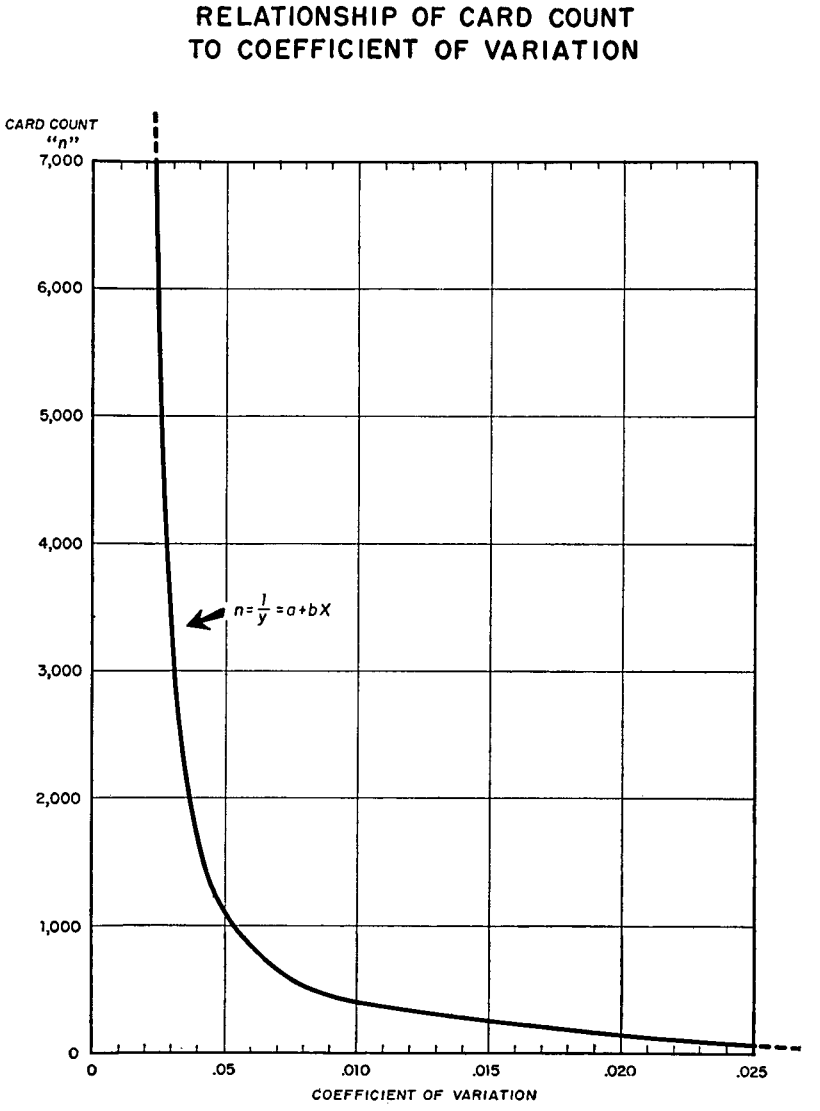


FIGURE 17

(note that the "5 percent" means 5 percent *of* 29 percent, not 5 percentage points). By using two coefficients of variation, the term "almost" used above means a confidence of 95 percent that the percent of travelers in the "universe" of 194,100 who traveled to the East North Central states was between 27.5 percent and 30.5 percent.

Assuming arbitrarily that a coefficient of variation of 20 percent was the maximum that should be allowed in the data, this chart shows that no data should be presented which constitute a breakdown of fewer than about 145 interviews. Consequently, the tables present without qualification only data based on 145 or more interviews. But because the computations of the coefficient of variation were believed to be rather conservative, the tables also show, between parentheses to designate the doubtfulness of their validity, figures which appear reasonable but are derived from only 75 through 144 interviews.

The tendency of samples to vary from the universe from which they are drawn is not the only source of possible error in the survey. Precautions were taken, however, through the use of a sizable program of checking, to keep to a minimum errors in coding the questionnaires, transcribing the codes to punched cards, tabulating and preparing tables for the text of the report.

One source of error, important in many surveys, is negligible in this survey: the error of non-response. Approximately 95 percent of all adult passengers on the selected flights completed a usable questionnaire. Consequently, even if the non-respondents differed considerably from those who completed questionnaires, their absence could not have made any appreciable distortion in the results.

APPENDIX II

Computation of Estimated 1954 Population of New York Metropolitan Area by County According to Estimated 1954 Family Income Levels

Family income was requested of each respondent to the in-flight survey. As the survey was conducted in September, 1954, the respondent probably answered in terms of his income for that calendar year. Therefore, to compare the income reported during the survey with income for the population in general, an estimate of the family income of people during 1954 was required. Inasmuch as the comparison was to be made for residents of each county of the New York-New Jersey Metropolitan Area, these estimates were needed for each county.

Data in just that form do not exist. The most nearly applicable are from the Census of Population of 1950, which reports the income of families in each county for 1949. These data do not conform to requirements in the three following respects: first, incomes changed between 1949 and 1954; second, populations have increased since 1949; and third, the number of *families* in each bracket of family income is not the same as the number of *persons* in each bracket of family income. The first two inadequacies are obvious, but the third is somewhat more subtle and merits clarification.

There is a tendency for higher-income families to be larger than lower-income families, a fact that may be due to the greater opportunity of larger families to have several earners. Therefore the likelihood of finding air passengers whose family incomes are high is greater than that of finding air passengers whose family incomes are low. The number of *families* in each bracket of family income had to be converted into the number of *persons* in each bracket of family income in order to compare the population at large with air passengers.

To convert the number of families in various family income brackets into the number of people in the same income groups, we had to assume, in the absence of more precise data, that the

characteristics of the New York Metropolitan Area, as concerns family size for each income group, conformed to those for the United States as a whole. Table 3 of the "Current Population Reports," Bureau of the Census, dated April 1954, Series P-60, Number 15, shows the distribution of families and unrelated individuals by total money income for the United States as a whole, urban and rural for 1952.

The table shows a percentage distribution by income of the total number of families in each family size up to and including all those whose family size is seven or more persons. For the purposes of computing the average family size for each income group, we used the data as presented except that for the relatively few families consisting of seven or more persons, we arbitrarily assumed that eight persons would be the average family size for that group. This yielded the average family size for the total United States for each broad income group as follows:

a) Under $3,000—2.5 persons
b) $3,000–$5,999—3.4 persons
c) $6,000–$9,999—3.6 persons
d) $10,000 and over—3.8 persons

This relationship was applied to the New York Metropolitan Area through Table 45 of the U. S. Census of Population: 1950, Volume II, *Characteristics of the Population,* Part 32, New York; Part 30, New Jersey; and Part 7, Connecticut: Chapter B. This table contains a distribution of the number of families and unrelated individuals for each county in various income groups. It was assumed that family size is a stable phenomenon over a short period, and that it is justified to use the 1952 data as though they described 1949. Multiplying the average family size for the broad income groups by the number of families in Table 45 yields a distribution of the number of people in each family income group.

The next step was the adjustment of these 1949 data to reflect 1954 incomes. Using data from the Survey of Current Business and from the Statistical Abstract of the United States for 1954, it was determined that the average income had increased about

23 percent from 1949 to 1954. The Survey of Current Business, after taking seasonal adjustments into account, indicates that in 1949 the total personal income of the United States was 209.8 billions, which increased to 286.5 billions as of September, 1954. The Statistical Abstract gives the estimated number of families in 1949 as 37,750,000, which increased to 41,900,000 in 1954. The average family income derived in these two years from the above data was $5,560 in 1949 and $6,849 in 1954, representing an increase of 23 percent.

Knowing that the average income increased by 23 percent does not readily provide a basis for computing the change in the number of people in each bracket of family income. The reasoning used to bridge this gap is speculative. If we assume that there has been no change in the relative distribution of incomes, the increase in the average would mean that everyone's income increased by 23 percent. If we assume further that people are evenly distributed within each bracket of family income, 23 percent of the people in each bracket will move into the next higher bracket.

This shift in the income level was applied to the broad income groups for each county by subtracting 23 percent of the people from each income group and adding it to the next higher income group. It is not certain that the application of this 23 percent shift to each county in the New York Metropolitan Area reflects the actual distribution of the population by income. However, on the theory that the area conforms to the United States as a whole, there is evidence in support of this shift.

The Census Bureau's Current Population Survey yields an annual measure of the distribution of incomes for the United States as a whole. Application of the procedure used for the individual counties to this nationwide distribution for 1949, yields a distribution very similar to that found in the Population Survey for 1952, the latest year for which the data are available. As incomes have risen more slowly since that year, the procedure would probably yield a good approximation to the 1954 national income distribution, as well.

After adjusting for this shift in income levels from 1949, it was

then necessary to distribute the population by county to reflect the population increases from 1949 to 1954. This was done by applying a percentage distribution of the 1949 population by county to the similar data for 1954 as contained in Bulletin No. 85 dated November 1954, of the Regional Plan Association.

APPENDIX III

Comparison of Survey Data with External Information

The following is a comparison of the distribution of destinations for the in-flight survey with data supplied by the September 17–30, 1953, Civil Aeronautics Board Origin and Destination Survey. This comparison is divided into two parts: a. for the regions of the United States and Canada, and b. for some of the principal cities to which air passengers traveled.

a. Region as a percent of total departures from New York:

Region	*C.A.B. September, 1953*	*In-flight Survey September, 1954*
All Regions	100%	100%
New England	13	13
Middle Atlantic	14	11
South Atlantic	21	20
East North Central	24	29
East South Central	3	3
West North Central	4	4
West South Central	5	5
Mountain	1	2
Pacific	8	6
Canada	7	5
Other	0	2

There is a great similarity between the two columns although the C.A.B. Survey covers traffic that took place a year earlier. As stated in the report, there is no reason to expect any radical change in the destinations of air passengers over a comparatively short period of time.

b. City as a percent of total departures from New York:

City	*C.A.B. September, 1953*	*In-flight Survey September, 1954*
1. Chicago	10.0%	11.3%
2. Boston	7.9	7.5
3. Washington, D.C.	7.1	7.2
4. Miami	5.9	4.7
5. Cleveland	3.1	4.3

Comparison of Survey Data with External Information

City	C. A. B. September, 1953	In-flight Survey September, 1954
6. Pittsburgh	2.8	3.7
7. Detroit	4.0	3.1
8. Montreal	4.2	3.1
9. Los Angeles	3.9	2.4
10. San Francisco	2.7	2.1
11. Cincinnati	1.2	1.7
12. Milwaukee	1.0	1.6
13. Dallas	1.0	1.6
14. St. Louis	1.5	1.5
15. Denver	0.5	1.5

The cities listed above were the fifteen most frequent destinations to which respondents to the in-flight survey were traveling. The general similarity in the two surveys is particularly noteworthy in view of the fact that while controls were introduced into the selection of flights on the in-flight survey for such factors as airport, airline, day of week, and class of flight, destinations entered through chance alone. The September 1954, C.A.B. Study was not available at the time this report was prepared.

In-flight survey results that deal with local origins of the respondents are very similar to the Origin and Destination Survey conducted by the Port Authority in 1951. The earlier survey had more than 36,000 interviews compared with 6,500 for the in-flight survey. The following table compares the local origins and destinations of the 1951 survey with the local origins of the in-flight survey.

COUNTIES OF ORIGIN AND DESTINATION IN 1951 SURVEY AND COUNTIES OF ORIGIN IN 1954 IN-FLIGHT SURVEY

County or Borough	1951 O. & D. Survey	1954 In-flight Survey
Total Metropolitan Area	100%	100%
East of Hudson	87	84
Manhattan	56	54
Bronx	3	2
Brooklyn	6	5
Queens	9	8

Comparison of Survey Data with External Information

County or Borough	*1951 O. & D. Survey*	*1954 In-flight Survey*
Nassau	5	7
Suffolk	1	1
Westchester	5	5
Fairfield	2	2
West of Hudson	13	16
Bergen, Rockland	3	4
Hudson	1	1
Passaic, Morris	1	2
Essex	5	5
Somerset, Middlesex	1	1
Union, Richmond	2	2
Monmouth	0	1

The two columns are not entirely comparable, because the 1951 survey includes both overseas and domestic traffic and also gives combined data on the local origins and destinations of both inbound and outbound passengers. However, overseas traffic was a small part (10 percent) of the total traffic in 1951. The fact that the 1951 O & D survey combines local origins and destinations would not cause much change in the distribution among the various counties, on the assumption that most of the departing passengers would return to the same points. Notwithstanding these basic differences, the two surveys show a markedly similar distribution of the traffic for the counties of the Metropolitan Area.

The percentage of domestic passengers who reside in the Metropolitan Area remained virtually unchanged in both surveys. The 1951 O & D survey indicated that resident domestic passengers accounted for 43 percent of total domestic passengers compared with 41 percent for the 1954 in-flight survey.

APPENDIX IV

Qualifications on the Use of Data for the More Frequent Traveler

The in-flight survey was a probability sample, in essence, of all occupied plane seats on flights leaving the airports for domestic points during a three-week period. Undoubtedly, during the three-week period some individual persons occupied a seat on more than one flight. It is not therefore precisely a sample of all persons who made a flight at any time during the survey period. A person who made two flights from New York had double the chance of being included in the sample and is, therefore, represented twice in the results. It is not known whether anyone was actually *in* the sample twice; this is less important than their being *represented* by the sample twice.

People who made, for example, fifty air trips in a year from New York to a domestic point probably made, on the average, three trips during the survey period. They are therefore represented three times by the sample. There is no information on how many of the trips reported by passengers were, in fact, made from New York on domestic flights. At most, it would be one-half, as the questionnaire asked that round trips be reported as two trips. It is probably considerably below this, however, since certainly some of the frequent travelers who are represented by the survey made their trips from points other than New York and may have made overseas trips. The result is that the true number of individuals who made a large number of trips is almost certainly somewhat smaller than indicated in Table 13.

Although there is no way of knowing the extent of this over-representation, a maximum can be assigned to it. It would be largest if all outbound trips were in fact made from New York to domestic points. On this assumption, the number of passengers making 100 or more trips drops from 4 percent to 1 percent, and their trips decrease from 24 percent of the total to 9 percent. Similarly, the number of passengers making fifty or more trips would be 6 percent of the total instead of 12 percent shown in

Table 13, and their trips would be 28 percent instead of 49-percent.

As adjusting for multiple trips during the survey period reduces both the number of passengers and the number of trips, the cumulative percentages are essentially unaffected. Consequently, these cumulative percentages are approximately correct, regardless of how many trips were made by some passengers during the survey period.

THE PORT OF NEW YORK AUTHORITY is the self-supporting corporate agency of the States of New Jersey and New York. Operating without burden to the taxpayer, it was created in 1921 by treaty between the two States to deal with the planning and development of terminal and transportation facilities, and to improve and protect the commerce of the Port District.

Port Authority Commissioners, six from each State, are appointed by the Governors of New Jersey and New York. They serve without pay for terms of six years.

The Authority's Lincoln and Holland Tunnels and George Washington Bridge spanning the Hudson River, and its Bayonne and Goethals Bridge and Outerbridge Crossing connecting Staten Island and New Jersey, join the States into one vast industrial, residential and recreational area.

The bi-state agency's terminal facilities include the Port Authority Bus Terminal, the Port Authority Building, housing the Union Railroad Freight Terminal, and the New York Union Motor Truck Terminal, in Manhattan; the Port Authority Grain Terminal at Gowanus Bay, Brooklyn; La Guardia Airport and New York International Airport in New York City; Newark Airport, Teterboro Airport, Port Newark, Hoboken-Port Authority Piers, and the Newark Union Motor Truck Terminal in New Jersey.

Charged by statute with the protection of port commerce, the Port Authority appears before such regulatory bodies as the Interstate Commerce Commission, the Civil Aeronautics Board and the Federal Maritime Board in the interest of the welfare of the unified Port Area. It maintains branch offices in Washington, D.C., Chicago, Cleveland and Rio de Janeiro, Brazil in the interest of promoting the movement of commerce through the Port of New York.