A STUDY OF THE ECONOMIC IMPACT
OF THOMPSON AIRPORT

Project Leader: Barry E. Prentice
Project Team: Dave W. Benell and John Heads

Research Bulletin No. 8

December 1989
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Transport Institute, University of Manitoba
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A Study of the Economic Impact of Thompson Airport
FOREWORD

Economic impact studies for airports have been undertaken for many locations recently. They are not strictly speaking a series, but the authors of this one for Thompson have attempted to define and follow a methodology which has been applied to other locations as well. This will allow some interesting comparisons. The studies main purpose, however, is to take an airport, so often a taken for granted resource, into a proper economic perspective.

The Transport Institute has been particularly happy to do a number of studies like this one and particularly in Manitoba. The Institute depends for its core funding on the Manitoba government and is happy to provide these localized returns.

Hon. Otto Lang  
Chairman

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EXECUTIVE SUMMARY

Thompson Airport is an important transportation link to Manitoba's hinterland. In addition to serving the City of Thompson, it provides essential airline services to remote communities throughout Northern Manitoba. The objective of this study is to measure the economic activity generated by Thompson Airport. An estimate of the replacement cost of publicly and privately owned capital assets at the airport is included.

A survey of airport-related firms and organizations provided the information required for the measurement of the direct economic activities associated with the airport. The response rate for the survey was 76%. Economic activities are documented in terms of economic output, value added (GDP), employment and labour income.

The results of the study include aggregate levels of direct, indirect and induced activities generated by Thompson Airport. Direct activities are consequences of businesses and organizations which can attribute either all or only a portion of their business to the airport. Indirect activity occurs in sectors that supply inputs to the organizations involved in the direct economic activity. Induced economic activity is the result of expenditures by individuals who receive their income from direct and indirect airport activities. The resulting "total effect" incorporates the direct, indirect and induced economic effects within Manitoba of the initial activity.

A summary of the economic activities generated by Thompson Airport is presented in Table 1.

**TABLE 1: THOMPSON AIRPORT ECONOMIC ACTIVITY: 1988**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Economic Output</th>
<th>Value Added (GDP)</th>
<th>Employment (Person-years)</th>
<th>Labour Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>$24,607,240</td>
<td>$16,808,491</td>
<td>374</td>
<td>$11,001,176</td>
</tr>
<tr>
<td>Indirect &amp; Induced</td>
<td>---</td>
<td>$12,545,442</td>
<td>359</td>
<td>$6,890,789</td>
</tr>
<tr>
<td>Total</td>
<td>$24,607,240</td>
<td>$29,353,933</td>
<td>733</td>
<td>$17,891,965</td>
</tr>
</tbody>
</table>
It is clear that the indirect and induced activities are significant components of the total economic impact of the airport. The direct GDP contribution of Thompson Airport is $16,808,491, but the total contribution to Manitoba's economy is $29,353,933. With a total direct employment of 374 person-years, Thompson Airport ranks as the third largest employer in Thompson, following INCO and the School District of Mystery Lake.

Capital assets include airport land, airside and groundside surfaces, buildings and other structures, airport utilities and airport operations equipment. The total replacement cost of the on-site capital investment at Thompson Airport has been estimated at $92,746,008. The replacement of the airport would involve 1900 person-years of employment within Manitoba.

The economic impacts of Thompson Airport are forecast for a medium term, 4 year period, and for a long term, 10 year period, based on "optimistic", "pessimistic" and "best estimate" growth scenarios. A summary of the "best estimate" scenario economic impacts for 1998 is presented in Table 2.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Economic Output</th>
<th>Value Added (GDP)</th>
<th>Employment (Person-years)</th>
<th>Labour Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>$34,499,350</td>
<td>$23,565,504</td>
<td>524</td>
<td>$15,423,649</td>
</tr>
<tr>
<td>Indirect &amp; Induced</td>
<td>---</td>
<td>$17,588,710</td>
<td>504</td>
<td>$9,660,886</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$34,499,350</td>
<td>$41,154,214</td>
<td>1028</td>
<td>$25,084,535</td>
</tr>
</tbody>
</table>

The total economic output of airport-related activities is expected to increase to $34.5 million by 1998. The total GDP effect within Manitoba of Thompson Airport will be $41 million, and 1028 person-years of employment will translate to $25 million in employment income.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>iii</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>v</td>
</tr>
<tr>
<td>1.0 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Profile of the City of Thompson</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Profile of Thompson Airport</td>
<td>3</td>
</tr>
<tr>
<td>1.3 Objectives</td>
<td>3</td>
</tr>
<tr>
<td>1.4 Organization of the Study</td>
<td>4</td>
</tr>
<tr>
<td>2.0 Methodology of Airport Economic Impact Measurement</td>
<td>5</td>
</tr>
<tr>
<td>2.1 Review of Previous Economic Impact Studies</td>
<td>5</td>
</tr>
<tr>
<td>2.1.1 Methodology</td>
<td>5</td>
</tr>
<tr>
<td>2.1.2 Edmonton International Airport</td>
<td>5</td>
</tr>
<tr>
<td>2.1.3 Vancouver International Airport</td>
<td>6</td>
</tr>
<tr>
<td>2.2 Direct Economic Activities:</td>
<td>6</td>
</tr>
<tr>
<td>2.3 Indirect Economic Activities:</td>
<td>7</td>
</tr>
<tr>
<td>2.4 Induced Economic Activities:</td>
<td>7</td>
</tr>
<tr>
<td>2.5 Measurements of Economic Activity</td>
<td>8</td>
</tr>
<tr>
<td>2.5.1 Gross Revenues (Economic Output)</td>
<td>8</td>
</tr>
<tr>
<td>2.5.2 Value Added</td>
<td>9</td>
</tr>
<tr>
<td>2.5.3 Employment</td>
<td>9</td>
</tr>
<tr>
<td>2.5.4 Labour Income</td>
<td>9</td>
</tr>
<tr>
<td>2.6 Capital Investment</td>
<td>9</td>
</tr>
<tr>
<td>2.7 Economic Multipliers</td>
<td>10</td>
</tr>
<tr>
<td>2.8 Forecasts of Economic Impact</td>
<td>11</td>
</tr>
<tr>
<td>2.9 Socio-economic Impacts</td>
<td>11</td>
</tr>
<tr>
<td>2.10 Data Collection</td>
<td>11</td>
</tr>
<tr>
<td>3.0 Economic Impact of Thompson Airport</td>
<td>14</td>
</tr>
<tr>
<td>3.1 Results of the Study</td>
<td>14</td>
</tr>
<tr>
<td>3.1.1 Gross Economic Output</td>
<td>14</td>
</tr>
<tr>
<td>3.1.2 Value Added (GDP)</td>
<td>15</td>
</tr>
<tr>
<td>3.1.3 Employment</td>
<td>17</td>
</tr>
<tr>
<td>3.1.4 Labour Income</td>
<td>19</td>
</tr>
<tr>
<td>3.2 Capital Investment</td>
<td>21</td>
</tr>
<tr>
<td>4.0 Future Trends</td>
<td>22</td>
</tr>
<tr>
<td>4.1 Optimistic Scenario</td>
<td>23</td>
</tr>
<tr>
<td>4.2 Pessimistic Scenario</td>
<td>23</td>
</tr>
<tr>
<td>4.3 Best Estimate Scenario</td>
<td>24</td>
</tr>
<tr>
<td>5.0 Conclusions</td>
<td>25</td>
</tr>
<tr>
<td>References</td>
<td>27</td>
</tr>
<tr>
<td>Appendices</td>
<td>29</td>
</tr>
</tbody>
</table>
LIST OF TABLES

TABLE 1: TARGET POPULATION AND RESPONSE RATE OF THOMPSON AIRPORT ECONOMIC IMPACT SURVEY ........................................... 13
TABLE 2: THOMPSON AIRPORT ECONOMIC ACTIVITY: GROSS ECONOMIC OUTPUT .......................................................... 15
TABLE 3: THOMPSON AIRPORT ECONOMIC ACTIVITY: VALUE ADDED (GDP) ................................................................. 16
TABLE 4: THOMPSON AIRPORT ECONOMIC ACTIVITY: EMPLOYMENT (PERSON-YEARS) .................................................. 18
TABLE 5: DIRECT EMPLOYMENT LEVELS OF THE MAJOR EMPLOYERS IN THOMPSON ...................................................... 19
TABLE 6: THOMPSON AIRPORT ECONOMIC ACTIVITY: LABOUR INCOME ................................................................. 20
TABLE 7: 1989 CAPITAL REPLACEMENT COSTS OF THOMPSON AIRPORT ................................................................. 22

APPENDICES

Appendix I ................................................................. 27
Appendix II ................................................................. 28
Appendix III ................................................................. 35
Appendix IV ................................................................. 36
A STUDY OF THE ECONOMIC IMPACT OF THOMPSON AIRPORT

1.0 Introduction

Thompson Airport is the most important aviation facility serving Northern Manitoba. It is the second largest airport in Manitoba, and it serves a local population of about 15,000. Through its activities as a transportation centre, Thompson Airport provides direct and indirect employment to the local economy. In addition, the expenditures by aviation-related employees have secondary effects on the local economy of the Thompson region.

The role of air transport is more significant in northern Canada than in the south, where most communities can be reached by road or rail links, and few residents are truly remote from essential services. In northern Manitoba, air transport is a vital, and in some cases, the only realistic method of transport. Consequently, the economic and social importance of Thompson Airport, as a base for airline services to remote communities throughout Northern Manitoba, is more significant than is suggested by its relative size.

The Thompson Airport was built in 1958 by the International Nickel Company (Inco). Subsequently in 1963, the ownership of Thompson Airport was assumed by Transport Canada. The facility has since been operated, on a lease agreement with Transport Canada, by the Local Government District of Mystery Lake.

This study was undertaken to document the economic contribution of Thompson Airport to the city of Thompson and to the province of Manitoba. Commissioned by Transport Canada, the study was prepared by the Transport Institute, University of Manitoba.

1.1 Profile of the City of Thompson

The importance of Thompson Airport is a function of the role played by the City of Thompson in the social and economic development of Northern Manitoba. Originally, Thompson was established to provide service and support for the regional mining industry, and this continues to be a primary function of the city. Over time, however, Thompson has gained prominence as an administrative, medical, educational, and social services centre. As a transportation hub and a link for passenger and freight movements to remote communities, Thompson also functions as a gateway to northern fishing/hunting lodges and other tourist attractions.

Although its growth has been stable in recent years, Thompson's economic well-being remains heavily dependent upon
Inco's mining activities. In addition to providing employment for more than 1,800 Thompson residents, Inco makes a substantial contribution to the City of Thompson's operations budget in the form of annual grants (in lieu of municipal taxes). In 1989, the city will receive about $10 million from Inco to support municipal services. Inco also supplies Thompson's water requirements free of charge.

The promise of the continued contribution of Inco to the stability of Thompson appears to be favourable. The company realized record net profits of nearly $1 billion in 1988 (INCO Annual Report, 1988). Although precise levels of future activity are difficult to forecast, an Inco spokesman has stated that the future of Inco is solid in Thompson, and the company will probably continue to operate in the area for at least seventy more years. Expenditures in 1989 for the expansion of mining operations in Thompson are expected to be $100 million.

In addition to the promising expectations of Inco, further indications of a stable economic base exist in Thompson. The following is an excerpt from a recent publication by the Norman Regional Development Corporation:

Thompson continues to be a major administrative centre for a variety of economic activities. It is the seat of the Provincial Court and of branches of several provincial, federal and municipal government departments and agencies. Hospital, medical and social services are provided not only for its own residents but also for people from the outlying communities. It is also the centre for a number of post-secondary educational and vocational training programs offered by New Careers, Access North Civil Technology and Northern Nursing, University of Manitoba School of Social Work, Brandon University Northern Teachers Program (BUNTEP), Inter-Universities North (IUN), Limestone Training and Employment Agency (LTEA), and a satellite campus of Keewatin Community College (KCC). These facilities and programs, in addition to those of the School District of Mystery Lake, have created an important professional sector in the community.

Because of the city's central location, Thompson also serves as an important transportation and distribution centre for goods destined for northeastern Manitoba and the Keewatin District of the Northwest Territories. With the extension of air and road links it has also become a retail centre serving many communities.

Thompson's economic base is slowly becoming more diversified. A strong public sector now represents 28%
of the labour force. Thirty-five per cent of the labour force is employed in the primary, manufacturing and construction industries. The remaining 37% of the labour force is employed in the service sector. (Adams, p. 48)

The publication referred to above also stresses the need for Thompson to increase its role as a northern centre for health care and education. Clearly the air connections between Thompson, the remote communities and southern Manitoba are critical to the development of Thompson's economic base.

1.2 Profile of Thompson Airport

Thompson Airport is a Regional Airport, sub-class VI, that supports Class 1,2,3,4,7 and 9-4 commercial air services. Scheduled flights to and from Winnipeg are provided on a daily basis by Canadian Airlines International, Calm Air International Ltd., and Northlands Air Manitoba. Service to communities throughout Northern Manitoba and the Keewatin District of the Northwest Territories is shared by a total of six commercial airlines that use Thompson Airport. The Manitoba Government Air Division, and Custom Helicopters also have bases at Thompson Airport.

The City of Thompson is located 570 air kilometres north of Winnipeg (the nearest International Airport to Thompson). Thompson Airport is situated approximately 9.7 kilometres northeast of Thompson, within the Local Government District of Mystery Lake. Thompson is connected to southern Manitoba by a paved highway, and is served by CN Railways.

1.3 Objectives

An airport exists primarily for the purpose of providing public transport services. The benefits of air travel include time savings, safety, comfort and convenience. In addition, a large number of communities in northern Canada are accessible, seasonally or year-round, only by air. For many of these remote communities, air cargo services are essential to their survival.

Air cargo services to northern regions are also employed by individuals and businesses in all parts of Canada. Consequently, northern airports benefit the economies of southern jurisdictions as well as the local communities and regions. The degree to which an airport actually contributes to its regional economy, however, can be somewhat obscure.

In 1987, the federal government established a new policy for the management and ownership of airports. The policy publication,
A Future Framework for the Management of Airports in Canada, emphasizes "commercial orientation, potential contribution to economic development and responsiveness to local interests and concerns" as the new approach to managing airports.

In keeping with this approach, economic impact studies have been undertaken in order to heighten the awareness of the community and local businesses of the role played by the airports in the economic fabric of their region. These studies have also been used to support future development initiatives by recognizing the airport as a vital economic resource and a generator of increased economic activity. A further goal of economic impact studies is to establish jointly between airport management and interested local organizations an economic baseline for coordinated future developments.

The general objective of this study is to measure the economic activity generated by Thompson Airport and the economic impact that it has on the City of Thompson. The economic effects of Thompson Airport are quantified and analyzed in terms of economic output, income, employment and capital investment. Direct, indirect and induced economic activities are considered. A ten year forecast of the economic impacts is developed based on different levels of projected economic activity at the Thompson Airport.

1.4 Organization of the Study

The study proceeds in Chapter Two, with an overview of economic impact methodology. The general approach is described and explanations of economic activity, economic multipliers and economic impact are provided. The requirements for primary and secondary data are also identified.

Chapter Three deals with the economic activity that is presently being generated by Thompson Airport. The results of the study include aggregate levels of direct, indirect and induced activities of the airport as an employer and purchaser of goods and services. The activity figures for the airport are compared to local and regional values. Chapter Three ends with an estimate of the replacement cost of Thompson Airport.

The future economic impact of Thompson Airport is discussed in Chapter Four. Herein, "optimistic" and "pessimistic" scenarios are compared with a "best estimate" growth scenario in order to describe the relative economic impacts of the airport over a ten year forecast period.

A summary of the study results, and subsequent conclusions are found in the final chapter.
2.0 Methodology of Airport Economic Impact Measurement

The economic activity generated by Thompson Airport is a consequence of operations carried out by airport management, airport tenants and supporting and complementary businesses. These organizations contribute to the regional economy by employing local residents, consuming locally supplied goods and services and by contracting for airport construction and capital improvements.

To those components of the local economy that are directly attributable to Thompson Airport, indirect and induced activities must be added in order to measure total economic activity.

2.1 Review of Previous Economic Impact Studies

2.1.1 Methodology

T.M. Mazerolle and Professor B.G. Bisson of the UNB Transportation Group have written a short paper entitled "A Methodology for Airport Economic Impact Studies" (1989). In addition to outlining the basic methodology of economic impact studies, the authors explain the purpose of such studies and describe three methods of estimating indirect and induced economic activities. The methodology proposed by the authors is similar to that used in this, the Thompson Airport study.

In their discussion of the purpose of economic impact studies, Mazerolle and Bisson raise an important point. It is stated that these studies can "...enable organizations concerned with the future role of federally owned airports to ... account for all the benefits which can be expected from investment in airport infrastructure." Consequently, economic impact studies "...could form a crucial evaluative tool when examining the merits of competing capital projects." (p. 463).

2.1.2 Edmonton International Airport

Thorsten Duebel prepared the report, A Study on the Economic Impact of the Edmonton International Airport on the Local and Provincial Economy (1988). The study followed the basic economic impact methodology described by Mazerolle and Bisson, except that it does not contain an estimate of the replacement cost of airport capital investment. It proceeds beyond the standard terms of reference, however, by disaggregating the types of jobs and skill levels of airport-related employees. The place of residence of airport-related employees is also discussed.
2.1.3 Vancouver International Airport

Stanley Associates Engineering Ltd. prepared an economic impact study of Vancouver International Airport. The study follows the methodology described by Mazurolle and Bisson, adding a chapter on the impacts of transborder service, international service and increased activity.

2.2 Direct Economic Activities:

Direct economic activity is attributable to the operations of organizations for which aviation or airport activity comprises at least a portion of its total business. These organizations can be subdivided into two categories, "primary" and "secondary" linkages. This division has no computational effect on the total impact; rather, it is a convention used to facilitate the discussion and analysis.

(A) Primary linkages are generally aviation-related and are usually located either on site or in the immediate vicinity of the airport. Primary linkages include:

(i) Air Carriers: All companies offering scheduled air service within Manitoba, or to other points in Canada from the Thompson Airport are included in this group.

(ii) General Aviation: This classification includes:
- charter air operators (rotary and fixed wing);
- corporate aviation organizations;
- aviation-related organizations or educational institutions; and
- government aviation.

(iii) Air Support Services: This category includes companies whose business is primarily or wholly aviation-related, or who provide direct support to air carriers or general aviation businesses. Included in this group are:
- couriers and freight forwarders;
- aircraft maintenance services;
- aircraft repairs;
- fuelling services;
- aircraft parking or storage operations;
- aircraft rental or leasing businesses; and
- other general services.
(iv) Airport Operations and Administration: These activities consist of all government functions that are involved in the direct operation of the airport (e.g. Airports Authority Group, FSS, ATC, LGD of Mystery Lake), providing for its overall administration, or that provide support services at the airport (e.g. atmospheric information), and any contract services (e.g. janitorial, security).

(B) Secondary linkages are comprised of those organizations that are either airport-related (but not aviation-related), or for which the airport is responsible for only a portion of their total business. Secondary linkages include:

(i) Commercial Services: All retail and personal service businesses operating on the airport site are considered to be commercial services.

(ii) Ground Transport: Those operations that transfer passengers to the airport are classed as ground transport services.
   - car rental;
   - taxi service; and
   - bus transportation.

(iii) Tourist/Travel/Hotel Industries: This sector includes travel agencies, tour operators, hotels, resorts and sport hunting and fishing services.

2.3 Indirect Economic Activities:

Indirect economic activity of the airport is attributable to firms that supply services, raw materials and other inputs to the organizations involved in direct economic activity. Expenditure necessitated by direct activity becomes the revenue of indirect activity. For example, expenditures by an airport coffee shop become the revenue of a food wholesaler (who represents indirect activity).

2.4 Induced Economic Activities:

Induced economic activity of the airport is the effect of successive rounds of spending which begin with the consumption spending of individuals involved in the direct and indirect economic activities. The result is increased employment and income
over and above the levels for which direct and indirect activities are responsible.

Indirect and induced economic activities will be discussed further in the section dealing with economic multipliers (section 2.6).

2.5 Measurements of Economic Activity

It is conceivable that many measures of activity might be used in compiling an absolute level of economic activity attributable to Thompson Airport. However, some measures of economic benefit associated with the airport lie outside the scope of this study.

A monetary value may be placed on the time saved by each airport user when the user travels by air instead of by alternative modes. For example, the time saved by flying from Winnipeg to Thompson, rather than travelling by automobile, is a benefit that passengers gain because of the Thompson Airport. The difficulty with this approach is the determination of a monetary value that reflects every passenger's value of time, along with an evaluation of each flight in terms of alternate transport modes. Clearly, even if such analysis were manageable, it is doubtful that credible results would be achieved. Other transport benefits that accrue to local businesses, such as market expansion, increased business contacts, speed of freight delivery and reduced inventory costs, are equally difficult to quantify.

This study concentrates on four measures of economic activity that can be assessed. Included are estimates of gross revenues, values added, employment and labour income. These units of measurement are defined as follows.

2.5.1 Gross Revenues (Economic Output)

Firms and organizations involved in airport-related activity can attribute part or all of their annual revenue to Thompson Airport. Gross revenue is defined as the total annual income from direct economic activity, less all inter-business purchases and sales that transpire between different airport-related operations.

Inter-business transactions are excluded from gross revenues in order to avoid the double counting of economic activity. For example, the receipts from the sale of aviation fuel to air carriers are not included in the value of total gross revenues because they are already counted as an expense of the air carriers. The inclusion of fuel sales revenues in the measure of total economic output would exaggerate the level of economic activity.
2.5.2 Value Added

A firm's value added is defined as the value of its output minus the value of the inputs that it purchases from other firms (Lipsey, Sparks and Steiner, p. 482). That is, only the amount by which a firm increases the value of its basic inputs and other production inputs - through the production of a final product - constitutes value added. The measure of value added economic activity includes wages, interest payments, depreciation, dividends, overhead, and corporate profit. In this study, value added is determined by subtracting each firm's expenditures for goods and services from its revenues.

The total of all values added that result from airport-related activity represents the airport's direct contribution to the Gross Domestic Product (GDP). Indirect and induced economic activities can be quantified by applying economic multipliers to the direct GDP value.

2.5.3 Employment

Employment figures are documented in terms of total person-years of airport-related employment. One person, employed full-time for one year, represents one person-year of employment. Alternatively, two part-time employees who work twenty hours per week are considered to be equivalent to one full-time employee.

2.5.4 Labour Income

Labour income is comprised of the total annual wages, salaries and benefits received as a result of airport-related employment.

2.6 Capital Investment

The replacement cost of all capital assets permanently stationed at the airport site is calculated. This measure includes airport land, airside and groundside surfaces, buildings and other structures, airport utilities and airport operations equipment. Only fixed assets that are expressly dedicated to airport-related activity are included.

A complete inventory of all capital assets on the site of Thompson Airport was compiled. This was accomplished with the aid of the Manitoba Department of Rural Development, Land Appraisal Division. On-site inspections of the airport allowed for the identification of structures, surfaces and electronic systems not included in provincial assessments. Further information was provided by personnel of Public Works Canada, Engineering and Architecture Division.
A large portion of replacement values were estimated using Transport Canada's Construction Cost Reference Data Base for Airport Facilities (TP 3218). This manual provides per unit cost factors for the airport's various structures and utilities. Adjustments were made to reflect variances in construction costs in Thompson, as opposed to other geographic areas. Replacement costs were calculated in 1988 dollars, then inflated to 1989 levels.

Appraisals of the value of Airport land and some utilities was provided by the provincial Land Appraisal Division. Estimates of the replacement costs of some items, such as the radar station, navigational aids and other electronic equipment, were supplied by specialists employed by Transport Canada and Public Works Canada.

It should be noted that the information on the capital investment embodied in the Thompson Airport has been included in this report at the request of Transport Canada. These data have no meaning in the sense of "economic impact", because capital investments are "sunk costs". The economic impact would only occur if the government actually abandoned the present airport site and constructed a new replacement airport. Nevertheless, the replacement cost of the airport does provide a guide to the size of the public asset represented by this transportation infrastructure.

2.7 Economic Multipliers

In order to determine the indirect and induced effects of direct airport-related activity, economic multipliers are employed. A multiplier is defined as the ratio of the change in national income to the initial change in expenditure that brings it about (Lipsey, Sparks and Steiner, p. 534). Economic multipliers are derived from input-output models that relate the total economic change incurred by a direct change in an industry sector. Consequently, the total effect of a direct economic activity can be determined from the direct GDP contribution of the activity and the appropriate economic multiplier. The resulting "total effect" incorporates the direct, indirect and induced economic effects of the initial activity.

The economic multipliers used in this study were supplied by the Manitoba Bureau of Statistics. They were derived as a result of applying an appropriate statistical model to 1979 input-output data that trace inter-industry flows of goods and services. These are the most current multipliers available from the Manitoba Bureau of Statistics. Assuming that the economic structure within Manitoba has not changed significantly in the past decade, the multipliers used in this study should provide sufficiently reliable results.
Multipliers can be applied to employment numbers and labour income as well as direct GDP. It should be noted, however, that a portion of all inter-industry and consumer expenditures occur outside of Manitoba. Because the multipliers used in this study apply only to effects within Manitoba, total economic effects will be lower than they would be if national multipliers were used. A table containing the multipliers used in this study is found in Appendix I.

2.8 Forecasts of Economic Impact

Based on "optimistic", "pessimistic" and "best estimate" growth scenarios, the economic impacts of Thompson Airport are forecast for a medium term, 4 year period, and for a long term, 10 year period. Transport Canada's "Official Forecasts, Thompson Airport" provides predictions of future airport activity.

The "best estimate" scenario is considered to reflect the most likely levels of future airport-related economic activity. The "optimistic" and "pessimistic" scenarios describe the highest and lowest levels of economic activity that can be expected to result from Thompson Airport's operations.

Predictions of future airport-related activities are based on forecasts of enplaned and deplaned passengers. It is assumed that increases in the numbers of passengers will be directly proportional to changes in the total economic impact of Thompson Airport.

2.9 Socio-economic Impacts

As mentioned in section 2.5, there are many benefits associated with Thompson Airport. Negative aspects of the airport, such as noise, pollution, safety, ground traffic congestion and land use, however, do not appear to create problems worth considering.

Noise, pollution and safety do not affect the residents of Thompson, since the airport is situated about 10 kilometres from the city. The airport is situated on land which would likely not be developed otherwise (it is surrounded by undeveloped land). Finally, the amount of traffic travelling to and from Thompson Airport has never caused traffic congestion problems.

2.10 Data Collection

Data for this study were obtained by means of a questionnaire that was sent to all the firms and organizations identified as participants in airport-related economic activity. Thirty-eight
questionnaires were distributed to these participants. Subsequently, many firms were contacted directly and interviewed by University of Manitoba Transport Institute personnel.

Where complete responses were not supplied by the participants, attempts to obtain partial responses were made. Survey data have been augmented by estimates based on responses from similar organizations, and information from alternative sources. Data required for comparative purposes were supplied by Statistics Canada.

An overall response rate of 76.3 percent was attained. Table 1 shows that a good response was received from every linkage category except for Ground Transportation. The responses from the Ground Transportation category, however, are sufficient for this study. One of each of the three modes of ground transportation represented in the target population responded to the survey. Additionally, Ground Transportation represents a relatively small portion of the total economic activity generated by Thompson Airport.
<table>
<thead>
<tr>
<th>Primary Linkage Organizations</th>
<th>Number in Target Population</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Carriers</td>
<td>3</td>
<td>100%</td>
</tr>
<tr>
<td>General Aviation</td>
<td>6</td>
<td>67%</td>
</tr>
<tr>
<td>Air Support</td>
<td>4</td>
<td>75%</td>
</tr>
<tr>
<td>Airport Admin. &amp; Operations</td>
<td>5</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Linkage Organizations</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Services</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Ground Transportation</td>
<td>8</td>
<td>38%</td>
</tr>
<tr>
<td>Tourist/Travel/Hotel Industries</td>
<td>10</td>
<td>80%</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>76%</td>
</tr>
</tbody>
</table>

Appendix II contains a brief explanation of this study's survey methodology, a sample questionnaire and a list of the target population.
3.0 Economic Impact of Thompson Airport

The quantitative measures of economic activity are reported in monetary values and in terms of employment numbers. The data reflect contributions that can be attributed to the local area and the Province of Manitoba. In some cases, such as employment numbers, the contribution is more certain to be local in its effect. Measures of value added likely apply to the province as a whole.

3.1 Results of the Study

The economic impact is measured in terms of gross economic output, value added, employment and labour income. These measures are compared to the total activity in the region to identify the relative importance of the Thompson Airport.

3.1.1 Gross Economic Output

The figures for the gross economic output related to Thompson Airport are presented in Table 2. These are the total receipts from business transactions that are directly attributable to the airport, less any revenues received from other airport-related activities. Consequently, aviation fuel revenues and airport landing fees (along with other cases of double counting) have been eliminated.

The largest contribution to economic output is represented by Air Carriers, with close to $11 million in revenues. General Aviation is the next largest contributor, with revenues of approximately $5.5 million. Airport Operations and Administration account for $3 million. The total economic output represented by primary linkages is $19,560,177.

The Tourist/Travel/Hotel Industries had 1988 revenues of $4.4 million, considerably more than those of Commercial Services and Ground Transportation. Total annual economic output from secondary linkages is $5,047,063.
### TABLE 2: THOMPSON AIRPORT ECONOMIC ACTIVITY: GROSS ECONOMIC OUTPUT

<table>
<thead>
<tr>
<th>Primary Linkage Organizations</th>
<th>Direct Economic Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Carriers</td>
<td>$10,959,734</td>
</tr>
<tr>
<td>General Aviation</td>
<td>5,576,259</td>
</tr>
<tr>
<td>Air Support</td>
<td></td>
</tr>
<tr>
<td>Airport Admin. &amp; Operations</td>
<td>3,024,184</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$19,560,177</strong></td>
</tr>
<tr>
<td>Secondary Linkage Organizations</td>
<td></td>
</tr>
<tr>
<td>Commercial Services</td>
<td>$ 277,333</td>
</tr>
<tr>
<td>Ground Transportation</td>
<td>342,518</td>
</tr>
<tr>
<td>Tourist/Travel/Hotel Industries</td>
<td>4,427,212</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$5,047,063</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$24,607,240</strong></td>
</tr>
</tbody>
</table>

#### 3.1.2 Value Added (GDP)

Value added represents the contribution to GDP of airport-related economic activity. Direct value added includes only the amount by which the economic activities conducted by the surveyed organizations contribute directly to Manitoba’s GDP. Indirect and induced GDP are determined by the application of an appropriate multiplier to the direct value added. They are the effects of inter-business spending (outside of airport-related firms), and of successive rounds of consumer spending within Manitoba. The total of direct, indirect and induced values added is the contribution to the provincial GDP of economic activities attributable to Thompson Airport.
The ratio of direct value added to gross economic output varied among the different linkage organizations. The value added by Airport Operations and Administration showed the lowest ratio of direct value added to gross economic output, a result of proportionately large expenditures for production inputs.

Table 3 shows that primary linkage organizations represent a direct GDP contribution of $13,532,953, and generate $9,818,015 in indirect and induced economic activities. The total contribution of the primary linkages to Manitoba's GDP is $23,350,968.

### TABLE 3: THOMPSON AIRPORT ECONOMIC ACTIVITY: VALUE ADDED (GDP)

<table>
<thead>
<tr>
<th>Primary Linkage Organizations</th>
<th>Direct</th>
<th>Multiplier</th>
<th>Induced and Indirect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Carriers</td>
<td>$8,067,014</td>
<td>1.729</td>
<td>$5,880,853</td>
<td>$13,947,867</td>
</tr>
<tr>
<td>General Aviation</td>
<td>3,269,932</td>
<td>1.729</td>
<td>2,383,780</td>
<td>5,653,712</td>
</tr>
<tr>
<td>Air Support</td>
<td>276,200</td>
<td>1.557</td>
<td>153,843</td>
<td>430,043</td>
</tr>
<tr>
<td>Airport Admin. &amp; Operations</td>
<td>1,919,807</td>
<td>1.729</td>
<td>1,399,539</td>
<td>3,319,346</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>$13,532,953</td>
<td></td>
<td>$9,818,015</td>
<td>$23,350,968</td>
</tr>
</tbody>
</table>

| Secondary Linkage Organizations | | | | |
|---------------------------------| | | | |
| Commercial Services             | $152,666  | 2.198      | $182,894              | $335,560    |
| Ground Transportation           | 284,339   | 1.733      | 208,420               | 492,759     |
| Tourist/Travel/Hotel Industries | 2,838,533 | 1.823      | 2,336,113             | 5,174,646   |
| **Subtotal**                    | $3,275,538|            | $2,727,427            | $6,002,965  |
| **TOTAL**                       | $16,808,491|           | $12,545,442           | $29,353,933 |
The indirect and induced economic activity generated by the secondary linkages was proportionally greater than that generated by the primary linkages. This was a consequence of larger multipliers, reflecting the greater tendency of the secondary linkage organizations to purchase goods and services produced in Manitoba. From a direct value added of $3,275,538, the secondary linkages generate $2,727,427 of indirect and induced economic activities. They thus contribute a total of $6,002,965 to Manitoba's economy.

Thompson Airport is responsible for a direct contribution to GDP of $16,808,491. From this, $12,545,442 is generated within the province by indirect and induced economic activities. The total contribution to Manitoba's economy that is attributable to Thompson Airport is $29,353,933.

3.1.3 Employment

In order to facilitate discussion, employment figures are documented in terms of person-years of employment. One person-year of employment is the equivalent of one person, employed full-time for one year, or two part-time employees who each work twenty hours per week. Employment figures for Thompson Airport are presented in Table 4.

Thompson Airport is directly responsible for 374 person-years of employment. Of this total, 139 person years of employment are provided by Air Carriers, 85 by General Aviation, 8 by Air Support and 35 by Airport Operations and Administration. The primary linkage organizations therefore provide positions for the equivalent of 267 full-time employees.

Of the 107 person-years of employment represented by the secondary linkage organizations, the full-time equivalents of 92 positions are provided by the Tourist/Travel/Hotel Industries, 8 positions by Ground Transportation and 7 by Commercial Services.
**TABLE 4: THOMPSON AIRPORT ECONOMIC ACTIVITY: EMPLOYMENT (PERSON-YEARS)**

<table>
<thead>
<tr>
<th>Primary Linkage Organizations</th>
<th>Direct</th>
<th>Multiplier</th>
<th>Induced/Indirect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Carriers</td>
<td>139</td>
<td>2.039</td>
<td>144</td>
<td>283</td>
</tr>
<tr>
<td>General Aviation</td>
<td>85</td>
<td>2.039</td>
<td>88</td>
<td>173</td>
</tr>
<tr>
<td>Air Support</td>
<td>8</td>
<td>6.004</td>
<td>40</td>
<td>48</td>
</tr>
<tr>
<td>Airport Admin. &amp; Operations</td>
<td>35</td>
<td>2.039</td>
<td>36</td>
<td>71</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>267</strong></td>
<td><strong>308</strong></td>
<td></td>
<td><strong>575</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Linkage Organizations</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Services</td>
<td>7</td>
<td>1.930</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Ground Transportation</td>
<td>8</td>
<td>1.939</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Tourist/Travel/Hotel Industries</td>
<td>92</td>
<td>1.389</td>
<td>36</td>
<td>128</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>107</strong></td>
<td><strong>51</strong></td>
<td></td>
<td><strong>158</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>374</strong></td>
<td><strong>359</strong></td>
<td></td>
<td><strong>733</strong></td>
</tr>
</tbody>
</table>

In addition to direct employment, the airport is responsible for 359 person-years of indirect and induced employment in Manitoba. The total effect of economic activities at Thompson Airport is 733 person-years of employment in Manitoba.

The labour force of Thompson, as identified by the 1986 Census, is 7,745 people. The direct employment effect of Thompson Airport is equal to the provision of full-time positions for 4.8 percent of Thompson's labour force. The 1986 labour force of
Northern Manitoba (Census Divisions 21, 22 and 23) was 28,629. Thompson Airport is therefore directly responsible for the employment, on a full-time equivalence basis, of 1.3 percent of Northern Manitoba's labour force.

In Table 5, direct employment attributable to Thompson Airport is compared to employment levels of the major non-airport-related employers in Thompson. With a total direct employment of 374 person-years, Thompson Airport ranks as the third largest employer in Thompson, following INCO and the School District of Mystery Lake.

TABLE 5: DIRECT EMPLOYMENT LEVELS OF THE MAJOR EMPLOYERS IN THOMPSON

<table>
<thead>
<tr>
<th>Employer</th>
<th>Person-years of Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCO</td>
<td>1800</td>
</tr>
<tr>
<td>School District of Mystery Lake</td>
<td>400</td>
</tr>
<tr>
<td>Thompson General Hospital</td>
<td>215</td>
</tr>
<tr>
<td>City of Thompson</td>
<td>109</td>
</tr>
<tr>
<td>Thompson Airport</td>
<td>374</td>
</tr>
</tbody>
</table>

3.1.4 Labour Income

Labour income of over $11 million per year is directly attributable to economic activity at Thompson Airport. Table 6 shows that Air Carriers are responsible for the largest labour income portion of the categories listed, with payrolls of $4,946,504. The primary linkage organizations pay out a total of $9,458,759 in annual wages and salaries.

The Tourist/Travel/Hotel Industries represent airport-related income of $1,287,740. The secondary linkage organizations are responsible for $1,542,417 in annual wages and salaries. With the inclusion of $6,890,789 in indirect and induced labour income, Thompson Airport generates $17,891,965 of labour income annually.
<table>
<thead>
<tr>
<th>Primary Linkage Organizations</th>
<th>Direct</th>
<th>Multiplier</th>
<th>Induced and Indirect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Carriers</td>
<td>$4,964,504</td>
<td>1.575</td>
<td>$2,854,590</td>
<td>$7,819,094</td>
</tr>
<tr>
<td>General Aviation</td>
<td>2,938,736</td>
<td>1.575</td>
<td>1,689,773</td>
<td>4,628,509</td>
</tr>
<tr>
<td>Air Support</td>
<td>176,000</td>
<td>3.831</td>
<td>498,256</td>
<td>674,256</td>
</tr>
<tr>
<td>Airport Admin. &amp; Operations</td>
<td>1,379,519</td>
<td>1.575</td>
<td>793,223</td>
<td>2,172,742</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$9,458,759</strong></td>
<td><strong>$5,835,842</strong></td>
<td></td>
<td><strong>$15,294,601</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Linkage Organizations</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Services</td>
<td>$88,677</td>
<td>2.280</td>
<td>$113,507</td>
<td>$202,184</td>
</tr>
<tr>
<td>Ground Transportation</td>
<td>166,000</td>
<td>1.660</td>
<td>109,560</td>
<td>275,560</td>
</tr>
<tr>
<td>Tourist/Travel/Hotel Industries</td>
<td>1,287,740</td>
<td>1.646</td>
<td>831,880</td>
<td>2,119,620</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$1,542,417</strong></td>
<td><strong>$1,054,948</strong></td>
<td></td>
<td><strong>$2,597,364</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$11,001,176</strong></td>
<td><strong>$6,890,789</strong></td>
<td></td>
<td><strong>$17,891,965</strong></td>
</tr>
</tbody>
</table>

Thompson Airport's direct contribution of $11,001,176 represents 5.3 percent of the total annual labour income in Thompson (1986 Census figures for Thompson were adjusted for inflation, to give a 1988 estimate of $208,007,290). One dollar out of every $19 in wages and salaries in Thompson is therefore the result of airport-related activity. Of the total income in Northern Manitoba (1988 estimates) 1.4 percent is directly attributable to economic activity at Thompson Airport.
The average annual wage represented by airport-related full-time employment is $29,415. This figure is somewhat lower than Thompson's average full-time employment income of $34,744 (1988 estimate) and the Northern Manitoba average of $32,391 (1988 estimate). The secondary linkage organizations, paying average annual wages of $14,415, are the reason for comparatively low airport-related income figures.

The annual labour income of the primary linkage organizations, however, averages $35,426. This figure surpasses the average figure for Northern Manitoba. When compared to Manitoba's average wage of $22,096 (Statistics Canada, Catalogue 72-002; 1987 figures adjusted to 1988 estimates), the average airport-related full-time wage is comparatively high.

3.2 Capital Investment

An estimate of the 1989 replacement cost of all fixed assets located at Thompson Airport has been prepared. This is only an indication of the true cost of replacing the airport, and some items may be priced at either more or less than their true replacement costs.

It can be expected that the replacement cost of the airport has been understated in this study. Some utility costs (such as for electrical cables and conduits) might not have been counted. Additionally, poor soil conditions in the Thompson region would likely increase the cost of constructing airside surfaces and some buildings.

The total replacement cost of Thompson Airport has been estimated at $92,746,008. This figure includes $28,178,436 of structures which are owned privately or by non-airport government organizations. The replacement of the airport would create 1900 person-years of employment within Manitoba (Manitoba Bureau of Statistics, 1986).

Table 7 categorizes the replacement costs of Thompson Airport.
<table>
<thead>
<tr>
<th>Category</th>
<th>Replacement Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>$2,088,641</td>
</tr>
<tr>
<td>Airside Surfaces</td>
<td>$18,610,827</td>
</tr>
<tr>
<td>Groundside Surfaces</td>
<td>$1,922,276</td>
</tr>
<tr>
<td>Utilities and Equipment</td>
<td>$21,766,151</td>
</tr>
<tr>
<td>Buildings and Structures</td>
<td>$48,358,113</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$92,746,008</strong></td>
</tr>
</tbody>
</table>

Buildings and structures are clearly the most costly items at the airport, followed by utilities and equipment and airside surfaces. Land and groundside surfaces represent a relatively small portion of the total on-site capital investment at Thompson Airport.

### 4.0 Future Trends

The future levels of activity at Thompson Airport are a function of several factors. Because the prosperity of the City of Thompson is, to a great extent, dependent upon Inco's operations, the airport's future activity might feel indirect effects of any fluctuations in the level of the company's mining activities. The airport will also grow in accordance to the rate at which Thompson gains prominence as an administrative, medical, educational and social services centre. In addition, Thompson Airport's future activity is a direct function of its role as a transportation hub, and of the population growth in the remote northern communities that it serves.

Interviews were conducted in Thompson, and the above factors were addressed. Inco's contributions to Thompson's stability is expected to be as stable as world nickel price fluctuations will allow. Various civic and other interest groups indicate that Thompson's role as a medical and educational centre for Northern Manitoba is certain to increase. Although Thompson's five year growth rate is 2.9 percent, Census Division 22 (surrounding and including Thompson) has experienced a five year growth rate of 14.5 percent (Statistics Canada, Catalogue 92-115). All of these factors are certain to lead to the increased use of, and subsequent growth of, Thompson Airport.
The relative economic impacts of Thompson Airport are forecast for a medium term, 4 year period, and for a long term, 10 year period, based on "optimistic", "pessimistic" and "best estimate" growth scenarios. Economic impact levels are based on Transport Canada's "Official Forecasts, Thompson Airport". It is assumed that increases in the numbers of enplaned and deplaned passengers will be directly proportional to changes in the total economic impact of the airport. A table of the passenger forecasts for Thompson Airport is found in Appendix III.

4.1 Optimistic Scenario


Airport-related activities are directly responsible for $20,506,359 of value added in 1992, while the total direct, induced and indirect economic activities contribute $36,811,798 to Manitoba's economy. In 1998, predictions call for $26,977,628 in direct value added and a total contribution to Manitoba's GDP of $47,113,062.

Under the optimistic scenario, the employment from direct airport-related activities is 456 person-years in 1992, and 600 person-years in 1998. The total direct, indirect and induced employment generated in Manitoba is 894 person-years in 1992, and 1176 person-years in 1998.

Direct labour income from airport-related activities is $13,421,435 in 1992, and $17,656,887 in 1998. Under the optimistic scenario, a total of $21,828,197 in direct, indirect and induced labour income within Manitoba can be attributed to Thompson Airport in 1992. This total labour income effect rises to $28,716,604 by 1998.

4.2 Pessimistic Scenario

Pessimistic forecasts predict that Thompson Airport's economic activity will increase above 1988 levels by 4.5 percent in 1992, and 15.7 percent in 1998. This leads to total gross economic output figures of $25,714,566 in 1992, and $28,470,577 in 1998.

The direct value added from airport-related activities is $17,564,873 in 1992, and $19,447,424 in 1998. The total effect of direct, indirect and induced economic activities is a contribution to Manitoba's GDP of $30,674,860 in 1992, and $33,962,500 in 1998.
Thompson Airport is responsible for direct employment effects of 391 person-years in 1992, and 433 person-years in 1998. Total figures of 766 person-years in 1992, and 848 person years in 1998 are the result of direct, indirect and induced employment within Manitoba.

Under the pessimistic scenario, Thompson Airport is directly responsible for labour income of $11,496,229 in 1992, and $12,728,361 in 1998. The total labour income effect within Manitoba of airport-related activities is $18,697,103 in 1992, and $20,701,004 in 1998.

4.3 Best Estimate Scenario

The best estimate scenario calls for economic activity that will surpass 1988 levels by 14.7 percent in 1992, and 40.2 percent in 1998. Consequently, the gross economic output of Thompson Airport is expected to be $28,224,504 in 1992, and $34,499,350 in 1998.


Under the best estimate scenario, the employment from direct airport-related activities is 429 person-years in 1992, and 524 person-years in 1998. The total direct, indirect and induced employment generated in Manitoba is 841 person-years in 1992, and 1028 person-years in 1998.

This scenario predicts direct labour income from airport-related activities of $12,618,349 in 1992, and $15,423,649 in 1998. The total direct, indirect and induced labour income within Manitoba that is attributable to Thompson Airport is $20,522,084 in 1992, and $25,084,535 in 1998.
5.0 Conclusions

The results of this study show that significant levels of economic activity can be attributed to Thompson Airport. The gross economic output resulting from airport-related activity is $24,607,240, and the airport's total contribution to the provincial GDP is $29,353,933.

Thompson Airport's direct employment effect is equal to the provision of full-time positions for 4.8 percent of Thompson's labour force, and for 1.3 percent of Northern Manitoba's labour force. The income resulting from this employment represents 4.4 percent of the total annual labour income in Thompson, and 1.3 percent of the labour income in Northern Manitoba.

The total replacement cost of the on-site capital investment at Thompson Airport has been estimated at $92,746,008. The replacement of the airport would create 1900 person-years of employment within Manitoba.

Official forecasts indicate that economic activities associated with Thompson Airport are expected to increase by 40 percent in the next 10 years. The airport will therefore continue to make significant contributions to the economic stability and development of the City of Thompson and Northern Manitoba.
REFERENCES


Duebel, Thorsten. *A Study on the Economic Impact of the Edmonton International Airport on the Local and Provincial Economy*. Faculty of Business, University of Alberta (Commissioned by Transport Canada), May, 1988


Appendix I

TABLE 1A: Manitoba Economic Multipliers

<table>
<thead>
<tr>
<th>Primary Linkage Organizations</th>
<th>Value Added (GDP)</th>
<th>Employment (Man-years)</th>
<th>Labour Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Carriers</td>
<td>1.729</td>
<td>2.039</td>
<td>1.575</td>
</tr>
<tr>
<td>General Aviation</td>
<td>1.729</td>
<td>2.039</td>
<td>1.575</td>
</tr>
<tr>
<td>Air Support</td>
<td>1.557</td>
<td>6.004</td>
<td>3.831</td>
</tr>
<tr>
<td>Airport Admin. &amp; Operations</td>
<td>1.729</td>
<td>2.039</td>
<td>1.575</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Linkage Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Services</td>
</tr>
<tr>
<td>Ground Transportation</td>
</tr>
<tr>
<td>Tourist/Travel/Hotel Industries</td>
</tr>
</tbody>
</table>
Appendix II

Survey Methodology

The first requirement of this study was the contact list. The office of the airport manager provided the names of most of the airport-related businesses and organizations in Thompson. The remainder of the airport-related firms were identified through the use of the Thompson Telephone Directory.

A questionnaire was mailed to each airport-related firm and organization. Based on the one used by the Transport Institute, University of Manitoba for another economic impact study, the questionnaire was kept as small as data requirements would allow. In order to indicate the confidential nature of all responses, the company names were omitted from the questionnaires, and each was numbered instead.

Two introductory letters were sent to each participant of the survey. One letter was mailed by Airports Authority Group, Transport Canada. The other letter came from the Transport Institute, University of Manitoba, and it accompanied the questionnaires.

The distribution of the questionnaires was followed by personal interviews with the survey participants. Those participants who could not be interviewed personally were contacted by telephone. Partial responses were requested in cases where all questions could not be answered. Additional questionnaires were sent to participants when the originals were lost.

The target population of the survey was made up of thirty-eight firms and organizations. Of these, twenty-nine responses were received, and an overall response rate of 76 percent was achieved.

A sample questionnaire and a list of firms and organizations contacted in the survey follow.
Sample Questionnaire

CONFIDENTIAL

Survey of the Economic Significance
of Thompson Airport

Please complete this survey using data for the last twelve month period, or for the most recent fiscal year. All data will be treated in strict confidence and will not be released to any individual or body. Only total industry data will be published.

If any section is not appropriate to your operations, indicate by placing "N/A" in the provided space. Please feel free to direct any questions pertaining to the questionnaire or the study to:

Dave Benell   Dr. Barry E. Prentice
Research Associate  Professional Associate
Phone: 474-9842   Phone: 474-9766

Mailing Address:
Airport Impact Study
Transport Institute
Room 610, Drake Centre
The University of Manitoba
Winnipeg, MB
R3T 2N2

Section A: General information

(i) Type of business/organization (please check one)

- Air carrier
- Ground transportation
- Freight handling
- Accommodation
- Retail
- Other
(ii) Financial information for 12 month period from

_________ to ___________

Section B: Employment, Expenditure and Tax Data

The following contains questions regarding employment numbers and annual expenditures for goods and services for your operations in Northern Manitoba (i.e., north of the 53rd parallel). If precise data are not available, please try to estimate within the nearest $1,000, or 10 percent, as the case may be.

Employment

(i) Average number of full-time employees residing in Northern Manitoba during most recent fiscal period.

Number of part-time employees residing in Northern Manitoba (please estimate full-time equivalents e.g., 2 part-time employees $20/week = 1 full-time employee).

(ii) Percentage of total workforce (full and part-time) that are employed in the City of Thompson

Percentage of total workforce (full and part-time) that are employed on-site at Thompson Airport.

(ii') Total payroll expenses for employees residing in Northern Manitoba (wages, salaries, benefits, excluding workers' compensation premiums).

$_$
Total Expenditures for Goods and Services

(i) Total operating expenditures for goods and services (please exclude wages, salaries, etc.). $ ________

(ii) Total Capital expenditures (for land, buildings, equipment, etc.) $ ________

(iii) Please estimate the percentage of total expenditures for goods and services that are produced in Northern Manitoba. ________% 

Taxes/Levies/Subsidies

(i) Total Provincial Taxes (payroll, fuel, sales and any other taxes) $ ________

(ii) Workers' Compensation Premiums $ ________

(iii) Municipal Taxes/Levies $ ________

(iv) Subsidies Received
(a) Provincial $ ________
(b) Municipal $ ________
Section C: Major Industry Inter-relationships

This study is examining airport-related expenditures for a wide range of businesses. In order to avoid double-counting of these expenditures it is necessary to identify major business relationships.

(i) Please refer to the attached list of firms and organizations. If any of your expenditures paid to these firms exceed 10 percent of your total expenditures, please complete the following table (if extra space is necessary, please use the back of this page).

<table>
<thead>
<tr>
<th>Type of Expenditure</th>
<th>Name of Business</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
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<tr>
<td>4.</td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
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<td>6.</td>
<td></td>
<td></td>
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<tr>
<td>7.</td>
<td></td>
<td></td>
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<tr>
<td>8.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

36
Section D: Revenues

(i) Gross annual revenues in Northern Manitoba $ __________________

(ii) Gross annual revenues in the City of Thompson (if different from above) $ __________________

(iii) Estimated percentage of gross revenues attributable to existence of Thompson Airport ___________ %

(iv) Estimated division of revenues
    Passenger-related activities _________ %
    Cargo-related activities _________ %

Section E: Capital Investment

(i) Estimated replacement cost of capital investment (land, buildings, equipment) $ __________________

(ii) Planned capital expenditures (please indicate year of planned expenditures) $ __________________
Firms and Organizations

Calm Air International Ltd.
Canadian Airlines International
Nunasi-Northland Airlines
Northwinds
Skyward Aviation
Air Manitoba
Manitoba Government Air Division
Custom Helicopters
Keewatin Tribal Council
Gardewine North
Townhouse Delivery Courier
Air Terminal Services (Esso)
Carroll Aviation Services (Shell)
Flight Services Station
Air Navigation Systems
Air Traffic Services
Airport Security
LGD of Mystery Lake
Royal Canadian Mounted Police
Airport Lite-Bite
Mile-High Variety Gift Shop
Hertz
Tilden Rent a Car
Budget Rent-a-Car
Nickel City Taxi
Thompson Cab
Driftwood Royal Taxi
Grey Goose Bus Lines Ltd.
Thompson Bus Lines
Byron's Travel Service
Thompson Insurance Service
United Travel of Thompson Ltd.
Mystery Lake Motor Hotel
Burntwood Motor Hotel
Meridian Hotel
Thompson Inn
Northern Inn
Ma-Mow-We-Tak Friendship Centre
YWCA
### Appendix III

**TABLE A2: FORECASTS OF ENPLANED AND DEPLANED PASSENGERS AT THOMPSON AIRPORT**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimistic</td>
<td>---</td>
<td>123,257</td>
<td>162,068</td>
</tr>
<tr>
<td></td>
<td>(22.0%)</td>
<td>(60.5%)</td>
<td></td>
</tr>
<tr>
<td>Pessimistic</td>
<td>---</td>
<td>105,554</td>
<td>116,375</td>
</tr>
<tr>
<td></td>
<td>(4.5%)</td>
<td>(15.7%)</td>
<td></td>
</tr>
<tr>
<td>Best Estimate</td>
<td>101,000</td>
<td>115,799</td>
<td>141,609</td>
</tr>
<tr>
<td></td>
<td>(14.7%)</td>
<td>(40.2%)</td>
<td></td>
</tr>
</tbody>
</table>

Note: The numbers in brackets are the percentage increase over the 1988 level.
Appendix IV

Terms of Reference for
A Study of the Economic Impact of the
Thompson Airport

I. Context of the Study

In 1987, the federal government established a new policy for the management and ownership of airports. The policy publication, A Future Framework for the Management of Airports in Canada, emphasizes "commercial orientation, potential contribution to economic development and responsiveness to local interests and concerns" as the new approach to managing airports.

In view of this new policy, a study of the economic impact of the airport is required:

- To heighten business/community awareness of the airport and its role in the economic fabric of the region;

- To gain support for future development initiatives at the airport and in the region by recognizing the airport as a vital economic resource and a generator of increased economic activity;

- To establish jointly between airport management and interested local organizations an economic baseline for coordinated future developments; and

II. Objectives and Scope of the Study

The study will provide a measure of the economic activity generated by Thompson Airport and the economic impact that it has on the City of Thompson and surrounding region.

The economic effects of Thompson Airport will be quantified in terms of economic output, value added, income, employment and capital investments. These economic effects will consider direct, indirect and induced economic activities. Based on
estimated economic activity of Thompson Airport, a 10 year forecast of the economic impacts will be developed using "optimistic", "pessimistic" and "best estimate" growth scenarios.

The study will be organized according to the following outline.

* The study begins with a review of the literature on measuring the economic impacts of airports, including a review of studies provided by Transport Canada.

* The available secondary data will be identified and requirements for primary data collection will be assessed. Appropriate secondary data will be collected and compiled. The study does not involve data surveys which would require prior government approval.

* Interviews will be undertaken to estimate direct economic activity associated with Thompson Airport. Primary impacts are consequences of economic activities carried out at the airport by the following:

  Air Carriers, Air Cargo/General Aviation, Air Support Services, Airport Administration and Operations.

Secondary impacts are derived from off-site economic activities that are attributable to the airport, such as:

  Commercial Services, Ground Transportation and Tourist/Travel/Hotel Industries.

* The extension of these direct economic impacts to indirect and induced airport-related activity will be explored using "economic multipliers".

41
* The magnitude of airport infrastructure capital investment will be estimated for public and private sectors.

* Socio-economic impacts of the airport will be reviewed, in general rather than definitive terms, in respect of noise, pollution, safety, ground traffic congestion, land use and locational advantage.

* Using the estimates for economic activity established from the methodology above, the relative economic impacts will be forecast for a medium 3-5 year period and for a long term 10 year period, based on "optimistic", "pessimistic" and "best estimate" growth scenarios. These economic impacts will be placed in context as to their quantitative importance in relation to the total economic contributions of the City of Thompson, the Norcan Regional Development Corporation Region and the Province of Manitoba.

* The Thompson Airport presents opportunities for economic development in the region that it serves. Topics to be investigated will include:

  - northern resource development, health care and emergency services;
  - future trends in passenger and freight services;
  - tourism activities.
III. Report Outline

The report will be provided in two parts, with the first part under the title of "A Study of the Economic Impact of the Thompson Airport" including the following sections:

1) Executive summary
2) Definition of terms and methods of analysis, expressed in sufficient detail to allow the client to use the same methodology for future updating onward updating of the study findings
3) Description of airport, airport activity, airport users and airport attracted industry
4) Economic activity results: direct, indirect and induced
5) Future trends: "optimistic", "pessimistic" and "best estimate" growth scenarios
6) Summary and conclusions
7) Appendices: Terms of reference, survey data and description of economic multiplier assumptions and results.