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A Socio-Economic Study of Aviation
in the Three-County Lansing Area

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BACKGROUND

The Michigan Aeronautics Commission has participated in a home interview survey conducted in the three-county Lansing, Michigan metropolitan area (also a U.S. Census Standard Metropolitan Statistical Area) by the Tri-County Regional Planning Commission.

Last year, in a poll conducted on a nationwide basis for Trans-World Airlines, 38% of the population was found to have been airline passengers. This figure has been confirmed in the Lansing area. The Tri-County Survey found that 38.9% of the interviewees have been airline passengers.

In addition, it was found in the Tri-County area that 58% of the interviewees had been air passengers in an airplane that was owned by one of following: a company, a private person, an airline, or the military.

The purpose of this report is to examine and compare the characteristics of the air passengers in the Tri-County area with those of the non-air passengers as a means of compiling a "profile" of the "typical" air passengers. This "profile" would be useful in formulating forecasts of aviation needs in the Tri-County area and might be applied in other metropolitan areas of the state.

Before examining these individual statistics, a review of the survey methodology should be detailed.

SURVEY METHODOLOGY

The primary methodology employed in the survey was that of the home interview. The 3,388 subject households in the survey were selected from the meter lists of utility firms servicing the Tri-County area.

It was found that 58% or 1,960 of the 3,388 interview subjects had been an air passenger. These subjects had answered "yes" to at least one of the items

in the following question:

1. Have you every flown in an airplane that was owned by:
 - A. a private person (26%) ✓
 - B. a company (9%)
 - C. an airline (39%) ✓
 - D. the military (9%) ✓

The percentages in parenthesis are based on the total number of interviews, 3,328. The total of the above percentages is higher than 58% because some of the respondents had answered "yes" to more than one item.

To the 42%, or 1,428 subjects, who had not been an air passenger, the following two questions were asked:

2. Would you say you have never flown because:
 - A. it costs too much (14.8%)
 - B. you haven't needed to fly (73.2%)
 - C. flying is unsafe (18.3%)
 - D. flying is inconvenient (6.0%)
3. Do you think you will ever fly in an airplane owned by:
 - A. a private person (9.5%)
 - B. a company (8.1%)
 - C. an airline (49.2%)
 - D. no desire to fly (33.2%)

The percentages in parenthesis in each question do not total 100% of the 1,428 subjects who had not been an air passenger, also because of a "yes" to more than one item.

As the percentages illustrate, the major reason for not flying was lack of a need to fly. Their expectations of future flight activity concern mainly air-line travel.

Once the foregoing statistics were compiled on the percentages or pure numbers of air passengers vs. non-air passengers, an analysis was made of the socio-economic characteristics of both groups.

SOCIO-ECONOMIC PROFILES

In correlating the number of air travelers and non-air travelers on a socio-

economic basis, a large number of variables were examined. These included education, income, place of residence and occupation.

The variables were examined in two groups: (1) air passengers; and, (2) non-air passengers.

Before comparing these groups, the population of three-county Lansing area should be noted:

TABLE I
POPULATION OF TRI-COUNTY AREA

<u>Area</u>	<u>1964 Population</u>	<u>1964 Population</u>	<u>% of Tri-County Area</u>	
INGHAM COUNTY	226,500		70.4	
East Lansing		37,800		11.7
Lansing		122,000		37.9
Mason		5,000		1.6
Meridian Twp.		15,700		4.9
Remainder of County		46,000		14.3
EATON COUNTY	53,500		16.6	
Charlotte		8,100		2.5
Delta Township		10,400		3.2
Eaton Rapids		4,300		1.3
Grand Ledge		5,500		1.7
Remainder of County		25,200		7.8
CLINTON COUNTY	42,000		13.0	
DeWitt Township		7,400		2.3
St. Johns		5,900		1.8
Remainder of County		28,700		8.9
TOTAL OF TRI-COUNTY AREA	322,000	322,000	100.0	100.0

SOURCE: Health Statistics & Evaluation Center,
Michigan Department of Public Health,
August, 1965

The comparisons of the air passenger group with that of the non-air passenger group that follows will consider each variable studied. Then, an attempt will be made to draw a "profile," or composite picture of both the "typical" air passenger and the typical non-air passenger in the three - county Lansing area.

TABLE 2
PLACE OF RESIDENCE OF SURVEYED HOUSEHOLDS

<u>Area</u>	<u>% Those Who Have Flown of Tri-County Area</u>	<u>% Those Who Have Not Flown of Tri-County Area</u>
INGHAM COUNTY	73.8	68.1
East Lansing	8.4	1.7
Lansing	40.7	41.7
Mason	1.4	1.9
Meridian Twp.	5.3	3.4
Remainder of County	18.0	19.4
EATON COUNTY	17.1	19.5
Charlotte	2.6	4.1
Delta Township	3.7	3.3
Eaton Rapids	1.8	1.7
Grand Ledge	2.1	1.8
Remainder of County	4.9	8.6
CLINTON COUNTY	9.1	12.4
DeWitt Township	2.0	2.2
St. Johns	1.3	1.8
Remainder of County	5.8	8.4

SOURCE: Tri-County Regional Study,
Tri-County Regional Planning Commission,
1966

TABLE 3
PERCENTAGE OF AIR PASSENGERS BY PLACE OF RESIDENCE

<u>Area</u>	<u>Those Who Have Flown As a % of Place of Residence</u>	<u>Those Who Have Not Flown As a % of Place of Residence</u>
INGHAM COUNTY	59.8	40.2
East Lansing	87.2	13.8
Lansing	57.2	42.8
Mason	50.9	49.1
Meridian Twp.	68.2	31.8
EATON COUNTY	54.7	45.3
Charlotte	45.9	54.1
Delta Township	60.8	39.2
Eaton Rapids	60.0	40.0
Grand Ledge	61.2	38.8
CLINTON COUNTY	50.1	49.9
DeWitt Township	54.9	45.1
St. Johns	50.0	50.0

SOURCE: Tri-County Regional Study,
Tri-County Regional Planning Commission,
1966

Tables 2 and 3 explore the relationship between air travel and place of residence. Table 2 shows the percentage of the total Tri-County air passenger and non-air passenger groupings in the larger population centers within each of the three counties.

Table 3 shows the percentage of residents within each of the Table 2 areas in each category - air passengers and non-air passengers. It is the total of these groups which have 58% - 42% ratio of air passengers to non-air passengers.

One criteria used to compare air passengers with non-air passengers is that of income. Following are the comparisons of these two groups by income:

TABLE 4
INCOME LEVEL OF RESPONDENTS

<u>Income Group</u>	<u>% of Those Who Have Flown</u>	<u>% of Those Who Have Not Flown</u>
1. Without Income	1%	2%
2. Under \$3,000	8%	17%
3. \$3,000-\$4,999	10%	12%
4. \$5,000-\$6,999	18%	27%
5. \$7,000-\$9,999	28%	25%
6. \$10,000-\$14,999	24%	14%
7. \$15,000-\$24,999	9%	2%
8. \$25,000 and Over	2%	1%

SOURCE: Tri-County Regional Study,
Tri-County Regional Planning Commission,
1966

TABLE 5
CATEGORIES BY INCOME LEVEL

<u>Income Group</u>	<u>Those Who Have Flown As a % of Income Level</u>	<u>Those Who Have Not Flown As a % of Income Level</u>
1. Without Income	34%	66%
2. Under \$3,000	38%	62%
3. \$3,000-\$4,999	53%	47%
4. \$5,000-\$6,999	48%	52%
5. \$7,000-\$9,999	60%	40%
6. \$10,000-\$14,999	71%	29%
7. \$15,000-\$24,999	85%	15%
8. \$25,000 and Over	85%	15%

SOURCE: Tri-County Regional Study,
Tri-County Regional Planning Commission,
1966

Tables 4 and 5 portray the relationship of income to the incidence of air travel. Table 4 shows the percentage that each income group is of the number of total air passengers and non-air passengers. The chief difference between the two groups is that the greatest percentage of respondents in the air passenger group (52%), are found in the income groups which cover \$7,000-\$15,000, while the greatest percentage of respondents in the non-air passenger group are found in the income groups which cover \$5,000-\$10,000.

Table 5 shows the ratio, in percentage form, between air passengers and non-air passengers in each income group. Generally speaking, as the income group increases, so does the percentage of respondents in the air passenger group.

The age of the respondents was another basis for comparison between the air passenger and non-air passenger groups. Tables 6 and 7 show these relationships.

TABLE 6
AGE OF RESPONDENTS

<u>Age Group</u>	<u>% of Those Who Have Flown</u>	<u>% of Those Who Have Not Flown</u>
18-25	6%	7%
25-34	19%	18%
35-44	25%	19%
45-54	21%	18%
55-64	17%	15%
65 and Over	13%	23%
	<u>100%</u>	<u>100%</u>

SOURCE: Tri-County Regional Planning Study,
Tri-County Regional Planning Commission,
1966

TABLE 7
AGE OF RESPONDENTS

<u>Age Group</u>	<u>Those Who Have Flown As a % of Age Group</u>	<u>Those Who Have Not Flown As a % of Age Group</u>
18-25	53%	42%
25-34	59%	41%
35-44	64%	36%
45-54	61%	39%
55-64	60%	40%
65 and Over	44%	56%
	<u>58%</u>	<u>42%</u>

SOURCE: Tri-County Regional Planning Study,
Tri-County Regional Planning Commission,
1966

As Table 6 indicates, the highest percentage of respondents in the air passenger and non-air passenger groups are in the 35-44 and 65 and over age groups, respectively. Table 7 shows a greater percentage of air passengers than non-air passengers in every age group, except that of 65 and over.

Tables 8 and 9 provide the following breakdown by sex:

TABLE 8
SEX OF RESPONDENTS

<u>Sex</u>	<u>% of Those Who Have Flown</u>	<u>% of Those Who Have Not Flown</u>
Male	88%	85%
Female	12%	15%
	<u>100%</u>	<u>100%</u>

SOURCE: Tri-County Regional Planning Study,
Tri-County Regional Planning Commission,
1966

TABLE 9
SEX OF RESPONDENTS

<u>Sex</u>	<u>Those Who Have Flown a Percent of Sex</u>	<u>Those Who Have Not Flown As a Percent of Sex</u>
Male	59	41
Female	36	64

SOURCE: Tri-County Regional Planning Study,
Tri-County Regional Planning Commission,
1966

It is obvious from Table 8 that males were far more often interviewed than females and, thus, comprised the majority of both the air passenger and non-air passenger groups. It is equally as obvious from Table 9 that of the two sexes, a majority of the males and a minority of the females have been air passengers.

Tables 10 and 11 examine the influence of occupation on the incidence of air travel.

TABLE 10
OCCUPATION AS AN AIR TRAVEL FACTOR

<u>Occupation</u>	<u>% of Those Who Have Flown</u>	<u>% of Those Who Have Not Flown</u>
✓ Professional, Technical	17%	6%
Farmers and Farm Managers	3%	5%
✓ Managers, Officials and Proprietors	16%	7%
Clerical Workers	8%	6%
✓ Sales Workers	6%	3%
Craftsmen and Foremen	16%	20%
Operatives	12%	20%
Private Household Workers	---	1%
Other Service Workers	3%	6%
Farm Laborers and Foremen	1%	1%
Non-Farm Laborers	1%	2%
Not in Labor Force (Housewives, Students, Retired)	17%	23%
	<u>100%</u>	<u>100%</u>

SOURCE: Tri-County Regional Planning Study,
 Tri-County Regional Planning Commission,
 1966

TABLE 11
OCCUPATION AS AN AIR TRAVEL FACTOR

<u>Occupation</u>	<u>Those Who Have Flown As a % of Occupation</u>	<u>Those Who Have Not Flown As % of Occupation</u>
Professional and Technical	81%	19%
Farmers and Farm Managers	43%	57%
Managers, Officials and Proprietors	76%	24%
Clerical Workers	63%	37%
Sales Workers	70%	30%
Craftsmen and Foremen	52%	48%
Operatives	46%	54%
Private Household Workers	---	---
Other Service Workers	42%	58%
Farm Laborers and Foremen	25%	75%
Non-Farm Laborers	38%	62%
Not in Labor Force	51%	49%

SOURCE: Tri-County Regional Planning Study,
 Tri-County Regional Planning Commission,
 1966

As Tables 10 and 11 show, professional and managerial occupations have the highest incidence of air travel, followed to a slightly lesser degree by sales and clerical workers. This higher incidence of air travel in these occupations can probably be attributed to higher salaries and a required mobility.

Closely related to income and occupation is the educational level attained by the respondent. Tables 12 and 13 illustrate the relationship of this education factor to air travel.

TABLE 12
HIGHEST EDUCATIONAL LEVEL OF RESPONDENTS

<u>Highest Educational Level</u>	<u>% of Those Who Have Flown</u>	<u>% of Those Who Have Not Flown</u>
Elementary School Attended	2%	9%
Elementary School Graduate	9%	21%
High School Attended	15%	23%
High School Graduate	31%	30%
College Attended	18%	11%
College Graduate	<u>25%</u>	<u>6%</u>
	100%	100%

SOURCE: Tri-County Regional Planning Study,
Tri-County Regional Planning Commission,
1966

TABLE 13
HIGHEST EDUCATIONAL LEVEL OF RESPONDENTS

<u>Highest Educational Level</u>	<u>Those Who Have Flown As A % Of Educational Level</u>	<u>Those Who Have Not Flown As A % Of Educational Level</u>
Elementary School Attended	27%	73%
Elementary School Graduate	39%	61%
High School Attended	46%	54%
High School Graduate	58%	42%
College Attended	68%	32%
College Graduate	82%	18%

SOURCE: Tri-County Regional Planning Study,
Tri-County Regional Planning Commission,
1966

Tables 12 and 13 show the increase in air travel as the educational level increases. This may also be attributed to the higher incomes that correlate to a higher level of education.

A number of factors were examined, under the general category of "household data." The first of the factors is whether the respondent owns or rents. This is studied in Tables 14 and 15.

TABLE 14
OWNERSHIP VERSUS RENTAL OF RESIDENCE

<u>Ownership vs. Rental</u>	<u>% of Those Who Have Flown</u>	<u>% of Those Who Have Not Flown</u>
Own	81%	85%
Rent	19%	15%
	100%	100%

SOURCE: Tri-County Regional Planning Study,
Tri-County Regional Planning Commission,
1966

TABLE 15
OWNERSHIP VERSUS RENTAL OF RESIDENCE

<u>Ownership vs. Rental</u>	<u>Those Who Have Flown As a % Of Owners & Renters</u>	<u>Those Who Have Not Flown As a % Of Owners & Renters</u>
Own	57	43
Rent	64	36

SOURCE: Tri-County Regional Planning Study,
Tri-City Regional Planning Commission,
1966

As shown in Tables 14 and 15, owners of residences account for most of the respondents in the survey, although the ratio of those who have flown to those who have not flown is higher among renters than owners.

Tables 16 and 17 detail the kinds of buildings in which the respondents live.

TABLE 16
KIND OF BUILDING LIVED IN

<u>Kind of Building</u>	<u>% of Those Who Have Flown</u>	<u>% of Those Who Have Not Flown</u>
Single Family	85%	89%
Two Family	5%	5%
3 or More Unit Apt.	9%	4%
Trailer	1%	2%
	<u>100%</u>	<u>100%</u>

SOURCE: Tri-County Regional Planning Study,
 Tri-County Regional Planning Commission,
 1966

TABLE 17
KIND OF BUILDING LIVED IN

<u>Kind of Building</u>	<u>Those Who Have Flown As A % Of Kind Of Building</u>	<u>Those Who Have Not Flown As A % Of Kind of Building</u>
Single Family	57%	43%
Two Family	58%	42%
3 or More Unit Apt.	76%	24%
Trailer	41%	59%

SOURCE: Tri-County Regional Planning Study,
 Tri-County Regional Planning Commission,
 1966

Tables 16 and 17 show that although most of the respondents live in single family buildings, a greater percentage of apartment dwellers, as a group, are air passengers. This correlates with a higher percentage of air passengers who rent their residences.

The next "household" studies were of the market value of homes owned by respondents or the monthly rent which they pay. Tables 18 through 21 show the relationship of these factors to air travel.

TABLE 18
MARKET VALUE OF RESPONDENT'S HOME

<u>Market Value</u>	<u>% Of Those Who Have Flown</u>	<u>% Of Those Who Have Not Flown</u>
Under \$10,000	13%	28%
\$10,000-\$13,999	21%	28%
\$14,000-\$17,999	25%	21%
\$18,000-\$23,999	19%	13%
\$24,000-\$29,999	10%	5%
\$30,000 or More	<u>12%</u>	<u>5%</u>
	100%	100%

SOURCE: Tri-County Regional Planning Study,
 Tri-County Regional Planning Commission,
 1966

TABLE 19
MARKET VALUE OF RESPONDENT'S HOME

<u>Market Value</u>	<u>Those Who Have Flown As A % Of Market Value</u>	<u>Those Who Have Not Flown As A % Of Market Value</u>
Under \$10,000	38%	62%
\$10,000-\$13,999	49%	51%
\$14,000-\$17,999	61%	39%
\$18,000-\$23,999	66%	34%
\$24,000-\$29,999	73%	27%
\$30,000 and Over	75%	25%

SOURCE: Tri-County Regional Planning Study,
 Tri-County Regional Planning Commission,
 1966

TABLE 20
RENT PAID BY RESPONDENTS

<u>Monthly Rent</u>	<u>% Of Those Who Have Flown</u>	<u>% Of Those Who Have Not Flown</u>
Under \$50	5%	13%
\$50-\$69	16%	29%
\$70-\$89	15%	37%
\$90-\$99	27%	8%
\$100-\$109	10%	5%
\$110-\$129	10%	4%
\$130-\$149	8%	2%
\$150 and Over	<u>9%</u>	<u>2%</u>
	100%	100%

SOURCE: Tri-County Regional Planning Study,
 Tri-County Regional Planning Commission,
 1966

TABLE 21
RENT PAID BY RESPONDENTS

<u>Monthly Rent</u>	<u>% Of Those Who Have Flown</u>	<u>% Of Those Who Have Not Flown</u>
Under \$50	40%	60%
\$50-\$69	50%	50%
\$70-\$89	42%	58%
\$90-\$99	84%	16%
\$100-\$109	80%	20%
\$110-\$129	83%	17%
\$130-\$149	89%	11%
\$150 and Over	89%	11%

SOURCE: Tri-County Regional Planning Study,
Tri-County Regional Planning Commission,
1966

The following statistics may be stated from the results of Tables 18 - 21:

1. More than half of the homes of the respondents who have flown have a market value of \$14,000 or higher. More than half of the homes of the respondents who have not flown have a market value of less than \$14,000.
2. The higher the market value of the respondents' homes, the higher the percentage of respondents who have flown.
3. The rents paid by the respondents who have flown are slightly higher than the rents paid by the respondents who have not flown.
4. Generally, the higher the market value of the respondents' homes, the higher the percentage of respondents who have flown.

These, then, are the statistics on a number of individual items. In the following chapter, is an attempt to assemble these statistics into a "typical" resident of the Tri-County area who has flown and a "typical" resident who has not flown.

COMPOSITE PICTURES

Each of the survey items was analyzed and then composite pictures of the "typical" Tri-County area resident who has flown and the "typical" one who has not. The composites were drawn from the characteristics with the largest percentages.

The composite pictures are as follows:

TRI-COUNTY AREA RESIDENT

HAS FLOWN		HAS NOT FLOWN
City of Lansing	Place of Residence	City of Lansing
\$8,500	Income	\$7,500
40	Age	40
Male	Sex	Male
Professional & Technical	Occupation	Craftsman
High School Graduate	Education	High School Graduate
Own	Residence	Own
Single Family House	Kind of Building	Single Family House
\$16,000	Market Value	\$10,000

As the foregoing composites illustrate, the chief difference between the "typical" resident of the Tri-County area who has flown and the one who has not flown, is of a financial nature. The "typical" resident who has flown earns a \$1,000 a year more, has a more responsible position, and lives in a more expensive home than does the "typical" resident who has not flown.

CONCLUSIONS

In the past several years, various socio-economic studies have been attempted to determine the characteristics of air passengers, for a number of reasons. Chief among these reasons for airport planners is the forecasting tool that the results of a socio-economic survey would provide.

When socio-economic factors can be related to aviation activity, forecasting is facilitated and, thus, future needs can be more easily met.

The survey conducted in the Tri-County area of Lansing is an indicator of current trends in aviation among the general public. Surveys of this type have their greatest value in showing the extent of aviation acceptance among the general public in a common geographical-political area.