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NYCTA STRIKE ON
TRAVEL BEHAVIOR
OF REG. USERS.

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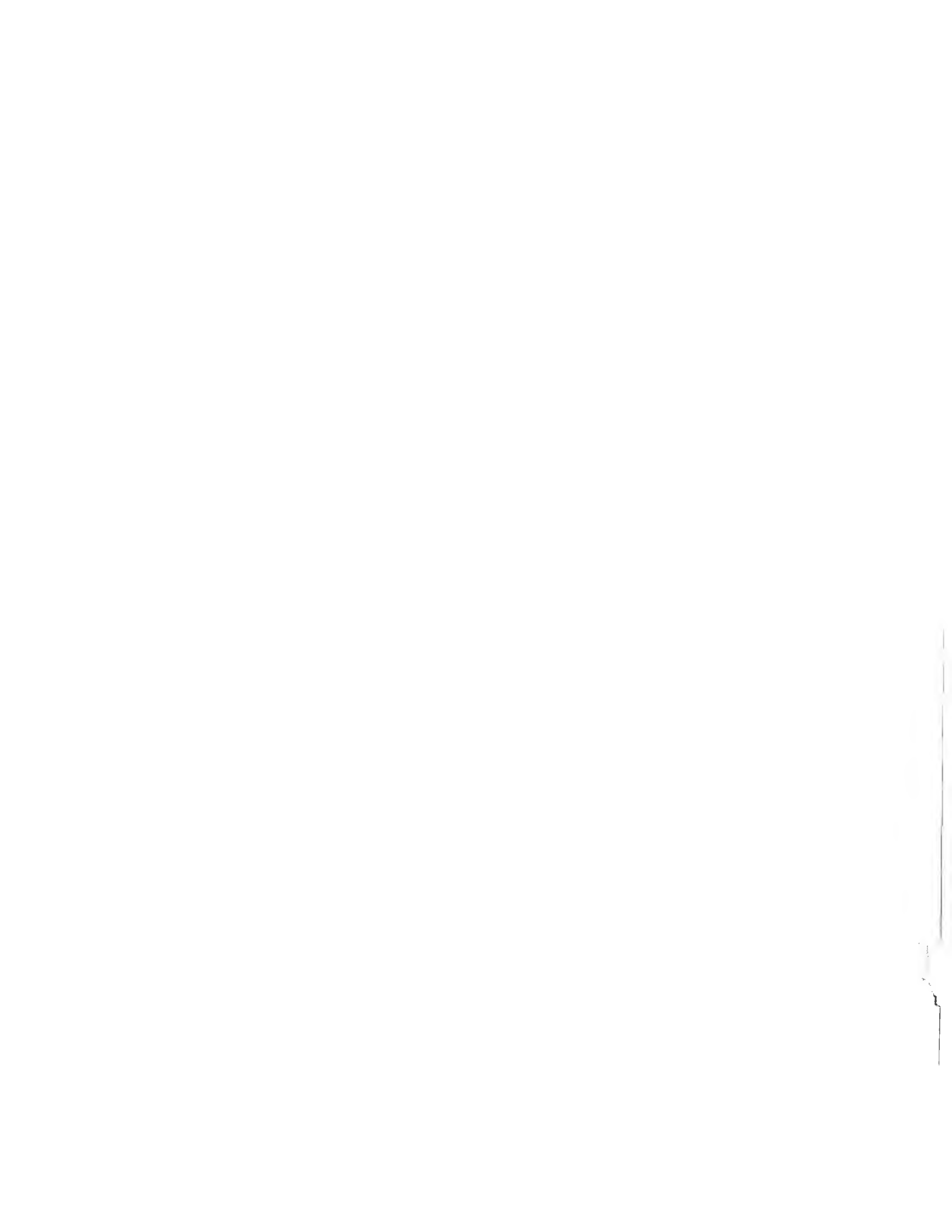
NEW YORK CITY TRANSIT STRIKE

ON THE TRAVEL BEHAVIOR OF

REGULAR TRANSIT USERS"



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NEW YORK CITY TRANSIT AUTHORITY

THE EFFECT OF THE 1966 TRANSIT
STRIKE ON THE TRAVEL BEHAVIOR
OF REGULAR TRANSIT USERS

Prepared from a Survey Made by

BARRINGTON and COMPANY
DIVISION OF DAY & ZIMMERMANN, INC.

NEW YORK CITY TRANSIT AUTHORITY

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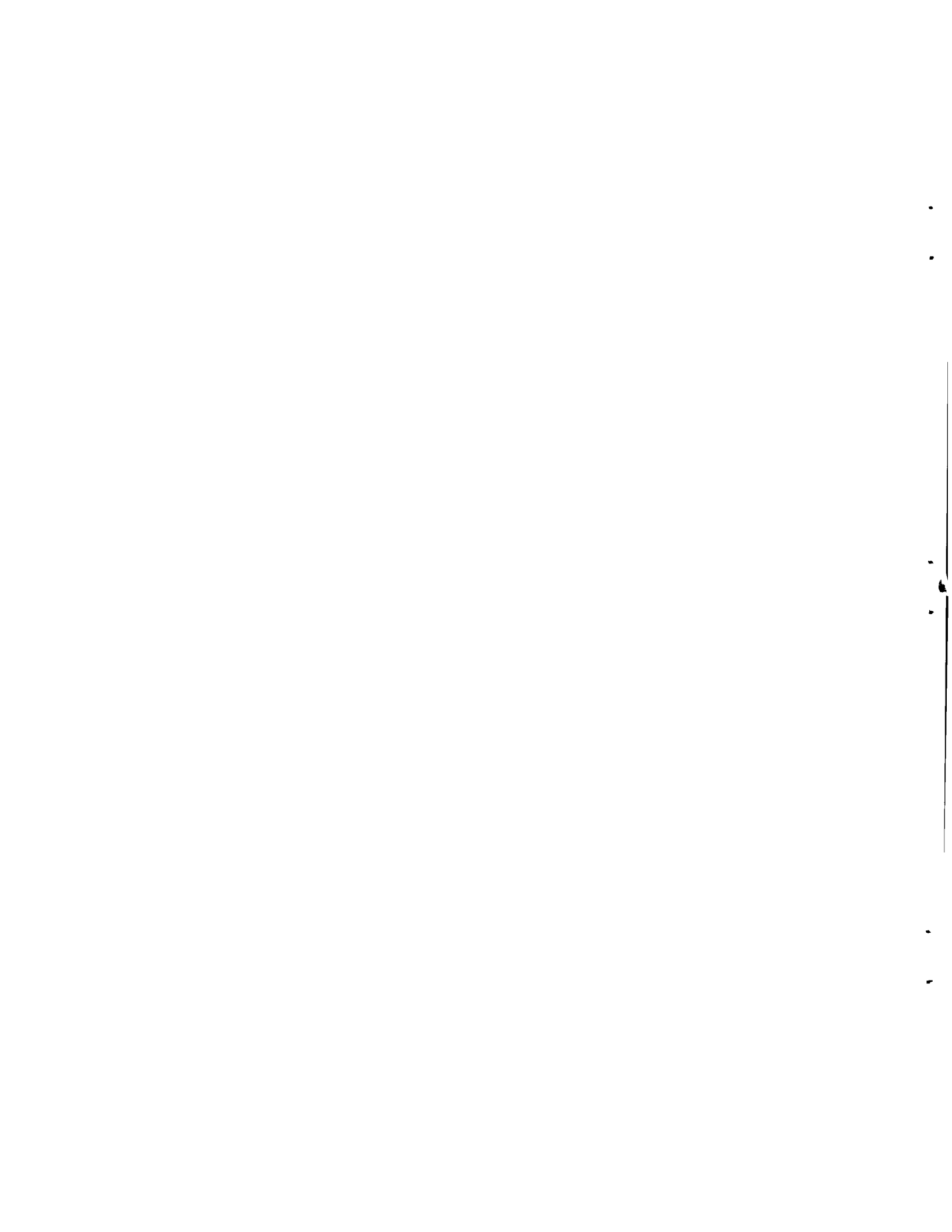
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FOREWORD

From January 1 to January 13, 1966 the City of New York experienced a major work stoppage by the operating employees of the New York City Transit Authority, the Manhattan and Bronx Surface Transit Authority, the Tri-Boro Coach Corporation, the Steinway Transit Company, the Queens Transit Company, Jamaica Buses, Inc. and the Avenue B and East Broadway Transit Company. The first two are public agencies, the last five are privately owned. More than 40,000 transit employees struck the various companies, completely halting all services. Sixteen million residents in New York City and its metropolitan area were affected in one way or another. More than five million daily riders were inconvenienced, some to the extent of a temporary loss of their means of livelihood. Schools were closed, business suffered tremendous losses and street traffic was brought to a standstill for hours on end in many areas of the city.

While negotiations were proceeding towards a strike settlement, public officials including the members of this Authority, expressed their concern, first, over the public welfare and second, over the effects of the strike on public passenger transit. Of major concern was the possible loss of rapid transit patronage and an increase in the use of other modes of travel which could further complicate the city's traffic and transportation problems.

It was decided to attempt a study that would establish the effect of the strike on the public and on its future travel patterns.



Federal financial assistance for such a study was sought and obtained as a demonstration grant arranged through the Department of Housing and Urban Development on February 1, 1966.

Barrington and Company undertook a survey of the effect of the strike on users of the New York City Transit System based on a random sampling of transit riders regarding:

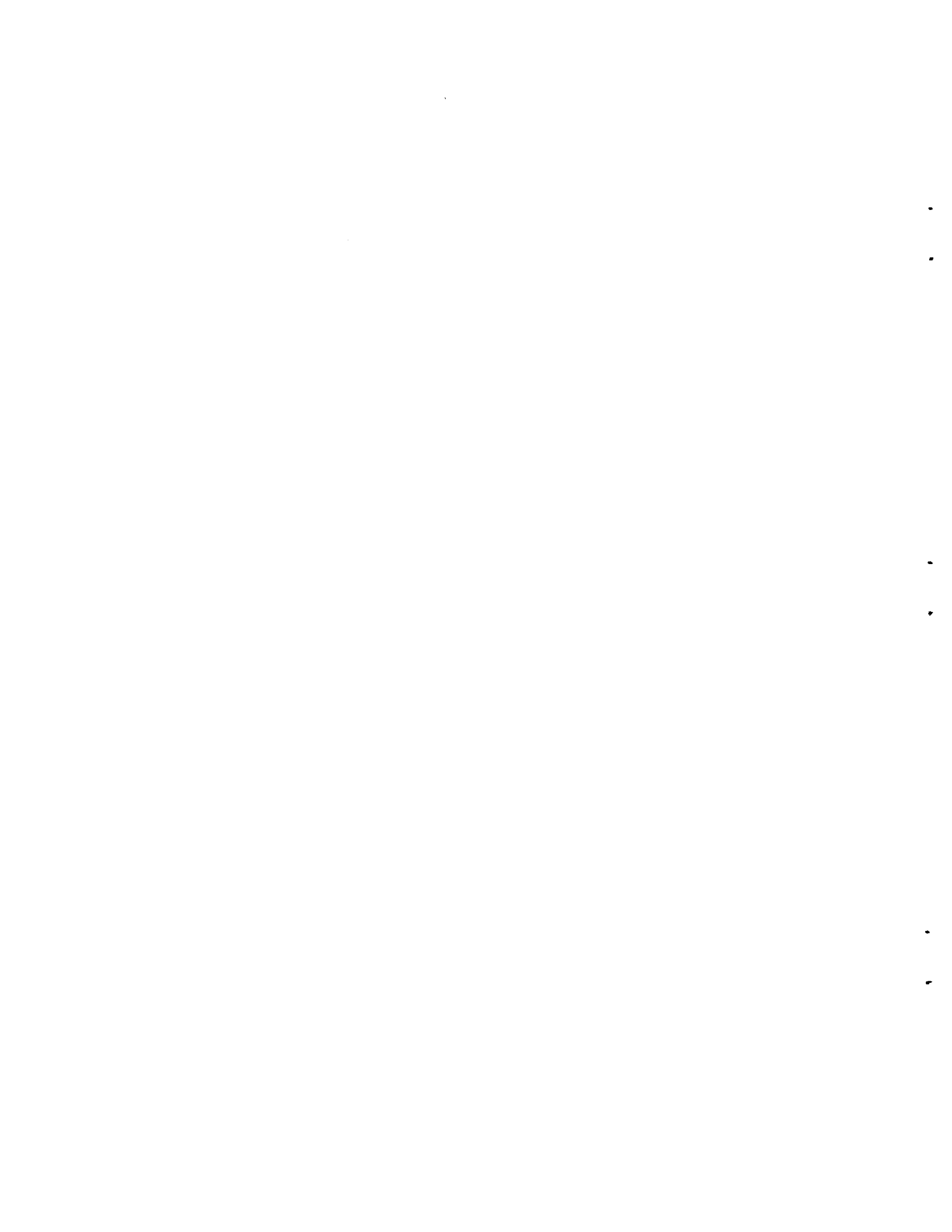
- 1) Their pre-strike travel behavior,
- 2) Their diversion, during the strike, to other forms of transportation, if available, and
- 3) Their post-strike travel habits.

The survey was begun on February 7, 1966 and the collection of data was completed on April 12, 1966.

Coding, card punching and analysis of the data by computer required an additional three months and a first draft copy of the survey report was submitted in July, 1966. The final report was submitted by Barrington on January 6, 1967. It is presented in its entirety.

The New York City Transit Authority accepts the survey findings as disclosed in this report as statistically accurate, valuable for purposes of reference, and a possible guide in future similar emergencies. They demonstrate beyond question the tremendous impact of the strike on the City and its environs. The details are in the report, but a few of the findings highlight the magnitude of the strike effects:

While the strike affected everyone in the area, rich and poor, city dweller and suburbanite, in all activities in which the transit



system is used, going to work, shopping and social, educational and recreational trips, the impact was always greatest on the lower income groups.

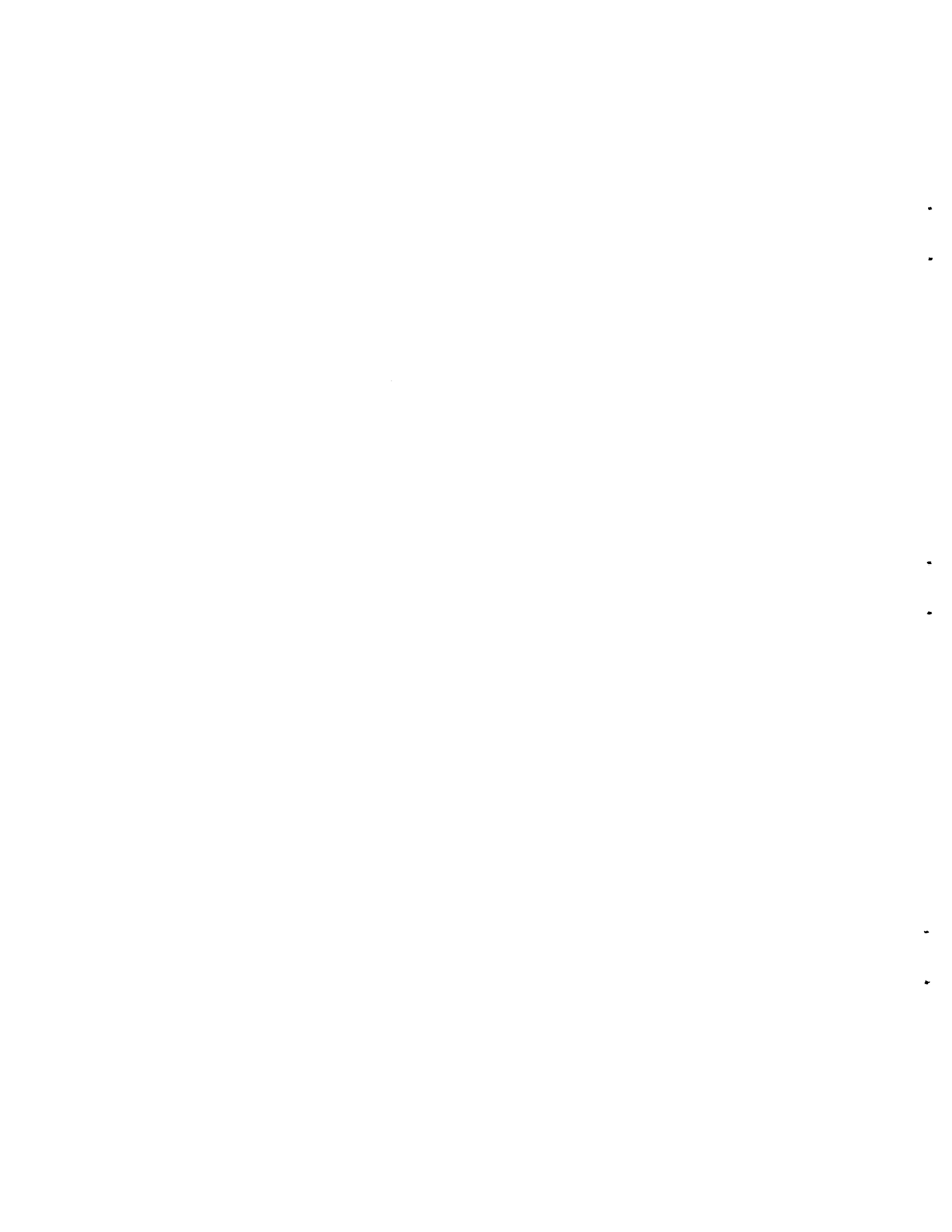
Forty per cent of workers normally using the subway or bus to go to work lost one or more work days during the strike. Fifteen per cent did not get to work at all. Among low income workers (under \$3,000 per year) the corresponding figures were 60% losing some time and 30% not working at all.

This represents a total loss of at least 6 million man-days of work. No estimate can be made of the time lost by workers who worked less than their regular hours during the strike.

The median length of the trip to work doubled for those who managed to get there, from about half an hour to one hour and six minutes. Where only one out of eight workers normally took an hour or more to get to work, during the strike five out of eight took an hour or more.

Shopping by users of the transit system was reduced by about 50% during the strike. One-third of shoppers normally using the transit system put off all shopping during the strike, and almost half put off some shopping. One-third did all their shopping in new places.

Among users of the transit system for social, educational, recreational, and other personal activities, three-quarters put off some or all of such activities.



The report under "FINDINGS," Section 1E, states that "2.7% of the regular-using households reported that at least one of the regular users was no longer using the transit system...six weeks after the strike." The Authority's passenger revenues for the first week of March (six weeks after the strike) showed a loss of 2.2%.

It is the Authority's experience that the lasting effect of a circumstance such as the transit strike of 1966 is always somewhat less than the immediate effect. For example, the revenue loss in the first week after the strike as compared to the same week in 1965 was 4.11% and in the last week of June 1966, 24 weeks after the strike, was 0.96%. A study of the trend of weekly revenue totals showed a fairly steady week-to-week reduction in the revenue loss.

Shortly after July 1, 1966 a change in fare structure nullified any further study of passenger trends due to the strike.

Assuming, then, that the 0.96% loss for the last week of fiscal 1966 is fairly representative of the permanent loss of riders after the strike, and since this is less than 50% of the 2.2% loss indicated above, it is suggested that all the post-strike results in this report can be reduced in the same ratio, or by about 50%, to determine the permanent effect on the post-strike travel behavior of transit users.

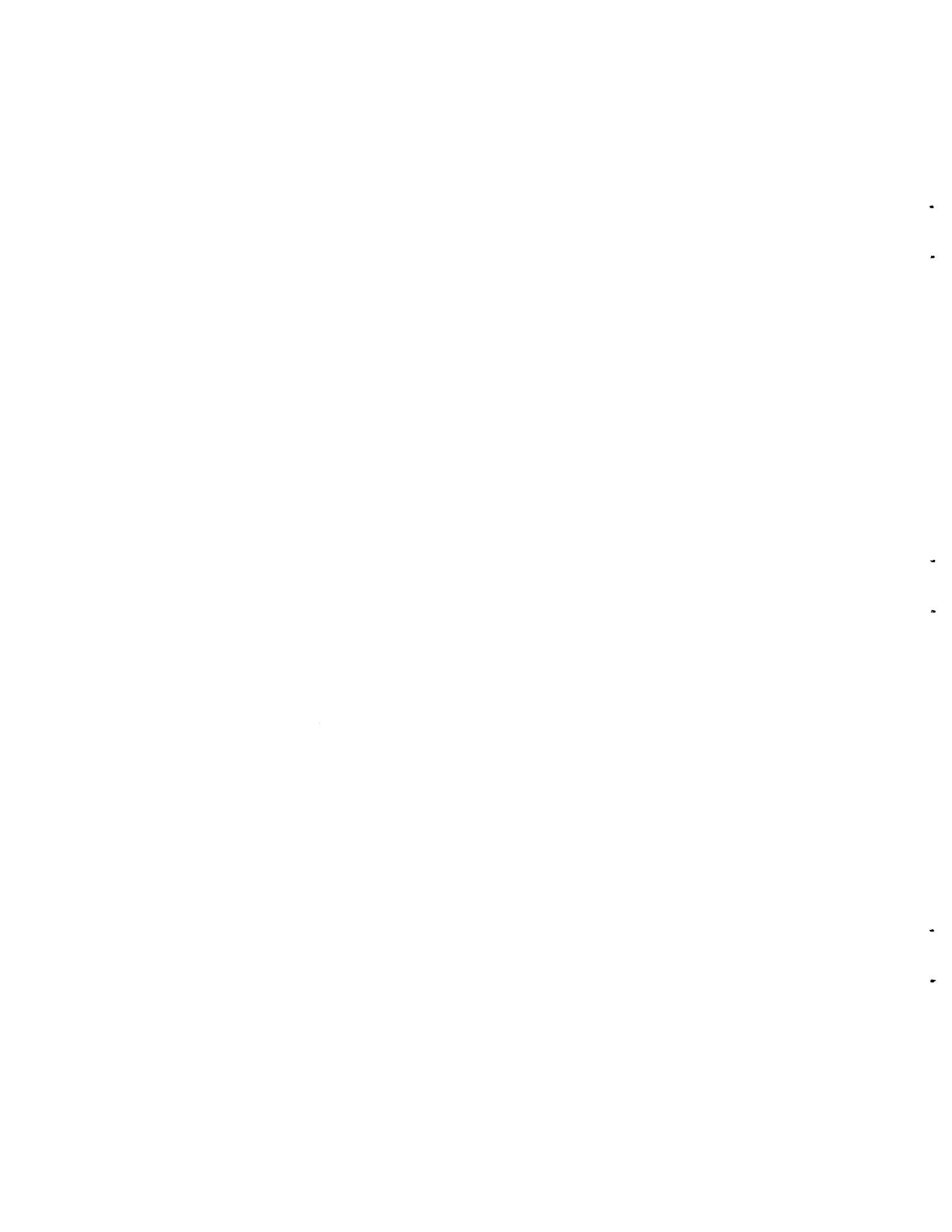


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HIGHLIGHTS OF FINDINGS

The report itself is a concise summary of the many details of the survey findings. The more salient of these have been selected for the highlights.

The effects of the 13-day New York City transit strike from Saturday, January 1, to Thursday, January 13, 1966, on the behavior of regular transit users were revealed through a scientific survey initiated immediately after the end of the strike. In this survey, based upon a systematic random sample of households, over 8,000 regular transit users in the four major boroughs of the city were interviewed at length. In a separate survey, over 1,700 transit users who were not telephone subscribers and who resided in lower-income tracts were interviewed as well to prove the accuracy of the basic survey and to focus on highly affected areas. Finally, about 700 transit users in the seven suburban counties were interviewed.

Getting to Work

Getting to and from work is by far the major purpose of mass transit trips in New York and involves almost three out of four of all those who use the subway or bus at least three times per week. About 3/4 of these start the trip by subway, 1/4 by bus.

Regular users were unable in 2 out of 5 cases to get to work sometime during the strike. One worker out of seven, normally using the transit system, did not get to work at all.

By January 4th, the second weekday of the strike, 31% of the regular transit users were still not at work. By the end of the strike 20% were not at work.

Modes

Of workers who got to work at all, 4 out of 5 remained with their first substitute mode of travel and continued to use it throughout the strike.

Over half the workers used the automobile at first. Two out of three of these riders did not drive their own car but rode in a car owned and driven by someone else.

A third of the workers used three other modes in about equal proportion: walking, taxis and employer-arranged buses. The railroads carried 8% of those making their first attempt to get to work.

Changes in mode were made by one in every five of the workers, generally to the automobile. About 7% stayed away overnight at some time during the strike.

Length and Cost of Trip

The median length of known trips for all workers during the strike was 66 minutes, about twice the pre-strike average on the transit system. This trip length stayed about the same throughout the strike, despite variations in mode, as more persons attempted to come to work.

Five out of eight took more than an hour to get to work during

the strike compared to one out of eight before the strike. Employer-arranged buses took more than an hour and a half on the average.

Most riders (69%) considered the cost of the trip during the strike to be "nothing" or not calculable but one in four reported spending over \$1.00 one way. Throughout the strike, the average trip cost stayed about the same for all workers.

Income and Occupation

Six out of ten lower-income workers (under \$3,000) were home some or all of the strike, double the proportion of the higher-income workers (over \$9,000). Three out of ten lower-income workers were home all of the strike, double the proportion of the middle-income workers (\$3,000-\$9,000).

The white-collar workers stayed home in about one out of four cases contrasted with more than half the blue-collar workers, except for those in the protective services, 4 out of 5 of whom worked the entire strike. The strike had a slightly greater effect on minor wage earners, chiefly working wives, than on major wage earners.

Route Patterns

Difficulty in getting to work was not influenced by time of day, except for the few (1%) who start to work in the evening rush hour, counter to the heavy traffic flow. The strike had a relatively greater effect on those who previously started the trip to work by subway rather than bus.

Those living in Manhattan below 60th Street had the best job attendance record but, still, one out of four stayed home at some time during

the strike. Routes to work for those working elsewhere than Manhattan were the most difficult to find substitute transportation for, especially on the part of those living in Upper Manhattan. Those who lived and worked in Western Queens had the least difficulty: only 18% were not able to work the entire strike.

Non-Telephone/Lower-Income Tract Transit Users

Only 2 out of 5 of those using the bus or subway at least once per week before the strike managed to work the entire strike and 2 out of 5 were home all the time. Their substitute modes were the same as other regular transit users except that fewer stayed away from home overnight.

Trip cost was calculated to be more than \$1.00 one way by one in three of those who came to work at all. Shorter average distance from home to work is indicated by the fact that only 2 out of 5 took more than one hour to get to work contrasted with 3 out of 5 of all workers.

Suburban Users

Those residing in the surrounding counties who use the city mass transit system at least once per week were not greatly affected by the strike: only one out of seven missed one or more days of work during the strike. Union and Bergen County residents were least affected. Essex and Nassau County workers were not able to get to work throughout the strike in one out of five cases.

Shoppers

Shoppers who previously used the transit system regularly were

chiefly off-peak and bus-oriented. Almost half put off some shopping during the strike while one-third put off all shopping normally done using public transit. One-third did all their shopping in new places, while one-quarter managed to find a substitute mode to get to their usual places in the city. In effect, shopping was reduced by about 50% during the strike.

Reduced shopping was greatest on the part of Queens residents and least in the Bronx where 2 out of 5 found new places to shop for things normally purchased on transit trips before the strike.

Those with lower incomes put off some shopping more than others while 2 out of 5 went to new places entirely, contrasted with 1 in 5 of the upper-income shoppers.

Older shoppers tended to either put off all shopping or to find entirely new places to shop; younger ones more often put off some shopping. As a result, about the same proportion of older and younger shoppers put off any shopping at all.

Suburbanites put off all shopping normally done by subway in 1/3 of the cases, only 1/10 shopped as usual and half of the shopping diverted to local outlets.

Other Purpose Trips

Trips on the mass transit system regularly made for other purposes than working or shopping are chiefly social trips in off-peak hours but are recreational, educational and personal in nature as well. Such trips were reported more frequently in Manhattan, in younger and in higher-income households.

During the strike, three out of four of all other-purpose transit users put off some of their activities. Of those who pursued any of these trips at all despite the strike, about three out of five reached their normal destinations. Curtailment of these trips was greatest in Brooklyn, in older and in lower-income households.

In the suburbs, users of city transit for non-work and non-shop purposes were younger and more affluent than those residing in the city. More than half put off all such trips during the strike. In effect, almost 20% of the activity which normally would have come to the city was diverted to local places and less than 30% was carried out as usual despite the strike.

Perceived Effect of the Strike

According to the subjective judgments of survey respondents, the strike had a large or very large effect on more than half the households containing regular transit users for work purposes.

Ability to get to work was evidently the single most important criterion used in assessing the overall effect of the strike on the household. Less than half of those who worked throughout the strike felt it had a large effect in contrast to 72% of those who were home for the entire period.

The effects of the strike, as perceived by the public, were fairly evenly spread throughout the city, although Brooklyn and Queens residents were affected slightly more, in their own opinions, than those in Manhattan and the Bronx.

The home-to-work route influenced judgments of the effect of the strike on individual households. The most difficult routes were Outer Brooklyn to Manhattan below 60th Street and from the Bronx to parts of the city other than Manhattan below 60th Street. Workers pursuing these routes felt the strike had a large effect in three out of five cases. In contrast, only one-quarter of those who lived and worked in Northern Queens felt that the strike had much effect on them.

In the lower-income tracts, non-telephone subscribers who used the subway or bus at least once per week before the strike felt that the strike had a large or very large effect in 2 out of 3 cases. Of those who lost any work at all, 3 out of 4 felt the strike had a large effect.

In the suburbs, more than 3 out of 5 workers considered that the strike had little or no effect on their households.

Post-Strike Diversion

After the strike, 2.1% of the regular transit-using workers in the four major boroughs stopped using the system. These workers were from younger, more affluent white-collar households. They had local destinations, that is, within their own residence zones, more so than those who went back to subways and buses. Also, more of them had driven in their own cars during the strike rather than in a pool.

Shoppers who did not return to using the mass transit, however, reverted to walking in more than half the cases. They were younger than transit-using shoppers as a whole.

Those who stopped using the mass transit system for social and personal activities shifted, in more than half the cases, to their own cars and taxis after the strike but one-third had no fixed modal pattern. These households were younger, but more were lower-income, than the other-purpose transit users who did return to the system.

After the strike, 5% of the suburban users, for any purpose, stopped using the city transit system.

* * * * *

INTRODUCTION

The New York City transit strike, which occurred during January 1 through 13, 1966 and affected all the rapid transit and more than 90 per cent of the surface lines, provided an opportunity to determine, through a survey, how the users of subway and bus systems adapted to a major mass transit disruption.

A study of the effects of the strike on mass transit users was undertaken by Barrington and Company, Division of Day & Zimmermann, Inc.

Description of Work

Interviews with transit users began within two weeks of the end of the strike and were completed within three months. The transit users were identified for the basic survey through a random sampling of between .5 and 1.0% of all households in the four main boroughs of the city, where households containing at least one 3-times-per-week (regular) user were surveyed by telephone. Two special surveys were also performed: (1) in seven suburban counties, where sufficient screening was done to produce about 100 once-per-week-or-more transit users in each county, and (2) in the lower-income census tracts of the city where personal interviews were accomplished among non-telephone-owning households containing once-per-week-or-more users of the transit system.

The survey is representative of regular transit users as a special population and the large size of the survey limits the range of error

to a very small fraction. There were 6,824 respondents in the basic survey reporting on 8,408 regular transit users, and 698 in the token suburban survey. To complete these numbers of interviews 29,258 households were called of which 15,751 were reached and screened. In addition, there were 2,126 personal interviews in the lower-income tracts.

Presentation of Results

The results of the analysis of findings are reported in terms of proportions of the transit-using population as defined. All tables in the report contain percentages. This means of presenting the data was selected as most useful for the greatest number of readers. A good comprehension of the behavioral effects of the strike can be obtained without intimate knowledge of the New York City transit system. Yet, those who are familiar with trip data can interpret the findings just as easily.

For those who wish to translate the proportions into trip figures or actual household numbers, the following background facts are presented:

Each 1% of worker households surveyed is equivalent to 20,250 workers, each making an estimated 500 trips per year.

Each 1% of shopper households surveyed is equivalent to 2,275, each making 300-400 trips per year.

Each 1% of other-purpose trip households surveyed is equivalent to 3,020, each making 300-400 trips per year.

Annual trips on the subway number 1.137 billion, excluding school children and free transfers, while surface transit trips, excluding Staten Island, total .435 billion.

The basic survey in the four major boroughs covered 76.2% of the transit trips. The remainder of the trips on the system are contributed by non-regular city users and persons from outside the city.

In the report, all percentages below 1/2% are indicated by an asterisk (*). All percentages are based upon 100%, including instances wherein specifics were undetermined, unless otherwise indicated.

* * * * *

PURPOSE AND APPLICATIONS

The purpose of this study was to obtain a factual picture of the effects of the New York City transit strike on regular transit users. An accurate record of what happened to those dependent upon the disrupted bus and subway system was desired so that planning and evaluation of current and future programs of the New York City Transit Authority and other related and supportive agencies involved or concerned could be guided to better serve the public. The research was directed toward the behavioral reactions of the public, excluding specifics regarding any economic losses other than trip costs.

The findings are of interest to many professionals for their own professional purposes. Economists, sociologists, historians, transit operators, government officials and all those affected by the strike now have through this report an exact knowledge of what transpired as a result of the strike.

The knowledge gained as a result of this study, including the effects both during and after the strike, can be used not only by planners and operations managers in New York City but also by public transportation and other officials in other metropolitan areas.

This report provides a basis for estimating the effects of a disruption of transit service of great magnitude and extended duration and indicates what difficulties inhere in making contingency preparation for a potential major disruption of transit service. It also provides insights on the importance of mass transit useful in planning the introduction of mass transit

to new areas. It may also give a clue to what happens to riders lost to a transit system as a result of involuntary disruption of their regular travel habits, if not also voluntary diversions caused by fare increases or service changes.

Many complex factors not within the scope of the survey, and the timing and conditions of any new situation, must be taken into account before drawing inferences from the effects of the transit strike in New York and applying them in other circumstances. Nevertheless, knowledge of the impact of this particular strike on public behavior may be an important contribution to planning in other areas.

For example, the findings can be used as a reference in developing an emergency plan which would anticipate transit user tendencies to use various substitute modes in the absence of mass transit service. Without any such plan, we know that in New York the automobile carried more than 1/2 the workers who were successful in getting to work and that 2/3 of these were passengers, mostly in a pre-arranged pool. We know that home-to-work distances made it possible for one in ten to walk, that one in ten was able to arrive by cab, and that employers provided free bus, car or truck service for another one in ten workers, especially in the latter days of the strike. We also know that people showed great ingenuity and persistence in finding ways to get to work. As more persons attempted to work and some shifted modes, the net effect was an almost constant average time and cost of trip throughout the strike period. In other words, it took as long and cost as much to get to work toward the end of the strike as it did in the middle.

Analysis of home-to-work distances and auto and taxi and street capacities and cooperative planning regarding supplemental transportation possibilities in another area or at another time, may reduce the extent of loss of workers to business and to other activities below the levels experienced in New York. In New York as a result of the strike, 15% of the workers normally using city transit were unable to work at all, another 21% had a partial work loss and the city work force normally carried by mass transit was reduced by $\frac{1}{3}$ initially and $\frac{1}{5}$ after 12 days.

The degree of curtailment of shopping and other activity normally made possible by mass transit may be reduced in other crises by substitute transportation arranged for by pools of merchants or theatre-owners or other agencies such as hospitals, schools and institutional complexes grouped in central locations. Without planned alternatives, we know that $\frac{1}{3}$ of the shopping normally done using the transit system in New York City was completely diverted to other areas, that about $\frac{1}{2}$ of it was partially deferred and that less than $\frac{1}{4}$ was completed as it normally would have been. In addition, we know that more than $\frac{2}{5}$ of the people normally making other-purpose (social, educational, recreational, etc.) trips by mass transit cancelled them, that less than $\frac{2}{5}$ pursued them as usual by other modes and that the remainder, less than $\frac{1}{5}$, changed their normal destinations in some way, diverting their personal affairs elsewhere. Planning for emergencies may reduce this disruption of normal patterns of living by providing alternative transportation modes.

Another application of the factual picture of the effect of the strike, also beyond the scope of this descriptive study, is in predicting the result of new transportation services.

The introduction of mass transit to an area will have an inverse effect to that of the removal of service as in the strike. The degree to which economic and social activity may be thereby facilitated can be estimated by planners, after proper adjustments for different circumstances and travel patterns, using the results of the strike survey as a reference. The effect will be inverse, that is, instead of activity being diminished it will be accelerated, but the effect will not be directly proportionate. The proportions of increased work trips, shopping, and social activity will be a function of magnitude and of rates of change in activity already existing due to other factors than transportation.

Further, how sudden the impact of new mass transit services is will depend upon how long a community has prepared for the event and the anticipatory redistribution of work centers, residences and facilities for shopping, amusement and personal expenditures. The nature of the impact of reinstating the operation of the transit system in New York, presuming for the sake of illustration that the strike conditions were normal and that the mass transit services were new, has value as an additional set of reference points in predicting the effect in other areas.

For example, a new system as proportionately extensive as that operated by the Transit Authority (in relation to area covered, population density, etc.) would draw more than half its passengers from automobiles, the size of the effective labor market in the area served would expand by 25-45% encompassing more lower-income workers in particular, as the overall trip time to work for all workers would be cut by at least 1/3. In addition, the trading

area of a comparable urban center newly serviced in this way would expand and the pace of shopping activity would increase substantially, by about $1\frac{1}{2}$ times, with 30% of the new business coming from increased travel frequency by existing shoppers, 30% diverted from surrounding areas and the rest discretionary shopping that otherwise may not have been done at all. In the same way, other activity (social/recreational/educational) would increase in volume by some $1\frac{1}{2}$ times with about 30% of this increase diverted from other places and the rest discretionary, that is, activity which could not be carried out elsewhere and would not have taken place without rapid transit.

Of course, in no conceivable circumstance would a comparable system be newly introduced in a comparable area with directly proportionate results. Local characteristics, especially transit route patterns, job openings and the capacity of facilities to handle shoppers and pleasure-seekers, will determine the scope of effect in particular instances. These and other factors must be considered in utilizing, for planning purposes, the accurate record of public behavior which is provided in this report. Looking at the impact of the strike inversely, however, serves to dramatize the role of mass transit service in stimulating socio-economic activity that otherwise would not take place and points up the consequent need to plan for handling discretionary trips, which are motivated directly by the existence of the public transportation system itself, in addition to those which are simply diverted from other modes and places.

* * * * *

OBJECTIVES

Factual data were developed through telephone and home interviews with transit users to determine the following:

- (1) Pre-strike travel patterns
- (2) Effects of the strike on the public
- (3) Adaptations of the public in the absence of normal transit services
- (4) Patterns of diversion from pre-strike travel patterns

Within each of the above four categories, further analysis was conducted to reveal, where applicable, variations among the public by:

- (1) Trip purpose
- (2) Length and cost of trip
- (3) Age
- (4) Income
- (5) Occupation
- (6) Location of residence

* * * * *

F I N D I N G S

1 - BASIC SURVEY

The survey plan in the city area called for interviews with at least 8,000 regular users of the New York City transit system. A regular user was defined as a person who uses the transit system three times a week or more for either work, shop or other-purpose trips. This number of interviews was desired for statistical reliability among various subgroups of the population. It was estimated in advance that 1/2 of 1% of the city's 2.7 million households would have to be interviewed in order to yield this number of regular user interviews; as it happened this prediction was most accurate.

A total of 21,520 households were contacted, sampled in a systematic random method using the telephone books of the four large boroughs. This resulted in 12,075 household interviews of which 6,824 had one or more regular users among its members. The interviews produced information regarding 8,408 transit users: 6,042 worker interviews, 1,015 shopper interviews, and 1,351 other-purpose interviews.

The first step was to determine if any members of the household qualified as regular users of the transit system. The following priority pattern was used in selecting the particular regular user in the household to be interviewed: (1) Major wage earner who uses the transit system (2) Housewife who uses transit system to go to work (3) Next oldest person who uses the transit system to go to work (4) Person who answered phone (if none of the above at home) who uses transit system to go to work. Once the

respondent was selected regular work, shop and other-purpose use was covered.

All telephoning took place from a central headquarters with monitoring facilities. Supervisors took particular care that 40% of the interviews in each borough took place between 9 a.m. and 6 p.m., and 60% between 6 p.m. and 9 p.m. They made sure that a minimum of three call-backs were made for each not-at-home call and further that the call-back took place in different time segments. The effect of these controls was to minimize any error due to non-response.

Comparison of Survey
Sample with Census

The distribution of households surveyed is exactly proportionate to the incidence of telephone households according to census data.

<u>Borough</u>	<u>Distribution of Telephone Households</u>	
	<u>Survey</u>	<u>Census 1960</u>
Manhattan	24%	24%
Bronx	18	18
Queens	26	26
Brooklyn	32	32

The regular transit users discovered in the survey are somewhat younger than the general adult population.

<u>Age</u>	<u>Regular Transit Users</u>	<u>Census: Population 18 yrs. & over</u>
Under 35	35%	31%
35-54	41	38
Over 54	21	31
Undetermined	3	-

Six out of 10 regular transit-user households were of middle income with 3 out of 10 earning more than \$9,000 annually and 1 out of 10 earning less than \$3,000.

On a borough-by-borough basis Queens and Manhattan had somewhat more upper-income riders and Queens fewer in the lower-income bracket.

Total Household Income of Regular-Transit Users - 1966 Survey

	<u>Four Major Boroughs</u>		<u>Manhattan</u>	<u>Bronx</u>	<u>Queens</u>	<u>Brooklyn</u>
	<u>1960 Census</u>	<u>1966 Survey</u>				
Under \$3,000	15%	11%	13%	13%	7%	13%
\$3,000-\$9,000	61	58	53	64	54	61
Over \$9,000	24	28	32	21	37	22
Undetermined	-	3	2	2	2	4

Subway and bus riders, on a regular basis, are predominantly workers and therefore there are more higher-income and less lower-income households in the transit population than in the general population which includes many non-workers (retired, unemployed) with lower incomes.

On a borough-by-borough basis more of the regular-transit user households, especially in Manhattan and Brooklyn, are younger than is the case among the general adult population.

	<u>Manhattan</u>		<u>Bronx</u>		<u>Queens</u>		<u>Brooklyn</u>	
	<u>Survey</u>	<u>Census</u>	<u>Survey</u>	<u>Census</u>	<u>Survey</u>	<u>Census</u>	<u>Survey</u>	<u>Census</u>
Under 35	36%	30%	33%	31%	33%	29%	37%	32%
35 to 54	38	37	38	37	45	41	40	38
Over 54	22	33	25	32	20	30	20	30
Undetermined	4		4		2		3	

Since in the four large boroughs users for work purpose amount to 72% of all regular city transit users, the worker group is considered in great detail.

A - WORKERS

The Worker Sample

Workers were represented in 6 out of 7 regular user households in the sample and, therefore, the distribution of the worker sample by borough and by household income was within one percentage point in each category of those described for the total sample.

Before the strike over one-third of these regular worker households had two or more household members taking either bus or subway to work, and one out of ten had three or more. The overall average is 1.5 transit-using workers per regular worker household.

<u>No. of Transit-using Workers In Regular Worker Households</u>	
One	64%
Two	26
Three	7
Four	2
Five	<u>1</u>
	100%

Average per household: 1.5

This study gives a detailed report on one worker in each household. The occupational distribution for these workers, when compared to census data, shows that the regular transit user households contain more in the professional-managerial and clerical-sales class, more in the unskilled worker class, and less of the skilled/semi-skilled workers.

<u>Occupation</u>	<u>Workers Who Are Regular Transit Users (Survey 1966)</u>	<u>All Workers: 4 Boroughs (Census 1960)</u>
Professional & Managerial	26%	22%
Clerical & Sales	33	27
Services	10	12
Skilled & Semi-skilled	12	28
Unskilled	12	4
Undetermined	<u>7</u>	<u>7</u>
	100%	100%

Seventy-three per cent of the above workers were the major wage earners in the household, 21% were the minor wage earners and for 6% this was undetermined.

* * * * *

PRE-STRIKE PATTERN OF WORK TRIPS

Origin of Workers

For the purpose of this study, the four large boroughs were divided into eight zones as follows:

<u>Origin Zone</u>	<u>Workers Who Are Regular Transit Users</u>
<u>Manhattan</u>	26%
Manhattan Below 60th Street	8%
Upper Manhattan	18
<u>Bronx</u>	18%
<u>Queens</u>	23%
Western Queens	11%
Northern Queens	4
Eastern Queens	8
<u>Brooklyn</u>	33%
Downtown Brooklyn	12%
Outer Brooklyn	21

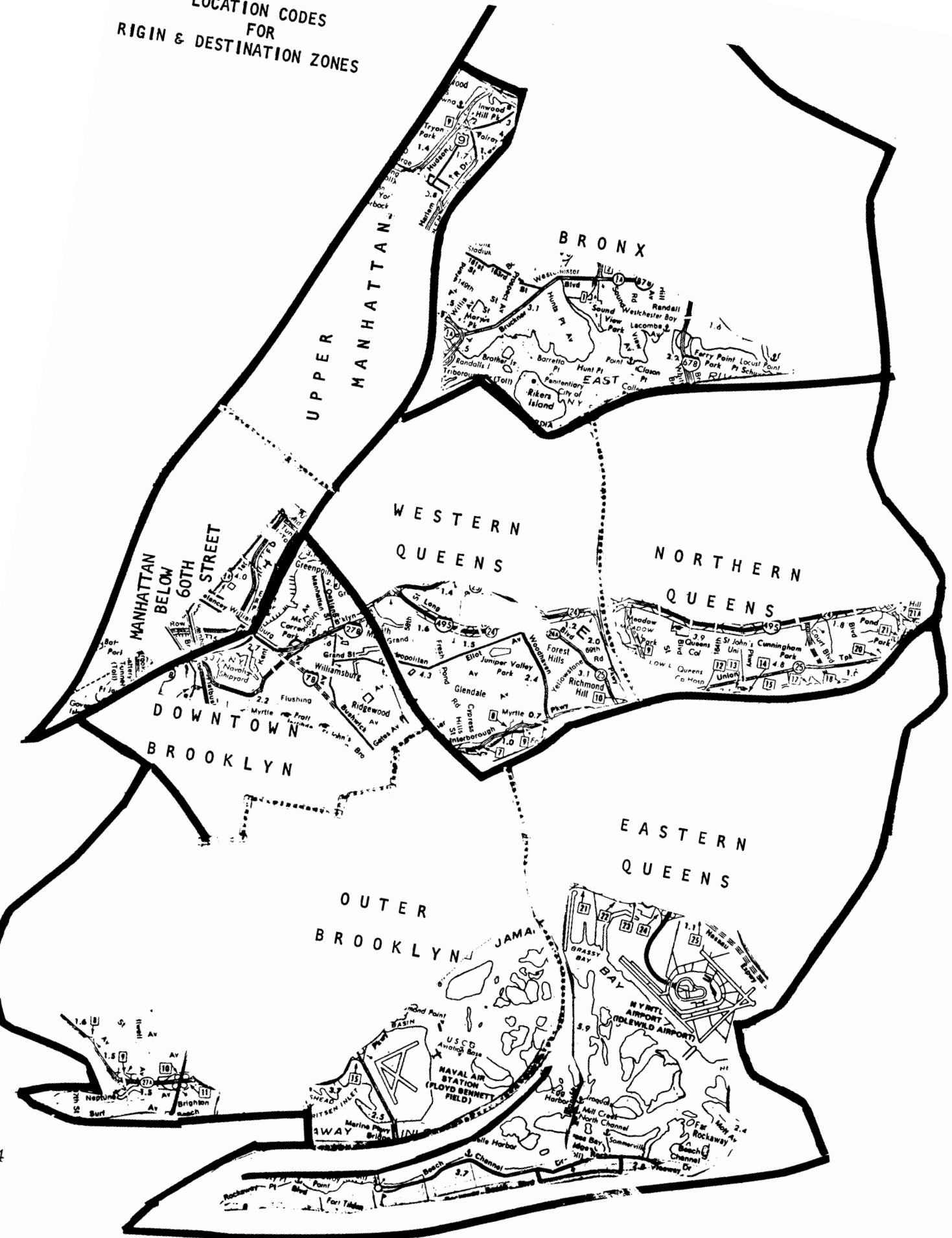
	100%

These zones are illustrated on the map appearing on the next page.

Destination of Workers

Seventy per cent of the workers interviewed in the four large boroughs had a work destination in Manhattan below 60th Street. Twelve per cent had local destinations; that is, one contained within the same origin zone in any of the boroughs. Fifteen per cent had destinations elsewhere than Manhattan below 60th Street but not within their own origin zone: these workers had such patterns as Brooklyn to Queens, Bronx to Upper Manhattan, and so on.

LOCATION CODES
FOR
ORIGIN & DESTINATION ZONES



Location of Work Destination

Manhattan Below 60th Street	70%
Local (Except Manhattan Below 60th Street)	12%
Non-Local	15%
Undetermined	<u>3%</u>
	100%

Origin and Destination of Workers
In Four Large Boroughs

The overall origin and destination pattern of regular users of the transit system for work shows Upper Manhattan, Outer Brooklyn, and the Bronx origin zones contributing the largest segments to the Manhattan-below-60th Street destination total. Seven out of eight of Manhattan below 60th Street regular users work there. Queens local traffic is light. Outer Brooklyn non-local traffic is relatively heavy.

<u>Origin</u>	<u>Destination</u>			<u>TOTAL</u>
	<u>Manhattan Below 60th Street</u>	<u>Local</u>	<u>Non-Local</u>	
Manhattan Below 60th Street	7%	-	1%	8%
Upper Manhattan	14	3	2	19
Bronx	12	3	2	17
Western Queens	9	1	1	11
Northern Queens	3	*	1	4
Eastern Queens	5	1	2	8
Downtown Brooklyn	7	3	2	12
Outer Brooklyn	<u>14</u>	<u>2</u>	<u>5</u>	<u>21</u>
	71%	13%	16%	100%

* Less than .5%

NOTE: Excludes workers with undetermined destinations

Over half of the workers in Manhattan below 60th Street live in Outer Brooklyn, Upper Manhattan and the Bronx; Manhattan below 60th Street itself contributes one-tenth of the workers. Northern and Eastern Queens contribute very little of the overall local traffic. Manhattan below 60th Street, when considered local traffic, accounts for more than one-third of this type of work trip movement. Outer Brooklyn accounts for almost one-third of the non-local destination traffic, chiefly to Downtown Brooklyn.

Source of Destination Workers by Origin Zone

<u>Origin</u>	<u>Manhattan Below 60th Street</u>	<u>Local</u>	<u>Non-local</u>
Manhattan Below 60th Street	10%	36%	8%
Upper Manhattan	19	14	12
Bronx	17	14	15
Western Queens	12	6	7
Northern Queens	4	1	4
Eastern Queens	8	3	10
Downtown Brooklyn	10	14	13
Outer Brooklyn	<u>20</u>	<u>12</u>	<u>31</u>
	100%	100%	100%

Trip Characteristics

The pre-strike trip pattern of these workers showed that 25% of these workers started their work trip by bus and 75% by subway.

Sixty-nine per cent started their trip during the morning rush hour, defined as 7 a.m. to 9 a.m.; only 1 in 100 started the trip in the evening rush hour. Twenty-two per cent had some other regular pattern during

off-peak hours. For 6% of the workers the starting trip time varied, and for 2% the trip start time was undetermined.

Before the strike over one-fifth (22%) of these workers paid more than 30¢ to get to work.

One third took one-half hour or less to get to work on the transit system, about half took from one-half to one hour, and the remainder took more than one hour.

On January 1, 1966 the transit strike began; it continued for two weeks, posing a problem to the many workers who previously had relied on this system for getting to their jobs.

* * * * *

PATTERNS OF BEHAVIOR DURING THE STRIKE

The effect on job attendance, the work flow during the strike period, the alternative modes of travel that were used, the cost and time involved and what the workers said and felt about the strike are described for the transit-using worker population as a whole.

In addition, the effect of the strike on particular types of workers is presented. These types are determined by residence, income, occupation, major or minor wage earner status and travel characteristics, including pre-strike mode, trip start time, origins and destinations.

Worker Attendance

The broad effect of the strike on job attendance is seen in the fact that about 2 out of 5 regular users of the transit system for work were not successful in working the entire duration of the strike. One worker out of seven, normally using the transitsystem, did not get to work at all.

Worked entire duration of strike		64%
Home some or all of strike		36%
Home some		21%
Home first then worked	16%	
Worked first then home	5%	
Home entire duration of strike		15%
		<hr/> 100%

Periods of the Strike

The strike began on Saturday, January 1, 1966. The first period of the strike extended through Tuesday, January 4th. If a worker reported by Tuesday, January 4th and worked at least one day in each of the other strike periods he was counted as working the entire strike.

The second or middle period of the strike included Wednesday the 5th of January through Saturday the 8th of January.

The third and final period of the strike covers Sunday, January 9th through Wednesday, January 12th. The strike ended on Thursday, January 13th, with partial service restored, mostly later in the day.

This division of the strike into periods was used to trace those who went to work at first, then stopped, or who stayed out first and then went to work, either in the second or the third period of the strike.

Worker Flow

At the start of the strike, the 64% who worked the entire duration were augmented by the 5% who worked initially but later stayed home. Therefore, 69% of the workers were working by Tuesday, January 4th or the end of the first period of the strike.

In the second period of the strike, which began Wednesday, January 5, 1966, an additional 10% of the workers came to work making the at-work total 79%. However, during this period, 4% of the workers who had worked previously stayed at home, resulting in an at-work total of 75% at the end of the second period.

During the third period of the strike, which began on Sunday, January 9th, when an additional 6% of the workers came to work, only 1% stopped working. By the end of the strike 80% of the workers who normally use bus or subway were at work. An additional 5% had worked sometime during the strike but were now home and 15% had not come to work during any one of these strike periods.

Worker Flow During The
Three Strike Periods

Worked in 1st period, reported by Tuesday, January 4th	69%
In 2nd strike period:	
More came in	+ 10%
Some stayed home	- 4%
Work Force level-end of 2nd strike period, January 8th	75%
In 3rd strike period:	
More came in	+ 6%
Some stayed home	- 1%
Work Force level-end of 3rd strike period, January 12th	80%

Modes of Travel

Although a variety of substitute travel modes were used by workers during the strike, four out of five used one mode of travel only. One out of five used two modes or more and a very small proportion, about one out of twenty-five, used three or more.

As workers tried to adapt to the absence of regular transportation about one out of twenty gave up after each new mode was tried and remained home for the rest of the strike.

The number of travel modes attempted by the 85% who worked at some time during the strike is as follows:

	<u>Attempted</u>	<u>And Then Stayed Home</u>
One mode only	79%	4%
Two modes only	17%	1%
Three or more modes	<u>4%</u>	*
	100%	

The car was the most important first mode of adaptation serving over one-half of the workers who came in during the strike.

Buses (mainly employer arranged), taxis, railroad, and walking (which includes bicycles and roller skates) each provided a solution for 9% to 12% of the workers. Miscellaneous means included boat and helicopter and, included with undetermined means, amount to no more than 2% of the cases.

Staying away overnight was basically not a popular solution. Only 1 in 100 adopted it immediately although by the end of the strike 7 out of 100 workers did stay away overnight at least once to avoid traveling.

MODES OF TRAVEL TO WORK

Base: 85% of workers

	<u>First Mode</u> Base: 100%	<u>Second Mode</u> Base: 21%	<u>Third Mode</u> Base: 4%
Car	54%	38%	44%
Bus	12	8	13
Walked	12	6	8
Taxi	11	12	9
Railroad	8	7	14
Other	2	1	2
Stayed away overnight	<u>1</u>	<u>28</u>	<u>10</u>
	100%	100%	100%

The car continued to be the most important means throughout the strike. Shared rides provided a consistent solution to about one-third of the workers.

<u>Attempted Modes of Workers During Strike</u>			
Base: 85% of Workers			
	<u>First Mode</u>	<u>Second Mode</u>	<u>Third Mode</u>
	Base: 100%	Base: 21%	Base: 4%
<u>Car</u>	54%	38%	44%
Own car	16	5	7
Other car	36	32	35
Knew driver	31	22	28
Did not know driver	5	10	7
Undetermined	2	1	2

With the exception of the Queensboro Bridge bus, all buses were arranged by employers. The Queensboro Bridge bus served only a little more than one per cent of the workers.

	<u>First Mode</u>	<u>Second Mode</u>	<u>Third Mode</u>
Bus	12%	8%	13%
Employer arranged	11	7	10
Queensboro Bridge	1	1	3

One out of eight workers walked to work. A smaller proportion attempted this as their second and third modes and, overall, only 14% walked to work at any time during the strike.

	<u>First Mode</u>	<u>Second Mode</u>	<u>Third Mode</u>
Walked	12%	6%	8%

One out of nine immediately used a taxi and before the strike was over 14% of the workers had used this mode at least once.

	<u>First Mode</u>	<u>Second Mode</u>	<u>Third Mode</u>
Taxi	11%	12%	9%

The railroad, mainly the Long Island and New York Central, provided transportation for 8% of the workers at first; before the strike was over about 10% had tried this means.

	<u>First Mode</u>	<u>Second Mode</u>	<u>Third Mode</u>
Railroad	8%	7%	14%
Long Island	5	4	8
New York Central	3	2	3
New Haven	*	-	-
PATH	*	1	3

Twenty-eight per cent of those trying a second way of getting to work chose to stay away overnight. In fact, three-fourths of those who did stay away overnight during the strike did so only after trying something else first.

	<u>First Mode</u>	<u>Second Mode</u>	<u>Third Mode</u>
Stayed away overnight	1%	28%	10%

Other modes chosen such as boat and helicopter and undetermined modes accounted for less than 2% of workers.

Length of Trip

The various attempts at changing modes of travel were not successful in shortening the length of trip. The proportion of workers who spent various lengths of time traveling to work remained constant throughout the three periods

of the strike. Further, the average length of trip was the same for the workers trying a second travel mode as it was for the first travel mode.

The pre-strike median time of getting to work by transit of 34 minutes was nearly doubled to 66 minutes. Although 40% of the workers needed one-half an hour or less to come in before the strike, only 19% achieved this during the strike. Similarly, although 47% took between one half to one hour before the strike, only 20% achieved this during the strike. Before the strike, 13% had a transit trip length of more than one hour; during the strike 61% took more than one hour to get to work.

Cost of Trip

The cost of the trip to work during the strike was not calculated or not recalled or considered to be "nothing" by 69% of the workers. The reason for this is that only about one-third of the workers were in a direct cost situation: that is, drove their own cars, or paid taxi or rail fares in their first attempt to get to work. Nearly two out of three workers walked or rode in cars or buses operated for their benefit by others. Of all the workers, 12% reported a one-way cost of between one and two dollars while 6% claimed a cost between two dollars and three dollars. Another 6% had costs of \$3.00 or more. The remainder, amounting to 7% of all workers, paid less than a dollar. Their costs vary greatly by mode.

Perceived Effect of Strike on Household

When regular transit-using household spokesmen were asked whether the strike had had a little or large effect on their household, more than half said that they felt the effect had been large or very large.

Strike had large effect -- 54%

Strike had little effect -- 46%

It is clear that ability to get to work is a key to how this question was answered.

Percentage of Workers Who Said
Strike Had Large Effect

Worked entire period of strike	46%
Home first, then worked	65%
Worked first, then stayed home	69%
Home entire period of strike	72%

Aside from getting to work, other inconveniences and costs experienced during the strike influenced the perceived effect as well. The impact of the strike on those who used different modes to get to work during the strike are reported along with the length and cost of trip in the following sections.

Length and Cost of
Trip By Mode

Drove Own Car

Of the 16% of workers who drove their own car, three out of four said they did not know the cost or had not calculated a cost. Similar findings on the reluctance of the public to place a value on automobile trips have been found in previous transportation studies.

First Mode: Drove Own Car
Base: 16% of Workers

<u>Trip Cost</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
Nothing to 14¢	1%	2%
15¢ to 29¢	72	1
30¢ to 59¢	24	4
60¢ to 99¢	*	2
\$1.00 to \$1.99	*	7
\$2.00 to \$2.99	-	6
\$3.00 to \$4.99	-	2
\$5.00 or more	-	2
Don't know, no answer	<u>3</u>	<u>74</u>
	100%	100%

Average trip length more than doubled from a pre-strike level of 38 minutes to 82 minutes during the strike. Before the strike almost 15% spent over 1 hour compared to 65% during the strike. One fourth spent 2 hours or more getting to work during the strike.

<u>Trip Length</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
$\frac{1}{2}$ hour or less	33%	17%
$\frac{1}{2}$ hour to 1 hour	52	18
1 hour to $1\frac{1}{2}$ hours	9	11
$1\frac{1}{2}$ hours to 2 hours	*	16
2 hours to 3 hours	*	16
3 hours to 4 hours	-	7
Over 4 hours	-	1
Trip varies, don't know	<u>6</u>	<u>14</u>
	100%	100%
Median Length of Known Trips	38 minutes	82 minutes

Of those who drove their own car into work, 47% felt that the effect of the strike on their household was large or very large.

Other Car Trips

A large number of workers rode in with others during the strike and half of this group said the trip had not cost them anything, even though in 4 out of 5 cases they knew the driver of the car. Another one fourth didn't remember or couldn't answer. Of those mentioning a cost the most common figures were between \$1.00 and \$2.00.

First Mode: Other Car
Base: 38% of Workers

<u>Trip Cost</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
Nothing to 14¢	1%	49%
15¢ to 29¢	72	1
30¢ to 59¢	23	4
60¢ to 99¢	*	2
\$1.00 to \$1.99	*	10
\$2.00 to \$2.99	-	4
\$3.00 to \$4.99	-	2
\$5.00 or more	-	1
Don't know, no answer	<u>4</u>	<u>27</u>
	100%	100%

The average pre-strike time spent getting to work for this group of workers increased by 40 minutes or double the pre-strike level.

<u>Trip Length</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
½ hour or less	36%	17%
½ hour to 1 hour	50	18
1 hour to 1½ hours	7	12
1½ hours to 2 hours	1	15
2 hours to 3 hours	*	16
3 hours to 4 hours	-	5
Over 4 hours	-	1
Trip varies, don't know	<u>6</u>	<u>16</u>
	100%	100%
 Median Length of Known Trips	 37 minutes	 77 minutes

Of those who came to work in someone else's car, 51% felt that the strike had had a large effect on their households.

Bus: Employer-Arranged

Workers were not charged when they traveled by employer-supplied vehicles except in a few cases.

First Mode: Employer-Arranged Bus
Base: 11% of Workers

<u>Trip Cost</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
Nothing to 14¢	-	95
15¢ to 29¢	75	*
30¢ to 59¢	23	*
60¢ to 99¢	-	1
\$1.00 to \$1.99	-	1
\$2.00 to \$2.99	-	1
\$3.00 to \$4.99	-	-
\$5.00 or more	-	-
Don't know, no answer	<u>2</u>	<u>2</u>
	100%	100%

The pre-strike time of getting to work increased by one hour, more than that for any other travel mode group.

<u>Trip Length</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
½ hour or less	33%	12%
½ hour to 1 hour	53	16
1 hour to 1½ hours	7	9
1½ hours to 2 hours	1	15
2 hours to 3 hours	-	18
3 hours to 4 hours	-	8
Over 4 hours	-	3
Trip varies, don't know	6	19
	<u>100%</u>	<u>100%</u>
Median Length of Known Trips	38 minutes	98 minutes

Only 40% of those who came to work by employer-arranged bus felt that the strike had had a large effect on their households.

Bus: Queensboro Bridge

The time and cost of getting to and from this public bus evidently was responsible for a much higher overall length of trip and trip cost than any other major mode used during the strike. Almost 3 in 10 paid more than \$1.00 one way for trips which included the use of this bus.

First Mode: Queensboro Bus
Base: 1% of Workers

<u>Trip Cost</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
Nothing to 14¢	-	4
15¢ to 29¢	71	36
30¢ to 59¢	24	13
60¢ to 99¢	-	8
\$1.00 to \$1.99	-	11
\$2.00 to \$2.99	1	10
\$3.00 to \$4.99	-	1
\$5.00 or more	-	7
Don't know, no answer	4	10
	<u>100%</u>	<u>100%</u>

<u>Trip Length</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
½ hour or less	28%	4%
½ hour to 1 hour	55	21
1 hour to 1½ hours	8	14
1½ hours to 2 hours	1	17
2 hours to 3 hours	-	18
3 hours to 4 hours	-	4
Over 4 hours	-	3
Trip varies, don't know	<u>8</u>	<u>19</u>
	100%	100%
Median Length of Known Trips	45 minutes	93 minutes

Of those who took this bus as a major mode, 47% felt that the strike had a large effect on their households.

Walk

Walkers incurred no trip cost in 98% of the cases. A small proportion of those who walked to work during the strike figured that there was some trip cost, for the most part not calculable, involved for unusual expenses especially on the longer trips. Prior to the strike, most (86%) of the walkers had a 15¢ one-way trip cost while a little more than one in ten spent 30¢ or more.

<u>Trip Cost</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
Nothing to 14¢	*	98%
15¢ to 29¢	86	*
30¢ to 59¢	12	*
60¢ to 99¢	*	-
\$1.00 to \$1.99	*	*
\$2.00 to \$2.99	-	*
\$3.00 to \$4.99	-	*
\$5.00 or more	-	-
Don't know, no answer	<u>2</u> 100%	<u>2</u> 100%

The pre-strike average of 20 minutes' time to get to work is about half that of any other group and reveals why walking was a practical option. Still time to get to work nearly doubled for this group to an average of 37 minutes. About one out of six spent one hour or more and 3% spent over 2 hours.

<u>Trip Length</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
$\frac{1}{2}$ hour or less	74%	33%
$\frac{1}{2}$ hour to 1 hour	15	32
1 hour to 1 $\frac{1}{2}$ hours	1	7
1 $\frac{1}{2}$ hours to 2 hours	-	6
2 hours to 3 hours	-	3
3 hours to 4 hours	-	*
Over 4 hours	-	*
Trip varies, don't know	<u>10</u> 100%	<u>19</u> 100%
Median Length of Known Trips	20 minutes	37 minutes

Forty-three per cent of this group thought the effect of the strike had been large.

Railroad

Of the fewer than one in ten workers who used a railroad as their first way to come to work during the strike most spent between \$1.00 and \$1.99 whereas most spent 15¢ - 29¢ before the strike. About a third of these rail users had trip costs of 30¢ or more before the strike.

First Mode: Railroad
Base: 8% of Workers

<u>Trip Cost</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
Nothing to 14¢	-	2%
15¢ to 29¢	63	1
30¢ to 59¢	34	4
60¢ to 99¢	1	19
\$1.00 to \$1.99	*	48
\$2.00 to \$2.99	-	6
\$3.00 to \$4.99	-	4
\$5.00 or more	-	*
Don't know, no answer	<u>2</u> 100%	<u>16</u> 100%

Median trip time increased nearly one half hour. Before the strike only 1% of this group regularly spent more than an hour and a half getting to work; during the strike the figure rose to at least 37%.

<u>Trip Length</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
½ hour or less	17%	16%
½ hour to 1 hour	63	24
1 hour to 1½ hours	15	11
1½ hours to 2 hours	1	19
2 hours to 3 hours	-	15
3 hours to 4 hours	-	3
Over 4 hours	-	*
Trip varies, don't know	<u>4</u>	<u>12</u>
	100%	100%
Median Length of Known Trips	45 minutes	1 hour 11 minutes

Sixty per cent of this group thought the effect had been large.

Taxi

About one in ten of the workers used the taxi as the first way of getting to work and spent between \$2.00 and \$2.99 compared to their pre-strike level of 15¢ to 29¢. About 30% of this group spent over \$3.00 on their one-way fare during the strike.

First Mode: Taxi
Base: 11% of Workers

<u>Trip Cost</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
Nothing to 14¢	-	3%
15¢ to 29¢	78	-
30¢ to 59¢	20	*
60¢ to 99¢	*	3
\$1.00 to \$1.99	*	27
\$2.00 to \$2.99	-	22
\$3.00 to \$4.99	-	18
\$5.00 or more	-	12
Don't know, no answer	<u>2</u>	<u>15</u>
	100%	100%

Their median trip time increased by 20 minutes. Before the strike, only five to six per cent took more than 1 hour to get to work, whereas at least one-third of those using taxis as their first mode took more than 1 hour to get to work.

<u>Trip Length</u>	<u>Pre-strike Pattern</u>	<u>First Mode During Strike</u>
½ hour or less	48%	27%
½ hour to 1 hour	40	20
1 hour to 1½ hours	5	8
1½ hours to 2 hours	*	13
2 hours to 3 hours	*	9
3 hours to 4 hours	*	3
Over 4 hours	-	1
Trip varies, don't know	<u>7</u> 100%	<u>19</u> 100%
Median Length of Known Trips	29 minutes	47 minutes

Sixty-six per cent of this group thought the effect of the strike on their households had been large or very large.

Stayed Away From Home

Staying away from home, as a first mode of adaptation to the strike, was done by only 1% of the workers. These transit users normally spent 15¢ before the strike to get to work; only 13% spent more. During the strike, close to 2 out of 5 said the trip cost was nothing. A few (5%) had costs of over \$2.00 for the trip from where they stayed to where they worked. Most, however, could not figure a direct cost for the trip.

Before the strike, seven out of ten of the stay-aways needed one-half to one hour to get from home to work; only 18% required less than a half hour and 9% took more than one hour. During the strike, a specific trip time to work from temporary lodging close to work was not calculated.

Most of the people staying away from home, did this as a second mode of adaptation to the strike. The corresponding figures for this group show three out of five report no trip cost with seven out of eight of this group saying their employer had paid the expense.

Second Mode - Away Overnight
Base: 6% of Workers

<u>Trip Cost</u>	<u>Pre-strike Pattern</u>	<u>Second Mode During Strike</u>
Nothing to 14¢	-	60
15¢ to 29¢	68	-
30¢ to 59¢	30	-
60¢ to 99¢	1	-
\$1.00 to \$1.99	-	-
\$2.00 to \$2.99	-	-
\$3.00 to \$4.99	-	1
\$5.00 or more	-	5
Don't know, no answer	1	34

The median pre-strike trip length of this group was 44 minutes with 14% taking more than one hour. Again hardly anyone calculated a specific trip time to work for this mode since they were so close to work that the trip time was negligible.

<u>Trip Length</u>	<u>Pre-strike Pattern</u>	<u>Second Mode During Strike</u>
½ hour or less	21	-
½ hour to 1 hour	61	-
1 hour to 1½ hours	13	-
1½ hours to 2 hours	1	1
2 hours to 3 hours	*	-
3 hours to 4 hours	*	-
Over 4 hours	-	-
Trip varies, don't know	4	99
Median Length of Known Trips	44 minutes	Not applicable

Length and Cost of Trips by
Three Strike Periods

The percentage of workers in each stated cost of trip category remained stable during each of the three strike periods, with most paying nothing or not placing a cost on their trip. The cost was one dollar or more to about one in ten workers in each period.

<u>Cost of Trip</u>	<u>First Period</u>	<u>Second Period</u>	<u>Third Period</u>
Worker Base:	69%	75%	80%
Nothing - 14¢	42	41	40
15¢ - 29¢	2	1	1
30¢ - 59¢	3	3	3
60¢ - 99¢	3	3	3
\$1.00 or more	11	11	11
Don't know, trip varies, no answer	39	41	42

The worker distribution by trip length also remained fairly constant in each strike period despite the increased numbers of travelers.

<u>Length of Trip</u>	Worker Base:	<u>First Period</u> 69%	<u>Second Period</u> 75%	<u>Third Period</u> 80%
$\frac{1}{2}$ hour or less		20	18	17
$\frac{1}{2}$ hour to 1 hour		20	18	18
1 hour to $1\frac{1}{2}$ hours		9	9	9
$1\frac{1}{2}$ hours to 2 hours		12	12	12
2 hours to 3 hours		12	11	11
3 hours to 4 hours		4	4	4
Over 4 hours		1	1	1
Don't know, trip varies, no answer		22	27	28
Median Length of Known Trips		59 minutes	62 minutes	62 minutes

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EFFECT OF THE STRIKE ON WORKER HOUSEHOLDS

Ability to work directly affected a person's opinion of the effect of the strike. One-fourth said they had been able to get to work and therefore the effect of the strike had been little. Another one-fourth mentioned that someone in the household had lost all or some days and most of this group thought the effect had been large. One-third mentioned the inconvenience of the strike and two-thirds of this group thought the effect had been large. About one-tenth mentioned that the strike had lost them money or caused a business loss. A small group (5%) mentioned the curtailment of school, visiting or shopping activities, and three-fourths of this group felt the effect of the strike had been large on their household.

Effect of Strike on Household

<u>Work</u>	<u>Large or Very Large Effect</u>	<u>Little or No Effect</u>	<u>Total</u>
Someone in household lost some or all days	19%	4%	23%
Able to get to work	2	23	25
<u>Expense</u>			
Extra cost or loss	8	2	10
Strike profitable to me	*	2	2
<u>Personal</u>			
Inconvenience - long hours of travel	23	10	33
Couldn't shop, visit or children-school	4	1	5
Health impaired	<u>2</u> 58%	<u>*</u> 42%	<u>2</u> 100%

Borough of Residence

The dislocation caused by the strike was not evenly spread. One-third of those in Manhattan and Queens but two-fifths of those in the Bronx and Brooklyn were home at least part of the strike. From one out of eight in Queens to one out of six in Bronx and Brooklyn were home all of the strike.

Home Some Or All Of Strike

	<u>Some</u>	<u>All</u>	<u>Total</u>
Brooklyn	24%	18%	42%
Bronx	22	17	39
Queens	21	12	33
Manhattan	18	14	32

The effect of the strike was felt fairly evenly in all boroughs.

Transit-using Workers Who Felt
Strike Had Large Or Very Large Effect On Their Households

Brooklyn	55%
Queens	55
Manhattan	50
Bronx	50

Income

Lower-income workers were most seriously affected with six out of ten home some or all of the strike. This is double the proportion of the higher-income group. Three out of ten lower income workers were home the entire strike or double the proportion in the middle-income group where the figure was one out of seven, and over three times that for the higher-income group where only one out of eleven were home the entire strike.

Home Some Or All Of Strike

	<u>Some</u>	<u>All</u>	<u>Total</u>
Under \$3,000	28%	30%	58%
\$3,000 - \$9,000	24	14	38
Over \$9,000	19	9	28

Two out of every three lower-income workers felt that the effect on their household had been large compared to one out of every two middle- and higher-income workers.

Strike Had Large Effect

Under \$3,000	67%
\$3,000 - \$9,000	53
Over \$9,000	52

Occupation

The unskilled and semi-skilled workers show a pattern similar to the lower-income group with slightly over half home some or all of the strike. In contrast, the managerial-professional group showed only one out of four home some or all of the strike. Protection workers (policemen, firemen, etc.) had the best record with only one out of five home some or all of the strike.

Home Some Or All Of Strike

	<u>Some</u>	<u>All</u>	<u>Total</u>
Unskilled	24%	32%	56%
Skilled and Semi-skilled	24	21	45
Services	23	19	42
Clerical and Sales	25	11	36
Managerial-Professional	17	7	24

Two out of every three unskilled workers felt the strike keenly compared to one out of two white-collar workers.

The perceived effect of the strike was directly related to occupational status.

Strike Had Large Effect

Unskilled	64%
Skilled and Semi-skilled	55
Services	59
Clerical and Sales	52
Managerial-Professional	50

Major/Minor Wage Earner

A somewhat higher proportion of minor wage earners, chiefly working wives, were away from work during the strike than was true for the major wage earner in the household. One out of five minor wage earners stayed home all of the strike; in contrast, only one out of eight of the major wage earners was home all of the strike.

Home Some Or All Of Strike

	<u>Some</u>	<u>All</u>	<u>Total</u>
Minor Wage Earner	25%	21%	46%
Major Wage Earner	21	13	34

Approximately the same proportion of each group felt the effect of the strike had been large or very large.

Strike Had Large Effect

Major Wage Earner	54%
Minor Wage Earner	53

Pre-strike Initial Mode: Bus/Subway

The strike had a slightly greater effect on those who started their pre-strike trip by subway rather than by bus.

Home Some Or All Of Strike

	<u>Some</u>	<u>All</u>	<u>Total</u>
Started trip by bus	18%	13%	31%
Started trip by subway	23	16	39

Accordingly, more subway users felt that the strike had a large effect on their households than did bus users.

Strike Had Large Effect

Started trip by bus	52%
Started trip by subway	55

Time Pre-Strike Work Trip Started

The effect was felt evenly by groups starting their work trips in all time periods. The evening rush hour group constituted only 1% of the workers.

Home Some Or All Of Strike

<u>Time Pre-strike Trip to Work Started</u>	<u>Some</u>	<u>All</u>	<u>Total</u>
Morning rush hour	23%	14%	37%
Evening rush hour	13	18	31
Other times (off-peak)	20	18	38
Time varies	21	17	38
Undetermined	22	11	33

Off-peak travelers to work were slightly more affected by the strike than others.

Strike Had Large Effect

Morning rush hour	54%
Evening rush hour	51
Other times (off-peak)	56
Time varies	52
Undetermined	52

Origin and Destination Zones

Although those living in Manhattan below 60th Street were least affected by the strike, nevertheless, one out of four of these residents stayed away from work some or all of the time.

<u>Origin Zone</u>	<u>Home Some Or All Of Strike</u>	<u>Strike Had Large Effect</u>
Manhattan Below 60th Street	25%	40%
Upper Manhattan	36	44
Bronx	39	48
Western Queens	33	56
Northern Queens	32	54
Eastern Queens	36	57
Downtown Brooklyn	42	50
Outer Brooklyn	41	52

Those working in Manhattan below 60th Street were somewhat more prone to feel that the strike had a large effect on them than those in other work centers. Even so, 45% of those working in their own residence zones felt the strike had a large effect. The proportion of workers who stayed home at all during the strike was greatest for those who had non-Manhattan destinations outside their residence zones.

<u>Destination</u>	<u>Stayed Home Some Or All Of Strike</u>	<u>Strike Had Large Effect</u>
Manhattan below 60th Street	37%	56%
Local (same as origin zone)	28	45
Non-local (outside origin zone but not Manhattan below 60th Street)	40	49

When origins and destinations are compared, it appears that workers living in Upper Manhattan going to work outside of Manhattan had the most difficulty getting to work. More than half of them were home some or all of the strike. In contrast, workers who both lived and worked in Western Queens

had the least difficulty with only 18% unable to work at any time during the strike. Other origin-destination patterns which proved more difficult to complete during the strike were:

- Downtown Brooklyn to non-local destinations
- Downtown Brooklyn to Manhattan below 60th Street
- Outer Brooklyn to Manhattan below 60th Street
- Bronx to Manhattan below 60th Street

In contrast, relatively easy routes to pursue during the transit strike were as follows:

- Manhattan below 60th Street to Manhattan below 60th Street
- Eastern Queens to Eastern Queens

The complete picture is as follows:

<u>Origin Zone</u>	<u>Home Some Or All Of Strike</u>		
	<u>Destination Zone</u>		
	<u>Manhattan below 60th</u>	<u>Local</u>	<u>Non-local</u>
Manhattan below 60th Street	22%	-	40%
Upper Manhattan	35	31	54
Bronx	41	26	39
Western Queens	34	18	33
Northern Queens	33	30	32
Eastern Queens	37	24	32
Downtown Brooklyn	44	33	47
Outer Brooklyn	43	31	40
Average	37%	28%	40%

The subjective impact of the strike was greatest for those traveling from the Bronx to parts of the city other than Manhattan below 60th Street and from Outer Brooklyn into Manhattan below 60th Street. In both instances, 61% of the workers believed that the strike had a large or

very large effect on their households. In contrast, relatively few (24%) of those living and working in Northern Queens felt the strike had a large effect on them and only 36% of those living and working in Western Queens felt so.

Strike Had Large Effect

<u>Origin Zone</u>	<u>Destination Zone</u>		
	<u>Manhattan below 60th</u>	<u>Local</u>	<u>Non-local</u>
Manhattan below 60th Street	44%	-	51%
Upper Manhattan	53	48	57
Bronx	58	44	61
Western Queens	58	36	50
Northern Queens	55	24	53
Eastern Queens	60	54	40
Downtown Brooklyn	58	48	47
Outer Brooklyn	61	44	51
Average	56%	45%	49%

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B - SHOPPERS

Anyone in a survey household who, before the strike, used the transit system three times a week or more in shopping for food, clothing, or other things for the house, was considered a regular user of the transit system for shopping purposes.

Regular users of buses and subways for this shopping purpose are about one for every six users for work purposes.

Shoppers Compared to Workers

The shopper income profile includes slightly more in the lower group (16% vs. 11% for workers) and slightly less in the higher (23% vs. 29%) with 58% in the middle \$3,000 - \$9,000 group and 3% where income was undetermined.

More of the shoppers lived in Manhattan (34% vs. 26%) and fewer in Queens (14% vs. 23%). Another 34% were from Brooklyn and 18% lived in the Bronx.

Shoppers who use the transit system three times per week or more reside most heavily in Upper Manhattan, in Outer Brooklyn and the Bronx. Few of these shoppers live in Queens.

Origin of Shoppers

Manhattan below 60th Street	13%
Upper Manhattan	21
Bronx	18
Western Queens	7
Northern Queens	3
Eastern Queens	4
Downtown Brooklyn	14
Outer Brooklyn	<u>20</u>
	100%

Nearly half the shoppers use the system for Manhattan shopping below 60th Street while one-third use the system to shop in their own residence zones.

Shoppers' Destination

Manhattan below 60th Street	47% (11% also live in this zone)
Local (except Manhattan below 60th)	33
Non-local	16
Undetermined	$\frac{4}{100\%}$

The heaviest volume of regular transit users for shopping purposes flows from Upper Manhattan to Manhattan below 60th Street. Also heavy via transit are local Bronx and local Manhattan shopping followed by local downtown Brooklyn and Outer Brooklyn into Downtown Brooklyn.

<u>Origin Zone</u>	<u>Shopping Destination</u>		
	<u>Manhattan below 60th</u>	<u>Local</u>	<u>Non-local</u>
Manhattan below 60th Street	12%	-	1%
Upper Manhattan	18	3	2
Bronx	5	11	1
Western Queens	4	2	1
Northern Queens	1	2	1
Eastern Queens	1	2	*
Downtown Brooklyn	3	10	1
Outer Brooklyn	$\frac{4}{48\%}$	$\frac{5}{35\%}$	$\frac{10}{17\%}$

NOTE: Excludes undetermined destinations

At least eight out of ten start their shop trip in off-peak hours and over half start their trip by bus.

Time Of Shopping Trip

Morning Rush Hour	4%
Evening Rush Hour	11%
Off-peak Hours	52%
Time varies	27%
Undetermined	$\frac{6}{100\%}$

Initial Mode of Travel

Bus	53%
Subway	46%
Other (varies, undetermined)	<u>1%</u>
	100%

Effect of the Strike On Shopping Activity

As a result of the shutdown, almost half the transit shoppers put off some shopping during the strike; more than one-third put off all shopping normally done via the transit system. Only 1 out of 5 did not put off any shopping normally done using bus or subway before the strike.

Put off all shopping	36%
Put off some shopping	45%
Did not put off any shopping	<u>19%</u>
	100%

About one-third of the shoppers did all their shopping in entirely new places. About one-fourth managed to get to their usual places to shop by other means than the previously relied upon bus or subway.

Shopping Normally Done Via Transit Continued During Strike: 64%

In usual place	14%
Usual place and elsewhere	10%
Elsewhere, not usual place	32%
Undetermined	8%

The subjectively perceived effect of the strike on private households was only slightly different from the effect reported by workers.

Strike had large effect	53%
Strike had little effect	47%

Borough of Residence

Roughly four out of five of the shoppers in each borough put off all or some of their shopping during the strike.

Put Off Some Or All Shopping

	<u>Some</u>	<u>All</u>	<u>Total</u>
Manhattan	42%	39%	81%
Bronx	44	34	78
Queens	49	36	85
Brooklyn	48	34	82

About two out of three shoppers carried out some of the shopping during the strike that they would have used the bus or subway for. New places to shop were found by shoppers in the Bronx more frequently than by shoppers in Manhattan.

	<u>Total Who Shopped During Strike</u>	<u>Shopped Elsewhere Entirely</u>
Manhattan	61%	26%
Bronx	66	38
Queens	64	34
Brooklyn	64	34

Income

Four out of five shoppers in each income group put off some or all shopping which would normally be done by mass transit. A slightly greater proportion did so in the lower-income groups.

Put Off Some Or All Shopping

	<u>Some</u>	<u>All</u>	<u>Total</u>
Under \$3,000	50%	36%	86%
\$3,000 - \$9,000	44	36	80
Over \$9,000	44	38	82

In each income group two out of three managed to do some shopping during the strike. New places to shop were found by a greater portion of the lower-income households, however.

	<u>Total Who Shopped During Strike</u>	<u>Portion Who Shopped Elsewhere Entirely</u>
Under \$3,000	64%	41%
\$3,000 - \$9,000	64	31
Over \$9,000	62	18

Age

Older families, where the respondent was over 54 years of age, tended to put off all shopping otherwise done using bus or subway while shoppers in younger households tended to put off some.

Put Off Some Or All Shopping

	<u>Some</u>	<u>All</u>	<u>Total</u>
Under 35	50%	31%	81%
35 to 54	45	37	82
Over 54	42	41	83

The older group did less shopping during the strike than the younger and a higher percentage of shoppers in the older households shopped elsewhere than their usual places.

	<u>Total Who Shopped During Strike</u>	<u>Shopped Elsewhere Entirely</u>
Under 35	69%	30%
35 to 54	63%	32%
Over 54	59%	36%

* * * * *

C - OTHER-PURPOSE TRANSIT USERS

Persons using the bus or subway before the strike three times per week or more for purposes other than working or shopping were surveyed as well.

The main other purposes for which the transit system was used three times per week or more before the strike were as follows:

	<u>Percentage of Respondents*</u>
Social	46
Educational	23
Recreational	19
Medical	4
Other	11
Not ascertained	3

* Adds to more than 100% due to multiple mentions

The other-purpose transit users, of which there were 7 for every 30 workers regularly using the system, tended to be younger in age, higher in income, and proportionately more were Manhattan residents.

Fifty-three per cent were in the \$3,000 - \$9,000 income bracket; 17% had a total household income of less and 27% earned more; 3% did not answer.

Forty-five per cent were under 35; 31% between 35 and 54; 22% were over 54, and 2% did not answer.

Thirty-nine per cent lived in Manhattan, and 31% in Brooklyn; 16% lived in the Bronx, and 14% in Queens.

The pre-strike pattern showed that 44% began their trip on a bus, 55% on a subway with 1% undetermined.

Like shopping, the bulk of the trip activity was concentrated outside the rush hours, with 13% in the morning rush hours, 15% in the evening, 65% at off-peak times and 7% varied or not determined.

Effect of Strike On Other-Purpose Activity

Altogether three out of four put off some or all personal activities during the strike. Only one-fourth continued these activities as usual.

Put off other-purpose activities entirely	44%
Put off some other-purpose activities	31%
Did not put off any other-purpose activities	<u>25%</u>
	100%

Those who did pursue social and personal affairs during the strike - more than half of regular users before the strike - carried on pretty much as usual. Between one in ten and one in five of the regular transit users for other purposes than work or shopping, changed the pattern of conducting their affairs because of the strike, diverting their activities to other destinations.

Total Other-Purpose Activities Continued During Strike - 56%

As usual	35%
As usual and changed destination	5%
Changed destination entirely	5%
Not specified	11%

Perceived Effect of Strike

About half of those regularly using the transit system for other-purpose trips before the strike felt the effect of the strike had been large. This is less than the proportion of workers (54%) who believed that the strike had had a large or very large effect on their household

Strike had large effect	49%
Strike had small effect	51%

Borough of Residence

Manhattan and Brooklyn residents curtailed their trips more so than those in the Bronx or Queens. The greatest proportion of persons putting off all personal and social purpose trips normally made by bus or subway was found in Brooklyn.

Put Off Some Or All Other-Purpose Trips

	<u>Some</u>	<u>All</u>	<u>Total</u>
Manhattan	34%	42%	76%
Bronx	27	44	71
Queens	30	41	71
Brooklyn	29	48	77

More than half of those in the Bronx and Brooklyn felt the strike had a large effect on their households while less than half of other-purpose trip makers felt so in Manhattan and Queens.

Strike Had Large Effect

Manhattan	45%
Bronx	55
Queens	46
Brooklyn	52

Income

Other-purpose trips of the lower-income group were affected slightly more than the higher-income group.

The lower-income group tended to put off all other activity, the higher-income group tended to put off some, with the middle-income group experiencing the greatest total curtailment of personal and social affairs which normally would require the use of the transit system.

Put Off Some Or All Other-Purpose Trips During Strike

	<u>Some</u>	<u>All</u>	<u>Total</u>
Under \$3,000	19%	52%	71%
\$3,000 - \$9,000	31	45	76
Over \$9,000	40	34	74

The felt effect of the strike on the individual households of other-purpose bus and subway riders was directly related to income.

	<u>Per Cent Who Said Effect of Strike Was Large</u>
Under \$3,000	53%
\$3,000 - \$9,000	50
Over \$9,000	43

Age

Age was directly related to curtailment of non-work/non-shop trips normally made on the transit system. The older the spokesman for the household in the survey, the more often other-purpose activity was reported to have been put off.

Put Off Some or All Other-Purpose Trips

	<u>Some</u>	<u>All</u>	<u>Total</u>
Under 35	37%	37%	74%
35 to 54	30	45	75
Over 54	21	57	78

In the same way, the effect of the strike on the household was judged to be large by fewer of the younger persons but the middle-aged group was most subjectively affected by loss of mass transit to pursue social and personal affairs.

Under 35	44%
35 to 54	54
Over 54	50

In summary, over half of the other-purpose transit users in lower-income and older households put off all this personal activity during the strike, compared to about one-third in the higher-income and younger age groups.

* * * * *

D - NON-REGULAR TRANSIT USERS

Non-users of the transit system, on a three-times-per-week basis, were not interviewed but were identified in the screening process of randomly selected households.

Households in which there were no members who regularly used the transit system for work, for shopping or for any other purpose did contribute their comments on the perceived effect of the strike before the interview was terminated. The characteristics of these households were learned as well.

Non-Regular User Characteristics

The non-regular transit users were older as a group than the regular users and included fewer middle-aged persons. Two out of five of the respondents in the non-user category were over 54 years of age.

	<u>Non-Regular</u>	<u>Regular</u>
Under 35	26%	11%
35 to 54	32	58
Over 54	40	28
Not ascertained	2	3

There were almost twice the proportion of lower-income households in the screened out, non-transit using categories as there were among regular transit users.

	<u>Non-Regular</u>	<u>Regular</u>
\$3,000 or under	21%	11%
\$3,000 - \$9,000	55	58
Over \$9,000	20	28
Not ascertained	4	3

The households in which there were no users of the transit system, for any purpose, at a frequency of at least three times per week, were disproportionately more numerous in Queens and disproportionately less numerous in Manhattan, than those containing regular transit users as defined by the study.

	<u>Non-Regular</u>	<u>Regular</u>
Manhattan	21%	27%
Bronx	18	18
Queens	30	22
Brooklyn	31	33

Nine out of ten of the non-users, regardless of location, age or income, said the strike had little effect on their household.

The fact that the non-regular user households (43.5% of the screened households) are truly infrequent users of the transit system is seen in that only one out of fifty (2%) had anyone in the household who ever used the transit system for going to work before the strike. Therefore, 99% of the worker trips using the bus or subway were included in the survey as three-times-per-week regular users.

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E - POST-STRIKE DIVERSION FROM TRANSIT SYSTEM

Four Large Boroughs

Each respondent in a regular-using household was asked if as a result of the strike the reported activity was carried out the same way as before; if not, the new method of transportation or route was determined.

It had been expected in advance that a certain proportion of the regular users, after extended use of an alternate mode of travel, would decide it was preferable to the old way.

This was the case: 2.7% of the regular-using households reported that at least one of the regular users was no longer using the transit system. This figure is an average applicable to March 1, 1966 or six weeks after the strike. The stopped-using proportion was greater among younger families and households with higher incomes:

Proportion of Regular-User Households Who Stopped Using by Age and Income

	<u>Age</u>		<u>Income</u>	
Under 35	4.3%	Under \$3,000		2.3%
35 to 54	2.1	\$3,000 - \$9,000		2.4
Over 54	1.5	Over \$9,000		3.6

The level varied from 2.1% among the regular-worker households to 2.4-2.6% among the shopper and other-purpose households.

Workers in the Four Large Boroughs

After the strike, 2.1% of the workers had stopped using the transit system for work. These former regular users were from younger households and ones of higher income than in the total regular user group. Fifty-one per cent are under 35 and 42% have incomes over \$9,000.

<u>Age</u>		<u>Household Income</u>	
Under 35	51%	Under \$3,000	6%
35 to 54	35	\$3,000 - \$9,000	50
Over 54	11	Over \$9,000	42
Undetermined	<u>3</u>	Undetermined	<u>2</u>
	100%		100%

The professional and managerial group, which accounts for one-fourth of the users, contributed one-third of those who stopped using. The clerical and sales group, which accounted for one-third of the users, contributed only one-fourth of those who stopped using.

<u>Occupation</u>	<u>Workers Stopped Using</u>	<u>Pre-strike Regular Workers</u>
Professional & Managerial	33%	26%
Clerical & Sales	25	33
Services	7	10
Skilled & Semi-Skilled Workers	16	12
Unskilled Workers	17	12
Undetermined	<u>2</u>	<u>7</u>
	100%	100%

In three out of four cases, the chief contributor to family income rather than the minor wage earner switched from transit use. Seventy-six per cent of the stopped-using group were major wage earners, 20% minor wage earners, and for 4% this was undetermined.

Looking at this group's pre-strike pattern by origin, proportionately more came from Queens and fewer came from the Bronx.

<u>Borough of Residence</u>	<u>Stopped Using</u>	<u>Total Regular Users</u>
Manhattan	28%	26%
Bronx	11	18
Queens	30	23
Brooklyn	<u>31</u>	<u>33</u>
	100%	100%

Although most of those who stopped using the system after the strike were workers in Manhattan below 60th Street, the highest proportion of users who stopped had a local destination; that is, worked and lived in the same area. The private car substituted for the bus or subway that had been taken before the strike.

<u>Destination</u>	<u>Workers Who Stopped Using</u>	<u>Pre-strike Regular Users</u>	<u>Proportion of Users Who Stopped Using</u>
Manhattan below 60th Street (excluding those who live there)	49%	63%	1.6%
Manhattan below 60th Street (those who live there)	10	7	2.9
Local (except Manhattan below 60th St.)	26	12	4.2
Non-local	14	15	1.9
Undetermined	<u>1</u>	<u>3</u>	<u>-</u>
Total	100%	100%	2.1%

The loss of traffic on the transit system was mainly felt in the morning rush hour. Sixty-one per cent began their trip to work in the morning rush hour, 27% were off-peak travelers, and for 12% the time of starting the trip to work varied.

Patterns of Travel During
and After Strike

Nine out of ten of those who stopped using the system had worked during the strike. The number of modes attempted matched the total worker pattern but somewhat more automobile travel and walking took place during the strike on the part of those who ultimately gave up using the bus or subway.

	<u>First Mode of Travel To Work During Strike</u>	
	<u>Stopped Using</u>	<u>Total Regular Workers</u>
Car	60%	54%
Walked	16	12
Bus	10	12
Taxi	7	11
Railroad	7	8
Other	-	2
Stayed Away Overnight	<u>-</u>	<u>1</u>
	100%	100%

Half of the car travel was in the respondent's own car compared to less than one-third for the total group.

The post-strike modes of travel to work closely matched the first mode of travel during the strike suggesting that a new habit had been created. Those who had come to work by employer-arranged bus, reverted to using their own car after the strike. In fact, two out of three of those who stopped using the mass transit system drove to work and over half of the entire group drove in their own car.

New Mode of Travel to Work After the Strike
Base: 2.1% of workers

Car		67%
	Own car	54%
	Other person's car	13
Walk		14
Railroad		7
	Long Island Railroad	6
	New Haven Railroad	1
Taxi		6
Other		2
Not determined		<u>4</u>
		100%

Shoppers

After the strike, 2.6% of those who previously used the transit system regularly for shopping had stopped using the bus or subway. Over half of these now walked and the remainder used car or taxi.

New Mode of Shopping Travel After the Strike
Base: 2.6% of Shoppers

Walk		54%
Car		31
	Own car	23%
	Other person's car	8
Taxi		<u>15</u>
		100%

These households were younger than regular transit-using shoppers in general and were chiefly of middle income.

<u>Age</u>		<u>Household Income</u>	
Under 35	54%	Under \$3,000	8%
35 to 54	35	\$3,000 - \$9,000	65
Over 54	11	Over \$9,000	27
Not Determined	<u>-</u> 100%	Not Determined	<u>-</u> 100%

Other-Purpose Users

After the strike, 2.4% of those who used the transit system regularly for some other purpose than work or shopping had stopped using the bus or subway. Car and taxi were now being used with a large group not specifying a particular new mode. Evidently, in the area of discretionary trips made for non-work and non-shop purposes, the modal habit once changed is subject to more diversity and irregularity.

New Mode of Other-Purpose Travel After the Strike Base: 2.4% of other-purpose users

Car	36%
Own car	33%
Other person's car	3
Taxi	21
Walk	7
Other	3
Varies, not determined	<u>33</u> 100%

These households were much younger than regular other-purpose transit users in general, with three out of four under 35, and more had lower income than the total other-purpose trip makers who continued using mass transit.

<u>Respondent Age</u>		<u>Household Income</u>	
Under 35	73%	Under \$3,000	24%
35 to 54	12	\$3,000 - \$9,000	49
Over 54	15	Over \$9,000	27
Undetermined	<u>-</u>	Undetermined	<u>-</u>
	100%		100%

* * * * *

II - SPECIAL SURVEYS

A - PERSONAL INTERVIEW SURVEY

Personal interviews in non-telephone-owning households in lower-income tracts supplemented the basic survey.

Why This Was Done

The telephone survey was theoretically biased in that it excluded all households not owning telephones. Such households are in greatest incidence in lower-income tracts. To determine if non-telephone households in lower-income tracts behaved differently during the strike, we conducted personal interviews in selected households in these tracts. We did not interview in higher median-income census tracts because the non-telephone households in these tracts are relatively small in number and do not differ as sharply from the telephone sample, especially with respect to reliance on mass transportation, as those in lower-income tracts.

How It Was Attempted

The selection of lower-income tracts was based on median income reported in the 1960 census. A tract with a median income of less than 75% of the median income for the borough as a whole was considered to be a lower-income tract. This criterion is arbitrary and has practical value only for survey purposes. There is no political implication or social or economic theory involved in the use of this selection method. A total of 227 tracts in the four major boroughs were classified as lower income, as shown on the following page.

LOWER-INCOME CENSUS TRACTS

Bronx

0025
0041
0043
0046
0047
0049
0057
0071
0075
0077
0079
0085
0087
0089
0119
0123
0125
0129
0131
0133
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0139
0143
0144
0145
0147
0149
0151
0153
0165
0167
0169
0357

0085
0127
0129
0129-1
0162
0164
0179
0185
0199
0225
0227
0229
0231
0233
0241
0245
0247
0249
0251
0253
0255
0257
0259
0259-1
0263
0265
0267
0271
0271-1
0273
0277
0281
0283
0285
0285-1
0289

0352
0354
0356
0361
0362
0363
0365
0381
0387
0465
0483
0487
0491
0493
0507
0511
0523
0525
0527
0537
0902
0904
0906
0908
0910
0912
0914
0918
0920
0982
1134
1136
1138
1156
1210
1214

Manhattan

0009
0015
0016
0018
0027
0029
0036
0041
0042

Queens

0084
0085
0095
0103
0109
0113
0115
0117
0123
0162
0164
0184
0186
0190
0196
0198
0201
0201-1
0202
0203
0204
0206
0207-1
0208
0209-1
0213-1
0216
0218
0220
0222
0226
0227-1
0228
0230
0249
0255
0257
0261
0263
0265
0267
0269
0271
0273
0275
0277
0279
0281

0019
0025
0029
0039
0087
0157
0194
0198
0204
0236
0248
0250
0252
0260
0262
0264
0266
0270
0272
0274
0276
0288
0363
0365
0366
0371
0373
0377
0379
0414
0434
0440
0446
0460
0871
0938
0942
0942-1
0952
0964
0999

Brooklyn

0023
0025
0027
0029
0029-1
0033
0039
0041
0043
0047
0051

0293
0295
0297
0299
0303
0307
0311
0313
0326
0330
0342

Selection of Lower-Income Tracts

<u>County</u>	<u>Total # Tracts</u>	<u>Median Income</u>	<u>75% of Median Income</u>	<u>Number of Tracts With Less Than 75% Value</u>
Brooklyn	910	5,816	\$ 4,362	95
Bronx	351	5,830	4,372	34
Manhattan	260	5,338	4,003	57
Queens	637	7,176	5,382	<u>41</u>
			Tracts Selected	227

In each tract, interviewers searched for non-telephone-owning households on a route connecting all the telephone-owning households that had been interviewed. Non-telephone owning households are normally concentrated in clusters. When these clusters were found, households were screened to locate subway or bus users. These households were listed and a randomly selected portion were interviewed in order to meet the original interview quota based on expected proportions of this selective universe.

How It Was Completed

The number of households identified in the field as both having no telephone and containing a regular subway user (three times per week or more) was insufficient to complete the control survey. Members of these households travel outside their immediate areas very infrequently. Many are unemployed or welfare cases. To complete the sample of non-telephone households in lower-income tracts, we obtained lists of such households from commercial credit firms. This supplemented our listing of non-telephone households in the clusters of such households which we had already identified. In addition, we relaxed our criterion of three-times-per-week mass transit usage, so easily met in telephoning-owning households, and accepted for the survey, any household

containing a user of buses or subways at least once per week prior to the strike. In this way we fulfilled our interview schedule and obtained sufficient data for a full description of behavior by persons in non-telephone-owning households located in lower-income tracts. It should be noted that not all of these households had lower incomes; however, they were all located geographically in clusters having the same socio-economic and cultural milieu. The interviewing was conducted so that 60% of the attempts were made in the normally non-work hours of 6:00-9:00 p.m.

Who Was in the Sample

The sample of non-telephone-owning households in lower-income tracts ultimately produced 2,126 personal interviews. Manhattan contained 42% of these, Brooklyn 33%, Bronx 19% and Queens 6%.

Except for Queens, where three out of five of the persons interviewed were women, respondents were divided about half male and half female.

It was a young sample. Except for Queens, where only 42% of the respondents were under 35 years of age, more than half the sample were under 35. In fact, in the Bronx, more than 2 out of 3 persons interviewed, as acceptable spokesmen for the family, were under 35. In Queens, 18% were over 54 and in Manhattan 12% were in this category; fewer than 10% of the sample in the Bronx and Brooklyn were in the older age category. The following figures show the age distribution by borough:

<u>Age</u>	<u>Manhattan</u>	<u>Bronx</u>	<u>Queens</u>	<u>Brooklyn</u>
Under 35	51%	68%	42%	66%
35 to 54	37	27	40	27
Over 54	12	4	18	7
Undetermined	-	1	-	-
	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Household income in these non-telephone-owning households was under \$3,000 per year in almost half the cases. Income over \$9,000 per year was reported in about 1% of these households. The remainder were in the middle-income category. Three out of five of the households in Queens were middle-income. The following figures show income distribution in the control sample:

<u>Household Income</u>	<u>Manhattan</u>	<u>Bronx</u>	<u>Queens</u>	<u>Brooklyn</u>
Under \$3,000	44%	47%	38%	50%
\$3,000 - \$9,000	54	51	61	46
Over \$9,000	1	1	0	1
Undetermined	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>
	100%	100%	100%	100%

In general, non-telephone-owning households in lower-income tracts of the four boroughs contain persons predominantly under 35 years of age, with incomes of less than \$3,000 per year, living chiefly in Manhattan and Brooklyn.

Worker interviews took place in 1,545 households, shopper interviews in 287 households, and other-purpose interviews in 404 households.

* * * * *

Patterns of Behavior During the Strike

The effect on workers' attendance; the alternate modes of travel, length and cost of trip and what the workers said about the strike are described and comparisons are made to the basic survey when appropriate.

Worker Attendance

Three out of five of the lower-income households with no telephone had a worker at home from work some or all of the strike compared to 2 out of 5 in the basic survey.

Worked entire duration of strike		41%
Home Some or All of Strike		59%
Home Some		18%
Home first then work	15%	
Work first then home	3%	
Home Entire Duration of Strike		41%
		<u>100%</u>

This contrasts with the experience of transit-using workers in general as discovered in the basic survey where only 36% were home some or all of the strike. At least half of this difference is accounted for by weighting basic survey income data to match the income composition of the lower-income tracts; then the basic survey data would lead one to expect 48% home some or all of the strike in the lower-income tracts.

Mode of Travel

The great majority of those who worked during the strike used only one mode of travel; one in six who worked at all during the strike attempted a second mode. As in the basic survey, one in twenty of all travelers to work gave up and remained home for the rest of the strike.

Number of Modes of Travel Attempted
By Those Who Worked During Strike

	<u>Base: 59% of Workers</u>	<u>and then gave up</u>
One mode	83%	5%
Two modes	15%	*
Three modes	2%	*

Modes of Adaptation During
the Strike

On the first attempt, nearly half the workers came to work by car. Bus, taxi, and walking were used about equally by the other workers.

	<u>First Mode</u> <u>Base: 100%</u>	<u>Second Mode</u> <u>Base: 17%</u>
Car	45%	39%
Bus: employer-arranged	18	14
Taxi	18	19
Railroad	2	1
Walk	17	4
Stayed Away Overnight	*	3

Perceived Effect of Strike
on Household

Nearly two out of three said the effect on their households had been large or very large. This is the figure that would be obtained if the answers by income from the basic survey are weighted by the income composition of this non-telephone sample.

Strike had large effect	65%
Strike had little effect	35%

Half reported that someone in the household had lost some or all work days. This is double the proportion of workers in the basic survey.

Accordingly, three-fourths of this group felt that the effect of the strike had been large. Inconvenience caused by traveling effort or being away from home longer periods was mentioned by only 12% of these workers, a third of the 36% of mentions in the basic survey.

Reasons Given For Perceived Effect Of Strike Among
Workers In Low-Income Tracts

<u>Work</u>	<u>Large Effect</u>	<u>Little Effect</u>	<u>Total</u>
Someone in household lost some or all days	39%	11%	50%
Able to get to work	1	20	21
<u>Expense</u>			
Extra cost or loss	8	2	10
Strike profitable to me	*	1	1
<u>Personal</u>			
Inconvenience-long hours of travel	8	4	12
Couldn't shop, visit or children-school	4	1	5
Health impaired	1	*	1
	61%	39%	100%

Length and Cost of Trip

One-third of workers spent 60¢ or more, half spent nothing and 11% did not know. About the same proportion spent more than \$1.00 as did workers in the basic survey, (24% vs. 29%).

First Mode of Travel
Base: 59% of Workers

	<u>First Mode</u>
Nothing to 14¢	51%
15¢ to 29¢	*
30¢ to 59¢	6
60¢ to 99¢	3
\$1.00 to \$1.99	15
\$2.00 to \$2.99	8
\$3.00 to \$4.99	5
\$5.00 or more	1
Don't know, no answer	11
	100%

The trip time, on the average, was about 9 minutes less than that for workers in the basic survey, chiefly due to the closer proximity of this group of households to work center destinations.

	<u>First Mode</u>
$\frac{1}{2}$ hour or less	20
Over $\frac{1}{2}$ hour to 1 hour	25
Over 1 hour to $1\frac{1}{2}$ hours	12
Over $1\frac{1}{2}$ hours to 2 hours	16
Over 2 hours to 3 hours	10
Over 3 hours to 4 hours	3
Over 4 hours	*
Trips varied or don't know	14
Median Length of Known Trips	57 minutes

Post-Strike Diversion

After the strike 1.3% of the workers in the lower-income tracts who previously had used the mass transit system at least once a week or more discontinued this use. This compares to an expected 1.4% if the basic survey answers by income are weighted to match the income composition of the lower-tract sample.

Conclusion

Results of the telephone survey are fairly representative of all households including those with no telephones and those in lower-income tracts. Any bias in the basic survey due to the exclusion of non-telephone households is slight, and does not affect overall survey results.

* * * * *

B - SUBURBAN SURVEY

The suburban survey covered Richmond, Nassau, Westchester, Bergen, Essex, Hudson and Union Counties. Inasmuch as the suburban area contributed only an estimated 10% of the trips on the city transit system, a token sample of 100 from each of these seven counties was sought. A total of 695 households were interviewed covering the behavior and reactions of 556 workers, 69 shoppers, 107 other-purpose users of the New York City transit system. The respondents, treated as a group, are representative of suburban users as a whole but statistically, each county sample is a different proportion of the transit-using population in that county and, therefore, a less reliable description is the result of this token sample approach.

The definition of "regular" use in the case of suburban interviews was once per week or more.

Effect of Strike on Job Attendance

Only one out of seven of the transit-using suburban workers missed some work days as a result of the strike. This proportion is less than half that among regular transit users for work purpose residing in the four boroughs.

Worked entire period of strike	86%
Home some or all of strike	14%
Some	6%
All	8%
	<hr/> 100%

Accordingly, in comparison with city resident workers, more of the suburban workers using the transit system regularly for work felt that the effect of the strike on their household was not large.

Strike had large effect	38%
Strike had little effect	62%

City transit users from Union and Bergen Counties felt the strike least of all and missed the fewest work days. The effect was greatest in Essex and Nassau Counties but even so the level of 19-20% who missed some days of work is only half that of workers from the four large boroughs.

Effect on Job Attendance

<u>Residence of Transit User</u>	<u>Home Some or All of the Strike</u>		
	<u>Some</u>	<u>All</u>	<u>Total</u>
Essex	7%	12%	19%
Bergen	4	6	10
Hudson	6	8	14
Union	7	3	10
Richmond	4	10	14
Nassau	10	10	20
Westchester	6	9	15

In proportion, fewer of Union and Bergen County workers, who relied on the city transit system before the strike, felt that the strike had a large effect on their households. The subjective judgment that the strike has a large effect was most widespread in Richmond and in Nassau.

Strike Had a Large Effect

Essex	40%
Bergen	28%
Hudson	41%
Union	19%
Richmond	54%
Nassau	51%
Westchester	45%

Ability to get to work was the major factor in determining whether a household experienced a large or little effect due to the strike. There were

almost as many suburban transit users mentioning inconvenience caused by the strike who felt it had a little or no effect as there were who felt it had a large or very large effect.

	<u>Effect of Strike on Household</u>		
	<u>Large or Very Large Effect</u>	<u>Little or No Effect</u>	<u>Total</u>
<u>Work</u>			
Someone in household lost some or all days	6%	2%	8%
Able to get to work	1	31	32
<u>Expense</u>			
Extra cost or loss	6	3	9
Strike profitable to me	*	2	2
<u>Personal</u>			
Inconvenience - long hours of travel	20	17	37
Couldn't shop, visit or children-school	2	8	10
Health impaired	<u>2</u>	<u>*</u>	<u>2</u>
	37%	63%	100%

Effect of Strike on Shoppers

When respondents who regularly use the transit system for shopping were asked about the effect of the strike, one out of five of the suburbanites said the effect had been large.

Strike had large effect	20%
Strike had little effect	80%

About one-third put off entirely the shopping that would have been done using the city transit system. Of the two-thirds who did some of this shopping during the strike, only one-sixth of the group -- or one-tenth of the total shoppers -- managed to do all the shopping in their usual place in New York City. About half of the shopping activity that would have come to

the city from the suburbs was diverted to local suburban stores during the strike.

Put off shopping entirely	34%
Put off some shopping	49%
Did not put off any shopping	17%
	<u>100%</u>
<u>Total who did some shopping</u>	
<u>During strike:</u>	66%
In usual place	10%
Usual place & elsewhere	7%
Elsewhere	45%
Undetermined	4%

Effect of Strike on
Other-Purpose Users

Educational and recreational purposes are slightly more important to suburbanite regular other-purpose users than to other-purpose users in the four large boroughs but the general pattern is similar, with social activities heading the list.

Social	44%
Recreational	31
Educational	26
Medical	2
Other	7
Not Determined	2

NOTE: Adds to more than 100% because of multiple mentions

Suburban regular transit users for non-work/non-shop purposes were in younger and higher-income households than those in the four large boroughs. Fifty-four per cent were under 35 compared to 45% in the four large boroughs. Thirty-nine per cent had a household income of over \$9,000 compared to 27% in the four large boroughs.

Age:

Under 35	54%
35-54	30
Over 54	16
	<u>100%</u>

Household:

Under \$3,000	11%
\$3,000-\$9,000	46
Over \$9,000	39
Not Determined	4
	<u>100%</u>

Personal and social activity normally done by mass transit was put off slightly more often by suburbanites than by city residents. Fifty-three per cent of regular other-purpose users in the suburbs put off their activity during the strike compared to 44% in the four large boroughs. Only 15% continued as usual compared to 25% in the boroughs.

Put off other-purpose activities entirely	53%
Put off some other-purpose activities	32
Did not put off any other-purpose activities	15
	<u>100%</u>

More than a quarter of these suburban users of city transit managed to come to the usual places during the strike for which they had previously used the subway or bus. Less than 20% of the social, recreational and personal affairs activity normally coming to the city from the suburbs was diverted to local facilities.

Total Continuing Other-Purpose Activity During the Strike 47%

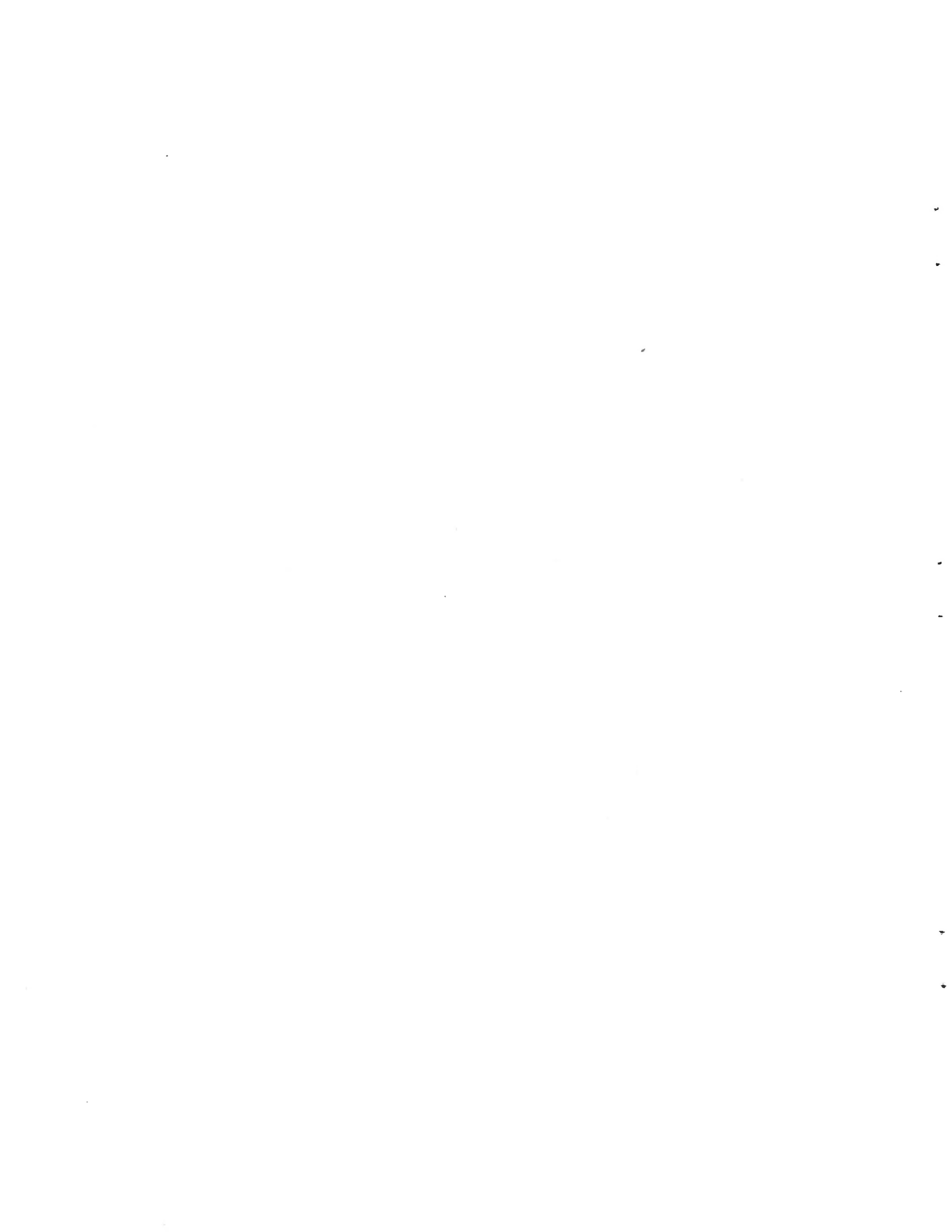
As usual	28%
As usual and changed destination	5
Changed destination entirely	14

About three out of four suburban regular users of the transit system for other purposes than working or shopping said that there had been little or no effect on their respective households due to the strike.

Strike had large effect	24%
Strike had little effect	76%

After the strike 5.0% of the suburban regular users of the New York City mass transit system discontinued this use. This was true for 4.9% of the worker households, 7.2% of the shopper households, and 2.8% of the other-purpose households.

* * * * *



APPENDIX A
SAMPLE STATISTICS

SAMPLE STATISTICS

Scope of Work

The survey encompassed the four large counties of New York City -- Manhattan, Bronx, Brooklyn, and Queens, and the seven surrounding counties -- Richmond, Nassau, Westchester, Bergen, Essex, Hudson and Union.

In the densely populated city boroughs, a telephone sample of 21,520 households, or 0.8 per cent of the estimated 2.7 million households, yielded 12,075 completed interviews of which 6,824 households contained at least one member who was a regular user of the New York City transit system. A regular user was defined as a person who uses the transit system at least three times a week for either work, shop or other-purpose trips. That is, 56.5 per cent of the households in the four counties of New York City contain at least one regular user.

The following table illustrates the total number of households interviewed by telephone and the number of regular mass transit user households found in each of the four boroughs.

<u>County</u>	<u>Telephone Interviews</u>					
	<u>Initial Sample</u>	<u>Number Not In Service</u>	<u>Not at Home After 3 Calls</u>	<u>Refusals and Incompletes</u>	<u>Completions-Per Cent</u>	
Manhattan	5,200	551	594	1,110	2,945	56.6
Bronx	4,000	368	833	664	2,135	53.4
Queens	5,040	398	602	920	3,120	61.9
Brooklyn	<u>7,280</u>	<u>524</u>	<u>1,652</u>	<u>1,229</u>	<u>3,875</u>	<u>53.2</u>
TOTAL	21,520	1,841	3,681	3,923	12,075	56.1

Telephone Interviews

<u>County</u>	<u>Screening Interviews</u>	<u>Non-Regular Transit User Households</u>	<u>Regular Mass Transit User Households (3 Times/Week)</u>	<u>Per Cent</u>
Manhattan	2,945	1,109	1,836	62.3
Bronx	2,135	920	1,215	56.9
Queens	3,120	1,588	1,532	49.1
Brooklyn	<u>3,875</u>	<u>1,634</u>	<u>2,241</u>	<u>57.8</u>
	12,075	5,251	6,824	56.5

The personal interview methodology produced 2,126 interviews in total with 887 in Manhattan, 409 in Bronx, 136 in Queens and 694 in Brooklyn; 1,736 of these households met the 1 time/week user definition.

Suburban interviews in the seven adjacent counties were conducted in an attempt to locate 700 regular users of the New York City transit system (100 from each county). The results of this interviewing in each of the seven counties are summarized as follows:

<u>County</u>	<u>Initial Sample</u>	<u>Number Not In Service</u>	<u>Not at Home After 3 Calls</u>	<u>Refusals and Incompletes</u>	<u>Completions-Per Cent</u>	
Bergen	753	38	233	61	421	55.9
Essex	2,379	188	882	211	1,098	46.1
Hudson	1,016	85	369	79	483	47.5
Nassau	572	32	178	39	323	56.4
Richmond	439	21	164	40	214	48.7
Union	1,364	109	430	141	684	50.1
Westchester	<u>1,215</u>	<u>54</u>	<u>295</u>	<u>59</u>	<u>453</u>	<u>37.3</u>
TOTAL	7,738	527	2,551	630	3,676	47.5

<u>County</u>	<u>Screening Interviews</u>	<u>Non-Regular Transit User Households</u>	<u>Regular Mass Transit User Households (1 Time/Week)</u>	<u>Per Cent</u>
Bergen	421	321	100	23.7
Essex	1,098	998	100	9.9
Hudson	483	378	105	21.8
Nassau	323	232	91	28.1
Richmond	214	107	107	50.0
Union	684	587	97	14.2
Westchester	<u>453</u>	<u>355</u>	<u>98</u>	<u>21.7</u>
TOTAL	3,676	2,978	698	19.0

The numbers of work, shop and other-purpose interviews may be used for calculating the reliability of the reported percentages.

Basic Survey: Four Large Boroughs

<u>Borough</u>	<u>Regular Mass Transit User Households (3 Times/Week or More)</u>	<u>Number of Users in User Households by Trip Purpose</u>			<u>Total Users</u>
		<u>Work</u>	<u>Shop</u>	<u>Other Purpose</u>	
Brooklyn	2,241	2,026	339	424	2,789
Bronx	1,215	1,075	194	213	1,482
Manhattan	1,836	1,545	327	529	2,401
Queens	<u>1,532</u>	<u>1,396</u>	<u>155</u>	<u>185</u>	<u>1,736</u>
TOTAL	6,824	6,042	1,015	1,351	8,408

Four Large Boroughs - Personal Interviews

<u>Borough</u>	<u>Regular Mass Transit User Households (1 Time/Week or More)</u>	<u>Number of Users in User Households by Trip Purpose</u>			<u>Total Users</u>
		<u>Work</u>	<u>Shop</u>	<u>Other Purpose</u>	
Brooklyn	547	478	101	130	709
Bronx	365	344	73	75	492
Manhattan	730	642	97	186	925
Queens	<u>94</u>	<u>81</u>	<u>16</u>	<u>13</u>	<u>110</u>
TOTAL	1,736	1,545	287	404	2,236

Suburban Interviews

<u>County</u>	<u>Regular Mass Transit User Households (1 Time/Week or More)</u>	<u>Number of Users in User House-</u>			<u>Total Users</u>
		<u>holds by Trip Purpose</u>	<u>Work</u>	<u>Shop</u>	
Essex	100	66	16	28	110
Bergen	100	91	6	12	109
Hudson	105	76	22	19	117
Union	97	77	6	20	103
Richmond	107	95	9	13	117
Nassau	91	85	4	10	99
Westchester	<u>98</u>	<u>82</u>	<u>11</u>	<u>10</u>	<u>103</u>
TOTAL	698	572	74	112	758

Sample Error

In this study 56.5% of the four-borough households interviewed had at least one member who was a regular user of the New York City transit system. The table below shows that for the sample size of 12,000 there are 95 chances out of 100 that the true figure is within .8 to .9 of this or somewhere between 55.6% and 57.4%.

Since the worker sample in the four large boroughs had some 6,000 households and the reported percentage of those home the entire duration of the strike is 15%, this table shows that the figure is within plus or minus 1.0 percentage points, or between 14% and 16%.

The error for perceived effect of strike for a sub-sample of this survey such as Manhattan below 60th Street residents is plus or minus 4.5 percentage points since the reported percentage is in the 50% area. This is arrived at by calculating that 8% of the workers live in Manhattan below 60th Street or roughly 500 of the sample and then following this line on the table across to the reported percentage being tested.

The personal interview survey results have an error of less than 2.5 percentage points.

The suburban survey results have an error of less than 4.0 percentage points.

Sampling Errors of Percentages
For Responses

<u>Number of Interviews</u>	<u>Reported Percentages</u>				
	<u>5 or 95</u>	<u>10 or 90</u>	<u>20 or 80</u>	<u>30 or 70</u>	<u>50</u>
12,000	.4	.5	.7	.8	.9
6,800	.5	.8	1.0	1.1	1.2
6,000	.6	.8	1.0	1.1	1.3
5,000	.6	.8	1.1	1.3	1.4
2,500	.9	1.2	1.6	1.8	2.0
2,000	1.0	1.3	1.8	2.0	2.2
1,500	1.1	1.5	2.1	2.4	2.6
1,000	1.4	1.9	2.5	2.9	3.2
700	1.6	2.3	3.0	3.5	3.8
500	1.9	2.7	3.6	4.1	4.5
300	2.5	3.5	4.6	5.3	5.8
100	4.4	6.0	8.0	9.2	10.0
70	5.2	7.1	10.0	11.0	12.0

The sampling error measures the sampling variability; that is, the variations that might occur by chance because only a sample of the population is surveyed. For all items the chances are 95 in 100 that the value being estimated lies within a range equal to the reported percentages plus or minus the sampling error.

In addition to the sampling error the total error involved in specific estimates includes reporting and non-response errors.

Reporting and Non-Response Error

Two results of two specific controls on reporting errors are shown below. One control is gained by matching responses from workers about themselves with the answers respondents gave about other workers in the household. The other compares answers before March 3rd, about midway in the interviewing, with those after March 3rd to see whether or not memory decay or interviewer learning is seriously affecting what is reported by respondents.

The comparisons indicate that those potential sources of error are at a minimum.

<u>Job Attendance</u>	<u>Respondent Is Worker</u> Base: 61%	<u>Respondent Answering For Worker</u> Base: 39%	<u>Interview Completed</u>	
			<u>Before 3/3/66</u> Base: 50%	<u>After 3/3/66</u> Base: 50%
Worked entire period	62%	65%	64%	62%
Home first/then worked	17	16	16	17
Worked first/then home	4	6	5	6
Home entire period	17	13	15	15
Stayed away overnight	6	7	7	6
Stopped using transit system after strike	2	2	2	2
<u>Perceived Effect of Strike On Household</u>				
Strike had large effect	54	54	55	54
Strike had little effect	46	46	45	46

Strict interviewer control procedures in the timing of call and call-back were followed to minimize any error due to non-response. Individual interviewer assignments were rotated among all geographic areas and among

different time periods. Call-back procedures were randomized in the same way. The result is to insure as much as possible that the not-at-home population is not different from those contacted and reported on in the survey, and that refusals or incompletes are not unusual for any area, due to interviewer bias or to time of call.

Projectability

The basic survey is projectable to the four large borough areas. The sample shows that 56.5% of the approximately 2,700,000 households in the area had a regular user of the mass transit system before the strike or 1,525,500 regular user households. Eighty-eight and a half per cent or 1,350,000 have at least one member who is a regular work user and on the average there are 1.5 users of the transit system for work in these households or approximately 2,025,000 workers. Therefore, each 1% of the worker sample equals 20,250 workers.

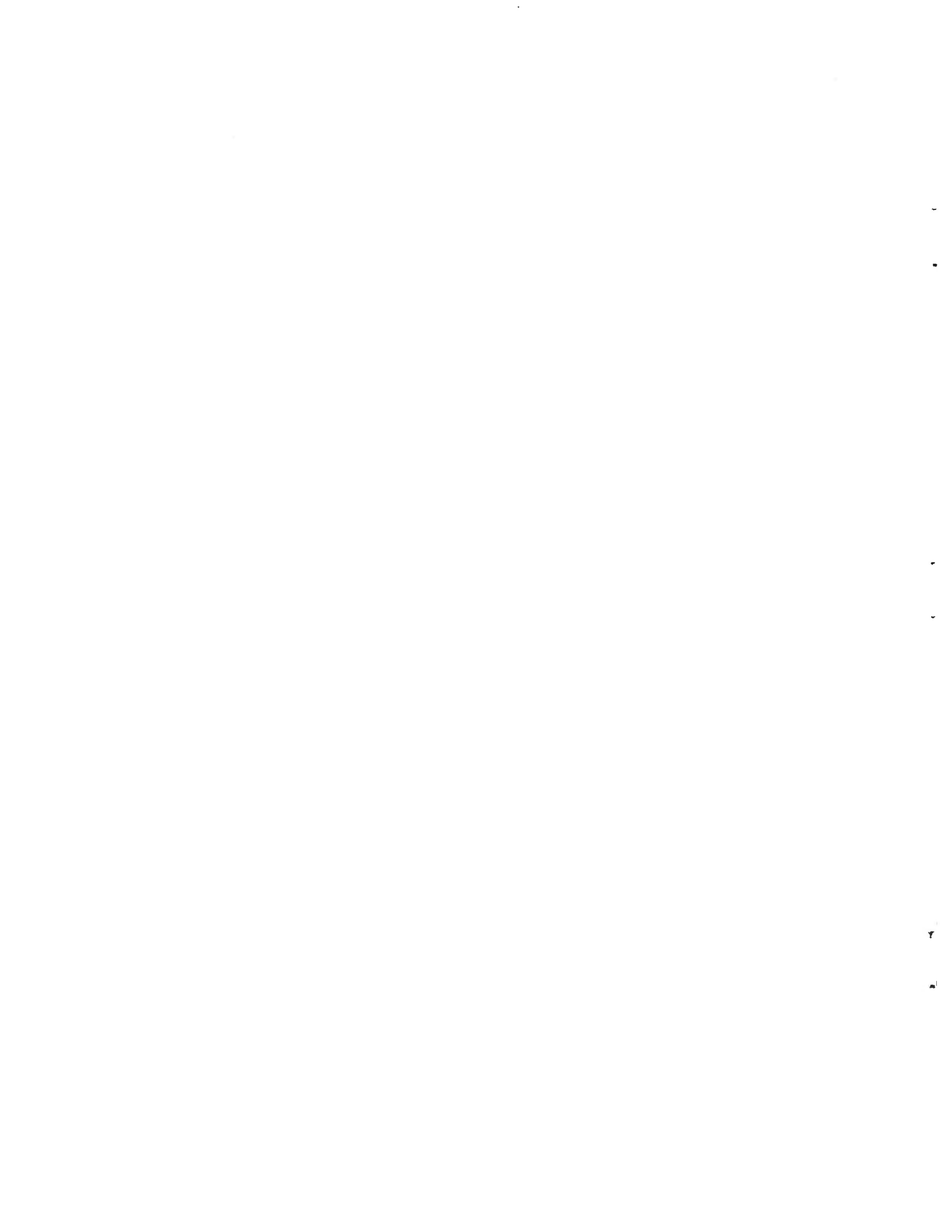
Regular shopper households accounted for 14.9% of the sample or 227,500 of the area households; therefore, each 1% of the shopper sample represents 2,275 households.

Households containing a member who used the transit system regularly for other purposes accounted for 19.8% of the sample or approximately 302,000 of the area households; therefore, each 1% of this sample is equivalent to approximately 3,020 households.

Another check on the representativeness of the sample is provided by the Journey to Work report of June, 1964 issued by the New York-New Jersey Transportation Agency which shows that 1.41 million workers in the Manhattan below 60th Street area live in the four boroughs. Virtually all use the

subway or bus for part of the journey. This survey shows a nearly identical figure; that is, 70% of the 2,025,000 workers in the four boroughs, or 1.42 million workers, have a Manhattan below 60th Street destination.

* * * * *



APPENDIX B
PROC EDURES

PROCEDURES

Interviewing commenced as quickly as possible following the transit strike in order to obtain factual information from the public, with a minimum distortion due to forgetting and/or rationalization factors. A formal contract with Day & Zimmermann was signed on January 26, 1966. Upon receipt of the contract, the following steps were undertaken:

- (1) Organizational methods and procedures for the project were established.
- (2) Sample selection procedure and process were begun.
- (3) A questionnaire was written, approved by the Transit Authority, and pretested. Minor modifications, as found necessary, were made in the questionnaire.
- (4) Interviewing headquarters were set up.
- (5) Interviewers were hired and trained.

The telephone interviewing began on February 8, 1966 and continued for 11 weeks. Personal interviewing began on March 21, 1966 and continued for 3 weeks.

As interviewing progressed, codes were developed, coding of the questionnaires proceeded and the data was punched on EDP cards.

Final coding and keypunching was completed during the 12th week of the study. Card cleaning began almost simultaneously.

All the above steps were necessary before a single table could be processed through the computer. During the period of coding, keypunching and card cleaning, the specifications, instructions for the computer were

written in order that the proper tables would result to meet the objectives of the study. Interpretation and analysis of the tables then proceeded. Most data were defined in the simplest form by computer runs. In cases where these data were too fine, consolidations of tables were required to observe distinguishable differences in behavioral patterns.

Sample Selection

The telephone sample of households throughout the survey area was selected using a scientifically random method. With the use of Rand's "Million Random Digits," we selected three sets of digits which provided a method for randomly choosing:

- (1) The page number of the telephone book on which the sample household was located.
- (2) The section of the page (each page was divided in half and each column was assigned a number from 1 to 8, in reading fashion) on which the sample household was located.
- (3) The nth telephone number in the column was selected as the sample point.

Using the above process, a sample of telephone households was chosen for each of the four boroughs in New York City, and the suburban areas studied.

To verify the quality of each interviewer's work and to insure that proper interviewing methods were maintained throughout the eleven weeks of the survey a monitoring system was installed. This enabled the supervisor to listen to any call being placed.

Interviewing was conducted during the time segments from 9-12, 12-3, 3-6 and 6-9 each weekday except Saturday night and Sunday morning.

Rather than have each interviewer call one county continually, a system of rotation was established thereby allowing the interviewer to cover the four large boroughs and the seven suburban boroughs, at least once, in the course of each day.

On Thursday, March 3rd, CBS television showed the Barrington staff at work at the Hotel Piccadilly. This coverage did make it easier for interviewers to establish rapport thereafter but did not affect the survey results.

Questionnaire

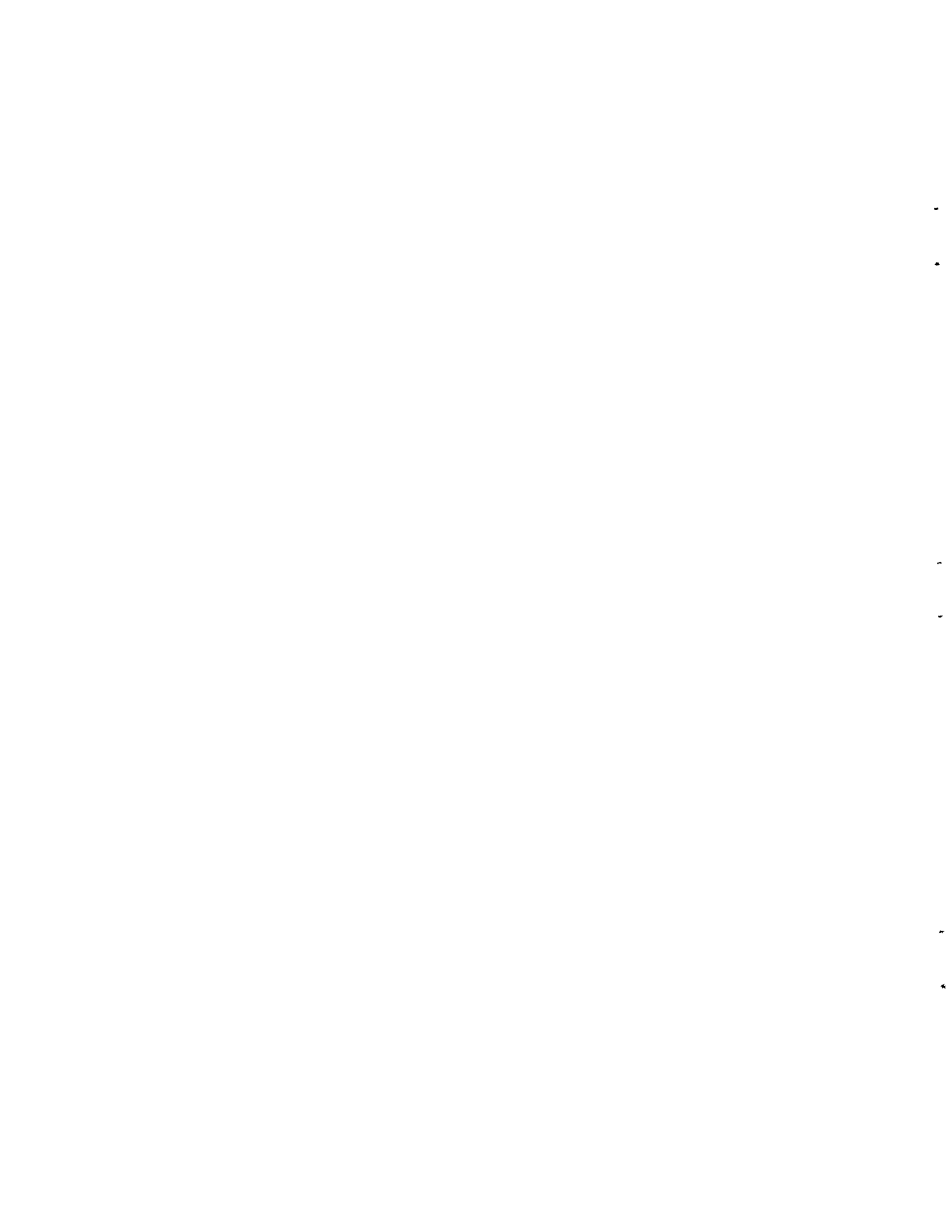
The interview was conducted using a questionnaire based upon the following topics and subtopics:

- (1) Effect of strike on individual
 - Very large effect, large effect, small effect, no effect
- (2) Nature of effect of strike
 - Work, shopping, recreation, education, social, family, personal
- (3) Transportation Behavior: trip purpose, modes, origin, destination
 - Pre-strike
 - Strike period
 - Post-strike
- (4) Adaptation during strike: car, walk, taxi, stayed away overnight
 - First Adaptation
 - Second Adaptation
 - Third Adaptation
- (5) Post-strike reversion to previous patterns versus new modes or routes
- (6) Demographic Data: household identification and respondent characteristics
 - Age, sex, occupation, income

Due to the high incidence of Spanish-speaking people in New York City, the interview was written and conducted in both Spanish and English. In addition, interviews were conducted in French, German and Italian.

The substantive contents of the questionnaire, omitting administrative instructions to the interviewer, are reproduced on the following pages.

* * * * *



APPENDIX C

QUESTIONNAIRE

NEW YORK TRANSIT AUTHORITY QUESTIONNAIRE

Hello. My name is _____ of Barrington and Company, a New York City research firm. We are doing a survey about the recent bus and subway strike in New York.

May I ask you a few questions about your experiences during the strike?

Before the strike, how many members of your household took a New York City bus or subway to work?

How many of these people are home now?

Which one of these people is the major wage earner in your household?

INTERVIEW IN ORDER OF PREFERENCE:

MAJOR WAGE EARNER WHO USES THE TRANSIT SYSTEM
HOUSEWIFE WHO USES TRANSIT SYSTEM TO GO TO WORK
NEXT OLDEST PERSON WHO USES TRANSIT SYSTEM TO GO TO WORK
PERSON WHO ANSWERED PHONE IF NO ONE AT HOME USES TRANSIT
SYSTEM TO GO TO WORK

How much would you say the strike affected your household? Did it have: no effect, a small effect, a large effect, a very large effect?

Why do you say this?

Now, before the strike:

Which bus line or subway did you usually take to go to work?

At which bus stop or subway station did you get on?

At what hour did you usually get on the bus or subway to go to work?

To which part of the city did you go?

At which bus stop or subway station did you get off?

At what hour of the day did you usually get on the bus or subway to travel home from work?

Did you travel this way to work at least three times per week?

How long did it usually take to get to work?

Before the strike, how much did it cost you to get from home to work, that is, one way?

As you know, the strike lasted for 2 weeks. Let's talk about the first week of the strike.

Did you go from home to work in the first week of the strike?

IF YES

What day did you first go to work?

Because you couldn't use the bus or subway, how did you get to work that first time?

IF BY CAR

Whose car was it?

How long did the trip to work take you?

How much did the trip to work (ONE WAY) cost you?

Did you return home that same day?

IF YES

How did you get home that same day?

IF BY CAR

Whose car was it?

How long did the trip home take you?

How much did the trip home (ONE WAY) cost you?

Later on that week, did you stay away from home overnight because of the strike?

IF YES

What day did you stay away?

How many nights did you stay away?

Where did you stay?

How much did it cost you per night to stay away?

IF NO

How many nights did you stay away?

Where did you stay?

What did it cost you per night to stay away?

What day did you finally get home?

How did you get home?

IF BY CAR

Whose car was it?

How long did the trip home take you?

How much did the trip home (ONE WAY) cost you?

During the first week of the strike, did you try any different way of going to work?

IF YES

What day did you first try this way of going to work?

How did you get to work that day?

IF BY CAR

Whose car was it?

How long did the trip to work take you?

How much did the trip to work (ONE WAY) cost you?

IF NO

Did you keep going to work or did you stay home some of the time?

IF STAYED HOME

What days did you stay home?

During the first week of the strike, did you try any different way of returning home?

IF YES

What day did you first try that way of returning home?

How did you get home that day?

IF BY CAR

Whose car was it?

How long did the trip home take you?

How much did the trip home (ONE WAY) cost you?

During the second week of the strike, did you try any different way of going to work?

IF YES

What day did you first try this way of going to work?

IF ON WEDNESDAY OR BEFORE

How did you get to work that day?

IF BY CAR

Whose car was it?

How long did the trip to work take you?

How much did the trip to work (ONE WAY) cost you?

IF NO

Did you keep going to work or did you stay home some of the time?

IF STAYED HOME

What days did you stay home?

In the second week of the strike, did you stay away from home overnight because of the strike?

IF YES

What day did you stay away?

How many nights did you stay away?

Where did you stay?

How much did it cost you per night to stay away?

In the second week of the strike, did you try any different way of returning home?

IF YES

What day did you first try that way of returning home?

IF ON WEDNESDAY OR BEFORE

How did you get home that day?

IF BY CAR

Whose car was it?

How long did the trip home take you?

How much did the trip home (ONE WAY) cost you?

Did you go from home to work in the second week of the strike?

IF YES

What day did you first go to work?

Because you couldn't use the bus or subway, how did you get to work that first time?

IF BY CAR

Whose car was it?

How long did the trip to work take you?

How much did the trip to work (ONE WAY) cost you?

Did you return home that same day?

IF YES

How did you get home that same day?

IF BY CAR

Whose car was it?

How long did the trip home take you?

How much did the trip home (ONE WAY) cost you?

Later on that week, did you stay away from home overnight because of the strike?

IF YES

What day did you stay away?

How many nights did you stay away?

Where did you stay?

How much did it cost you per night to stay away?

IF NO

How many nights did you stay away?

Where did you stay?

What did it cost you per night to stay away?

What day did you finally get home?

How did you get home?

IF BY CAR

Whose car was it?

How long did the trip home take you?

How much did the trip home (ONE WAY) cost you?

During the second week of the strike, did you try any different way of going to work?

IF YES

What day did you first try this way of going to work?

IF ON WEDNESDAY OR BEFORE

How did you get to work that day?

IF BY CAR

Whose car was it?

How long did the trip to work take you?

How much did the trip to work (ONE WAY) cost you?

IF NO OR AFTER WEDNESDAY

Did you keep going to work or did you stay home some of the time?

IF STAYED HOME

What days did you stay home?

In the second week of the strike, did you try any different way of returning home?

IF YES

What day did you first try that way of returning home?

IF ON WEDNESDAY OR BEFORE

How did you get home that day?

IF BY CAR

Whose car was it?

How long did the trip home take you?

How much did the trip home (ONE WAY) cost you?

As a result of the strike, do you go to work the same way as you did before the strike?

How do you go to work now?

Which bus line or subway do you take now?

At which bus stop or subway station do you get on?

To which part of the city do you go?

At which bus stop or subway station do you get off?

Does it cost more or less now to go from home to work than it did before the strike?

How much more or less does it cost?

Does the trip from home to work take longer or shorter than before the strike?

How much longer or shorter does it take?

Do you travel this new way to work at least three times a week?

Going to or from work now, do you get on the bus or subway at a different time than before the strike?

At what hour of the day do you now get on the bus or subway to go to work?

At what hour of the day do you now get on the bus or subway to travel home from work?

What kind of work do you do?

Is your work full time or part time?

Do you work for yourself or somebody else?

What do they make or do where you work?

IF CITY, STATE OR FEDERAL GOVERNMENT MENTIONED

For which department do you work?

How many other members of your household (besides yourself) take a N.Y.C. bus or subway to get to work?

FOR EACH OTHER WORKER WHO USES TRANSIT SYSTEM

How many days did he stay home from work because of the strike?

Does he go to work now the same way as he did before the strike?

How does he go to work now?

OTHER HOUSEHOLD MEMBER'S USE OF BUS OR SUBWAY TO GO TO WORK

(SAME QUESTIONS AS FOR RESPONDENT WORKER)

Shopping

Before the strike, did you yourself use the N.Y.C. bus or subway system to go shopping three times a week or more, that is, for food, clothing and/or things for the house?

Before the strike, did anyone else in your household use the bus or subway to go shopping three times a week or more, that is, for food, clothing and/or things for the house?

Now, before the strike:

Which bus line or subway did you usually take to go shopping?

At which bus stop or subway station did you get on?

At what hour on a weekday did you usually get on the bus or subway to go shopping?

To which part of the city did you go?

At which bus stop or subway station did you get off?

At what hour on a weekday did you usually get on the bus or subway to travel home from shopping?

How long did it usually take to get to the shopping district (one way)?

How much did it cost you to go shopping, that is, one way?

And, during the strike:

Now, because you couldn't use the bus or subway during the strike, did you put off some of your shopping until later?

Because you couldn't use the bus or subway during the strike, did you do any shopping in a different place?

To which part of the city did you go?

How did you get there?

How long did the trip take you?

How much did it cost you to get to the shopping district?

Because you couldn't use the bus or subway during the strike, did you use some other way to get to some of your usual stores in the shopping district?

How did you get there?

How long did the trip take you?

How much did it cost you to get there?

As a result of the strike:

Do you now, as a result of the strike, go shopping the same way as you did before the strike?

How do you get to the stores where you do your shopping now?

Which bus or subway do you take now?

At which stop or station do you get on?

To which part of the city do you go now?

At which stop or station do you get off?

Does the trip take you longer or shorter than it did before the strike?

How much longer or shorter does it take you?

Does it cost you more or less now to go shopping than it did before the strike?

How much more or less does it cost you?

Do you use the bus or subway to go shopping more or less often than you did before the strike?

Do you travel this way now at least three times a week?

Before the strike, how many other members of your household used the N.Y.C. bus or subway system to go shopping three times a week or more, that is, for food, clothing and/or things for the house?

Do you usually go shopping separately or together?

Because he couldn't use the bus or subway during the strike, did he

Put off some shopping 'til later?

Shop in a different place?

Or go to his usual stores in some other way?

As a result of the strike, does he go shopping in the same way as he did before the strike?

How does he go shopping now?

Other Purposes

Before the strike, did you yourself use the N.Y.C. bus or subway for any other purposes three times a week or more, that is, social, recreational, school, personal, etc.?

Before the strike, did anyone else in your household use the bus or subway for other purposes three times a week or more?

Now, before the strike:

What was the main purpose for which you used the bus or subway?

Which bus line or subway did you usually take for this other purpose?

At which stop or station did you get on?

At what hour on a weekday did you usually get on the bus or subway for this other purpose?

To which part of the city did you go?

At which stop or station did you get off?

At what hour on a weekday did you usually get on the bus or subway to travel home from this other purpose?

How long did it usually take you to travel for this other purpose?

Before the strike, how much did it cost you to travel for this other purpose, that is, one way?

And, during the strike:

Because you couldn't use the bus or subway during the strike, did you do this (main other purpose) less often?

Because you couldn't use the bus or subway during the strike, did you do this in a different place?

To which part of the city did you go?

How did you get there?

How long did the trip take you?

How much did it cost you to get there?

Because you couldn't use the bus or subway during the strike, did you use some other way to get to the place where you usually did this (main other purpose)?

