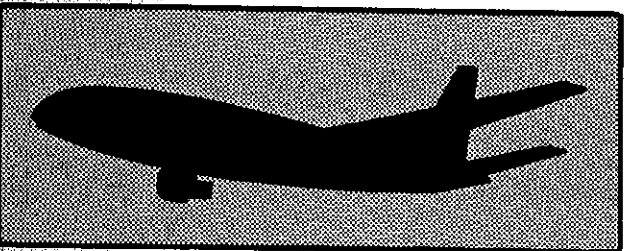
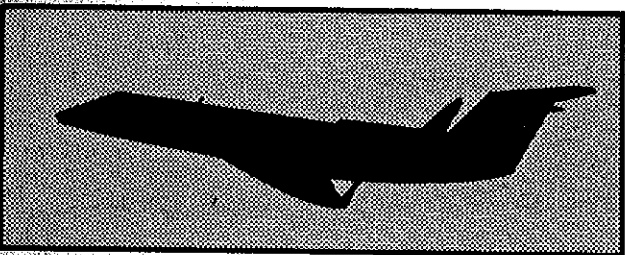
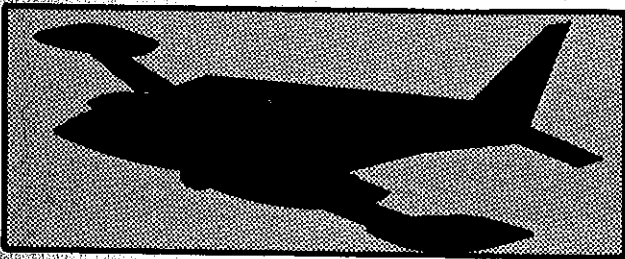
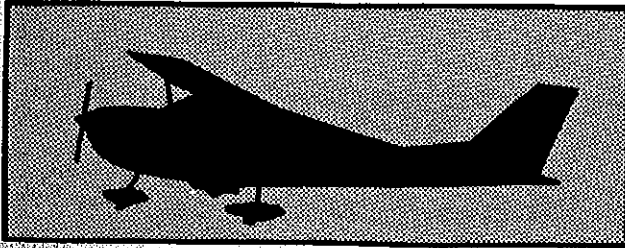


MICHIGAN DEPARTMENT OF TRANSPORTATION
Value of
ANN ARBOR MUNICIPAL AIRPORT
to the
ANN ARBOR AREA



**VALUE OF
AIRPORTS TO
THEIR
COMMUNITIES -
ECONOMIC
BENEFITS OF
AVIATION**

MICHIGAN DEPARTMENT OF TRANSPORTATION

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Value of
ANN ARBOR MUNICIPAL AIRPORT
to the
ANN ARBOR AREA

October, 1992

Bureau of Transportation Planning
Aviation Planning Unit

This report is a summary of the methodology and findings of the Value of Airports to Their Communities - Economic Benefits of Aviation study as it pertains to Ann Arbor Municipal Airport. It represents the findings and/or professional opinions of the staff of the Michigan Department of Transportation, Bureau of Transportation Planning. It is not an official opinion of either the Michigan Transportation or Michigan Aeronautics Commissions. Acceptance of this report by MDOT does not in any way constitute a commitment on the part of the State of Michigan to participate in any development depicted therein, nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

Patrick M. Nowak, Director
Michigan Department of Transportation

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INTRODUCTION TO COMMUNITY BENEFITS ASSESSMENTS

Value of Airports to Their Communities - Economic Benefits of Aviation

Though aviation is generally perceived to be an important means of transport for people and goods, few people recognize that it does much more than this. The aviation industry has developed to the point where it is now the basis of local, national and even global economies. Also not always recognized is that the impact of aviation is not restricted to just large air carrier airports. In the U.S. only 25 of over 16,000 airports are "large hubs". There are many small and medium sized commercial service airports and general aviation facilities which serve the commercial passenger needs of many Michigan residents. Most airports throughout the U.S. are very similar to Ann Arbor Municipal Airport in that they provide a wide range of general aviation activity. A great deal of aviation generated economic activity takes place at these facilities.

The Michigan Department of Transportation (MDOT) recognized these facts and set out to document the importance of airports to their communities. With support from the Federal Aviation Administration (FAA), MDOT commissioned the *Value of Airports to Their Communities - Economic Benefits of Aviation* study.

STUDY PURPOSES

The study identifies the benefits, both economic and noneconomic, that a community receives from the presence of an airport. It quantifies the economic impacts of individual airports on their local area economies in terms of economic transactions caused by the airport. These are the jobs, payroll and expenditures due to the provision and use of aviation services at the airport, the businesses that use or serve the airport and the investments made because of the airport. The impacts are assessed in terms of dollars and

jobs which an airport creates for regional economies.

The study also identifies noneconomic ways in which airports benefit the quality of life in a community. Though not quantifiable in dollar terms, these benefits improve the health, safety and welfare of residents, visitors and commercial interests.

METHODOLOGY

The original study, completed in 1989, undertook detailed studies of 32 Michigan airports, comprising a representative cross section of airports in the state. From this study a methodology was developed and validated which allows an explanation of how the residents and business interests of an airport service area benefit from that facility. As the transportation system in Michigan does not always mirror national indicators, special attention was paid to factors needed to assure that the methodology was specific to the state and its communities.

Two characteristics of the methodology bear special explanation. The first of these is the concept of "total benefits". Total benefits are equal to the sum of all economic and noneconomic benefits. This study considers both types to be equally important.

The second characteristic of this methodology is the concept of "conservative realism". In the study, the economic impact calculations included only those impact types that can be quantified and attributed to the airport in a credible manner. The realism evoked by this concept makes, in a sense, the impact values somewhat conservative. In the case of Ann Arbor Municipal Airport a significant number of airport dependent firms failed to indicate their payroll figures. No values were

VALUE OF ANN ARBOR MUNICIPAL AIRPORT TO THE ANN ARBOR AREA

ECONOMIC VALUES

Ann Arbor Municipal Airport (ARB) is estimated to have an impact on its service area of approximately \$32.9 million annually in total economic activity. Of this figure, approximately \$12.1 million is in household earnings. This impact is due principally to the provision and use of general aviation services.

AIRPORT CHARACTERISTICS

Ann Arbor Municipal Airport is operated by the City of Ann Arbor. It is a public use facility classified as a medium utility airport (U-4) on the Michigan Aviation System Plan. Ann Arbor Municipal Airport currently accommodates approximately 95-percent of all types of general aviation aircraft, including some small jets.

AIRPORT SERVICES

Exhibit 1 Services Offered At Ann Arbor Municipal Airport	
Aerial Photography	Car Rental
Air Ambulance	Corporate Aircraft
Air Taxi/Charter	FAA Control Tower
Aircraft Repair	Flight Instruction
Aircraft Rental	General Aviation
Aircraft Sales	Hangar Rental
Avgas Fuel Sales	Jet Fuel Sales
Avionics	Tie Downs
Banner Towing	Vending

Ann Arbor Municipal Airport offers a wide range of services including those listed in Exhibit 1. All of these services have positive economic significance to the Ann Arbor area. This is due to the creation of employment, generation of taxes and potential attraction/retention of businesses to the area.

AIRPORT FACILITIES

Ann Arbor Municipal Airport is an all

weather facility capable of handling most general aviation aircraft. The facilities present at the airport are listed in Exhibit 2.

Exhibit 2 Facilities At Ann Arbor Municipal Airport		
Runway	6/24	12/30
Length	3,500	2,800
Surface	Paved	Turf
Taxi System	FP	FP
Edge Lights	MIRL	None
REIL	Yes	No
VASI	Yes	No
Approach	NP	VIS

Notes: FP = Full Parallel; MIRL = Medium Intensity Runway Lights; REIL = Runway End Identifier Lights; VASI = Visual Approach Slope Indicator; NP = Non-precision Approach; VIS = Visual Approach

AIRPORT USE

Ann Arbor Municipal Airport currently experiences substantial general aviation use in the form of private pilots, training flights, charter and corporate operations. This results in the fleet mix of based aircraft shown in Exhibit 3 and the operational levels delineated

Exhibit 3 1992 Based Aircraft At Ann Arbor Municipal Airport	
Single Engine	173
Multi Engine	30
Jet	1
Total	204

in Exhibit 4.

Total aircraft operations at the airport have remained fairly stable in recent years. Operational levels in 1991 increased by 3.0 percent over those of 1987. This trend in

Exhibit 6

Annual Aviation Related Impact of
Ann Arbor Municipal Airport

Impact Type	Amount
Direct	\$9,305,649
Indirect	\$9,601,914
Induced	\$13,989,437
Total	\$32,897,000

Exhibit 7

Sample Firms Creating Impacts At
Ann Arbor Municipal Airport

Direct Impacts	Indirect Impacts
Discount Tire, Inc.	Aeschliman Equip.
Techair	First Martin Corp.
Midwest Medflight	Schumaker & Co.
Gary's Banners, Inc.	The Systems Group
Aviation Center	Arbor Spring/Alt Lt

necessarily attributable to aviation. This study, however, assesses only the aviation related impacts.

DIRECT IMPACTS

Direct impacts comprise the value of those activities involved in providing aviation services at the airport. Exhibit 9 gives a breakdown, by type, of the estimated \$9.3 million in direct impacts. Direct payroll comprises payments to those people who work directly at the facility, or are employed by airport tenants. Capital expenditures include improvements to facilities located on the airport as well as to the airport itself. Operating expenses are local expenditures by the airport operator and tenant.

INDIRECT IMPACTS

Indirect impacts are caused by airport use in the form of expenditures by air travelers and by those firms who depend on the airport for some or all of their business.

Exhibit 8

Estimated Direct Annual Impacts At
Ann Arbor Municipal Airport

Direct Impact Type	Amount
Payroll	\$2,497,792
Capital Expenses	\$882,000
Operating Expenses	\$5,925,857
TOTAL	\$9,305,649

It is estimated that more than 56,900 visitors to the Ann Arbor area arrive via Ann Arbor Municipal Airport annually. These visitors arrive via general aviation and air taxi (air charter) services. Total visitor expenditures are estimated at \$3.3 million. Based on the proportion of visitors staying overnight (more than one day) it is estimated that the average visitor entering the region through Ann Arbor Municipal Airport, spends \$57 per trip at off airport locations. Resident users of the airport also generate impacts estimated at almost \$5,000.

The aviation related indirect economic impacts attributable to Ann Arbor Municipal Airport are estimated to be approximately \$9.6 million. A breakdown by type is given in Exhibit 10. The visitor expenditures listing is based on a mix of tourist, business and personal travel derived from the results of other surveys throughout Michigan. All visitor expenditures are at the actual cost outlay except retail sales which, since it is a margin industry, is shown at 20 percent of the actual expenditures. Expenditures by airport dependent firms consist only of those costs attributable to airport related activity.

INDUCED IMPACT

Direct impacts of \$9.3 million and indirect impacts of \$9.6 million represent increases in final demand for goods and services in the Ann Arbor area. To these must be added the "multiplier" effect produced by circulation of money through the regional economy. To

and other critical time sensitive medical items pass through Ann Arbor Municipal Airport on a regular basis. Blood and tissue samples can be sent or received, for analysis by medical specialists throughout the country. Stocks of rare serums, antitoxins and isotopes are made more readily available to area and regional hospitals for which Ann Arbor Municipal Airport is the nearest air facility. The airport makes transport of patients and delivery of transplant organs to and from local hospitals less hazardous and stressful.

Ann Arbor Municipal Airport also supports the maintenance of essential community services such as law enforcement. Uses by the police include support and operation of aerial surveillance and search and rescue. The facility is also used by the Civil Air Patrol as a base for search operations.

In recent years , general aviation has become a major training ground for rewarding airline/aeronautical careers. The presence of flight schools at the facility gives Ann Arbor residents convient access to these career opportunities.

GLOSSARY

The following is a glossary of economic and aviation terms used in the study.

ECONOMIC IMPACT TERMS:

Airport Tenant: A firm which is located on the airport's property, and which leases land and/or buildings directly or indirectly from the airport owner.

Direct Economic Impact: Expenditures that occur due to the provision of aviation service. These typically occur at the airport and include airport, airline, FBO, and other airport tenant payrolls and expenditures which are of value to the region.

Final Demand: The value of aviation related financial expenditures that comprise the airport's direct and indirect impacts.

Indirect Economic Impact: Expenditures due to the use of an airport. These include those expenditures by aviation users and businesses whose existence is tied to the airport or to aviation (e.g., corporate air operations, travel agencies). Expenditures may occur at the airport, or elsewhere in the service area.

Induced Economic Impact: The "multiplier" implications associated with the direct and indirect impacts. These are subsequent economic transactions, as money circulates through and out of the economy.

Leakages: That portion of expenditures which leave the impact area (federal taxes, fuel purchase, aircraft and parts purchases external to the region, etc.). Not included as a local economic impact.

RIMS-II: Regional Input-Output Modeling System. Econometric model developed by the U.S. Department of Commerce and used to calculate the induced economic impact. In this study, the model is specific to the

Michigan area of impact considered.

Total Economic Impact: The "Direct" plus "Indirect" plus "Induced" economic impacts.

Value Added: The local area content of expenditures. Typically the value of output minus the value of the inputs purchased from firms located outside the region.

Visitor: An aviation transported person who resides outside of the service area and who arrived in the area via one of the airports.

AVIATION TERMS:

Based Aircraft: Airplanes located at the subject airport when not in use.

FBO: Fixed Base Operator. A business at the airport which may offer a variety of services often including aircraft storage and parking, fuel sales, maintenance, flight instruction, sales of aircraft, parts, etc.

General Aviation: That portion of civil aviation which encompasses all facets of aviation except air carriers holding a certificate of convenience and necessity from the Federal Aviation Administration, and large aircraft commercial operators.

Itinerant Flight: A flight which originates at one airport and terminates at another.

Local Flight: A flight which terminates at the airport of departure.

Operation: One aircraft takeoff or one aircraft landing at an airport.

SURVEY RESPONDENTS

The following is a listing of organizations and individuals who provided input to the Ann Arbor Municipal Airport Community Benefits Assessment. The cooperation of all respondents made this study possible and is appreciated.

ACRO
Aeschliman Equipment Company
Ann Arbor Air Service
Ann Arbor Avionics, Inc.
Ann Arbor Control Tower
Arbor Spring /Alternative Light
Aviation Center
Blue Hun Enterprises
Bob Twining Aircraft Sales, Inc.
Byerly Aviation, Inc.
Campus Auto Rental
City of Ann Arbor
Cresive Die and Tool, Inc.
CTM
D. Deshaies
Discount Tire, Inc.
Eastern Mich. Univ. - Interdisciplinary Tech.
Federal Express
First Martin Corporation
Flight Center
Fly for Hire
Gary's Banners, Inc.
Goodyear Airship Operation
Great Lakes Pilot News
LBW Aviation
M. R. Ellis, Jr.
Michigan Performance
Midwest Medflight
Moeller Manufacturing
Nick Stone
Schumaker and Company
Supporter of Aviation Resources (SOAR)
Techair
The Hysen Group
The Systems Group, Inc.
Tri-State Airway Agency
University of Michigan Survival Flight
Vernon Larowe
Warren Williams

SURVEY RESPONDENT COMMENTS

The following is a summary of some of the reasons/benefits that survey respondents listed for locating on or near the Ann Arbor Municipal Airport. Quotes are attributed to respondents by category rather than individual name unless prior approval was received from the respondent.

"Many of our clients are based here and this facilitates air visitations from our clients."

- a dependent business firm

"The availability of the airport and our own plane gives us the ability to reach customers over a broader area even though Ann Arbor Municipal Airport does not have direct commercial air service. Without the airport we would probably have to relocate to a city that either offered commercial service or to one with an airport."

- a dependent business firm

"Ann Arbor Municipal Airport reduces significantly the time required for conferences with customers and suppliers."

- a dependent business firm

"Use of the airport by our consultants and clients is not only a convenience but also a real competitive advantage."

- a dependent business firm

"Use of Ann Arbor Municipal Airport allows us to easily fly to multiple locations throughout Michigan to better manage our company."

- a dependent business firm

"The value of the airport to new and existing tenants for our developments is substantial and it provides efficient access to clients for our staff."

- a dependent business firm

"We provide a reliable, safe, convenient, and economical means of travel to the Ann Arbor business community... We provide a service to those companies in the area whose businesses goes beyond the city limits. Our service helps companies grow, thus bringing

more revenue to Ann Arbor."

- an airport user

"Survival Flight has transported 9,000 patients in the nine years it's been in service. Approximately 3,000 children have been transported to Mott Children's Hospital. Ann Arbor Municipal Airport is essential as a maintenance location for our two aircraft."

"Also, U. of M. is presently developing plans to build a hangar/maintenance facility at Ann Arbor Municipal Airport. We have taken this step only after exhausting all possibilities to rent a hangar capable of supporting our program."

- U. of M. Survival Flight

