

The Local and Regional Economic Impacts of Oakland International Airport

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Port of Oakland
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EXECUTIVE SUMMARY

The Port of Oakland retained the services of Martin Associates to estimate the economic impacts of the Oakland International Airport. The purpose of the study is to defensibly quantify the economic impacts generated by passenger, freight, and general aviation activity at Oakland International Airport. Impacts are estimated for total airport activity, as well as separately for activity at the North Airport and South Airport. The North Airport consists of general aviation and air cargo activity as well as the Alaskan Airlines maintenance facility. The South Airport consists of commercial airline passenger and freight traffic using Terminals I and II, the Federal Express hub operations, as well as the United Airlines maintenance facility. The impacts are quantified in terms of:

- . Jobs
- . Employee earnings
- . Business revenue
- . State and local taxes, and Federal airport-specific taxes

The impacts are estimated for passenger, freight, and general aviation activity for calendar year 1996. In addition to the baseline impacts, an economic impact model has been developed which can be used to estimate the impacts associated with capital construction and expansion projects. Furthermore, the model can be used for annual updates of the impacts as well as to test the sensitivity of impacts to changes in:

- . Passenger levels
- . Domestic versus international passengers
- . Passenger trip purpose
- . Peak hour flight levels and mix of aircraft
- . Labor productivity and work rules
- . Freight levels
- . General aviation operations.

The same methodology used in this analysis has been used by Martin Associates to estimate the economic impacts generated by Oakland International Airport in 1991. As a result the impacts generated by passenger, air freight and general aviation activity in 1996 can be directly compared with the impacts generated at Oakland International Airport in 1991. In addition to the 1991 impact study of Oakland International Airport, Martin Associates has used this same methodology to measure the economic impacts of passenger, air freight and general aviation activity at the following airports:

- . Hartsfield Atlanta International Airport
- . Denver's Stapleton International Airport
- . San Francisco International Airport

- Minneapolis/St. Paul International Airport
- Milwaukee's General Mitchell International Airport
- Seattle-Tacoma International Airport
- Toronto's Lester B. Pearson International Airport
- Washington Dulles and National Airports
- San Jose International Airport
- Portland (Oregon) International Airport
- Harrisburg International Airport

Therefore, the results of this study can be compared directly with the results of these other impact studies.

Exhibit 1, on the following page, details the economic impacts generated by airport activity in Oakland in 1996. As this table shows, 1996 air passenger and air freight activity at the Oakland International Airport had the following impacts:

- 14,936 direct and induced jobs were generated for residents of the Bay Area. Of the nearly 15,000 jobs, 10,212 were direct jobs, while 4,724 jobs were induced throughout the region to support the purchase of goods and services by the 10,212 directly dependent employees. An additional 1,378 indirect jobs were generated due to \$118.8 million of local purchases by firms directly dependent upon the airport activity.

- Activity at the South Airport created 8,488 of the total 10,212 direct jobs, while North Airport operations accounted for the remaining 1,724 direct jobs.

- More than \$606 million of personal income and consumption expenditures were generated in the Bay Area and the state of California as a result of the airport activity in 1996. Activity at the South Airport generated \$511.9 million of total income and consumption expenditures, while the North Airport created \$94.9 million.

- More than \$3.8 billion of business sales were generated by airport activity. Firms at the South Airport generated \$3.6 billion of this business revenue, while North Airport firms received the \$200 million balance.

- The Federal Government received \$86.3 million in airport-specific taxes from activity at Oakland International Airport, and this reflects the fact that during 1996, the Federal aviation specific taxes that are paid to the Aviation Trust Fund were only collected for about 4 months, due to the Federal budget situation.

- State and local governments received \$93.9 million in tax revenues from airport activity.

Exhibit 1
Summary of Economic Impacts

| IMPACT CATEGORY | TOTAL | ON-SITE | VISITOR INDUSTRY |
|---|------------------|----------------|---------------------|
| JOBS | | | |
| DIRECT | 75,063 | 10,212 | 64,851 |
| INDUCED | 29,351 | 4,724 | 24,627 |
| INDIRECT | <u>1,378</u> | <u>1,378</u> | <u>NA</u> |
| TOTAL | <u>105,792</u> | <u>16,314</u> | <u>89,478</u> |
| PERSONAL WAGE/SALARY INCOME (MILLION \$) | | | |
| DIRECT | \$1,388.6 | \$297.1 | \$1,091.5 |
| RE-SPENDING | <u>\$1,447.7</u> | <u>\$309.7</u> | <u>\$1,138.0</u> |
| TOTAL | <u>\$2,836.3</u> | <u>\$606.8</u> | <u>\$2,229.5</u> |
| BUSINESS REVENUE (MILLION \$) | \$7,088.7 | \$3,842.9 | \$4,252.4 |
| STATE/LOCAL TAXES (MILLION \$) | \$656.5 | \$93.9 | \$562.6 |
| FEDERAL AVIATION TAXES (MILLION \$) | \$86.3 | \$86.3 | NA |

In addition to these direct and induced impacts, it is estimated that about 89,500 direct and induced jobs were generated in the Bay Area visitor industry due to expenditures by 2.2 million visitors to the region who arrived via the Oakland International Airport. The impacts of the visitors are estimated from the results of a 1995 passenger survey conducted by the Metropolitan Transportation Commission. These visitors, who include both domestic as well as international travelers, spent about \$4.3 billion on area hotels, restaurants, retail stores and entertainment establishments, which in turn generated the jobs in the Bay Area visitor industry. Also, as the result of visitors arriving via the airport, \$564 million of state and local tax revenues were generated.

Activity at the Oakland International Airport increased significantly between 1991 and 1996. Passenger activity grew from 6.2 million passengers in 1991 to 9.7 million in 1996, a 58% increase over the five year period. Similarly, air freight loaded on both air cargo planes as well as on passenger planes grew from 244.7 million pounds in 1991 to 655.8 million pounds in 1996, a more than 150% increase of air freight (including air cargo and air express) over the five year period. As a result of this growth in passenger and air freight activity at both the North and South Airports, the economic impacts also grew. Direct jobs grew from 6,134 jobs in 1991 to 10,212 jobs in 1996. The job growth was concentrated with the handling of air cargo and air express, which increased from 1,052 jobs in 1991 to 3,226 jobs in 1996. Direct jobs with passenger airlines also increased, from 2,426 to 3,923 jobs in 1996, a more than 60% increase. Induced jobs increased from 2,701 jobs in 1991 to 4,724 in 1996, reflecting the growth in direct jobs, as well as an increase in the multiplier that generates the re-spending impacts. Personal income generated per direct employee actually fell over the five year term, reflecting the cost savings measures of airlines and air cargo couriers. The business revenue generated by airport activity increased from \$1.7 billion to \$3.8 billion, reflecting the growth in passengers and air freight, as well as the increase in the average revenue per enplaned passenger at Oakland. Finally, as the result of the growth in out-of town passengers, local visitors industries such as hotels, restaurants, entertainment, etc. received an increase in revenue from \$1.9 million in 1991 to \$4.3 billion in 1996, and jobs increased from 42,177 direct and induced visitor industry jobs to 89,478 visitor industry jobs.

As demonstrated by the growth in activity over the 1991 -1996 period, the Oakland International Airport has been a major economic engine to the Oakland region, providing 16,314 direct and induced jobs, \$94 million of state and local taxes and \$3.8 billion of sales to area businesses. Because of the 2.2 million out-of-town visitors that use the Oakland International Airport, another 90,000 jobs are supported in the Bay Area visitors industry. Continued growth in passenger and air cargo activity at the Oakland International Airport and the North Airport will continue to provide economic growth in the Oakland area.

The remainder of this report is organized as follows. Chapter I provides an overview of the impact analyses, including a summary of the methodology, as well as a summary of the results. Chapter II details the job impacts, and Chapter III describes the business revenue, employee earnings, and tax impacts. Chapter IV presents the impacts of the 2.2 million visitors to the Bay

Area arriving via Oakland International Airport. Chapter V discusses the impact of the Oakland International Airport on regional air freight shippers, while Chapter VI compares the economic impacts generated in 1991 with those generated in 1996.

I. INTRODUCTION AND METHODOLOGY

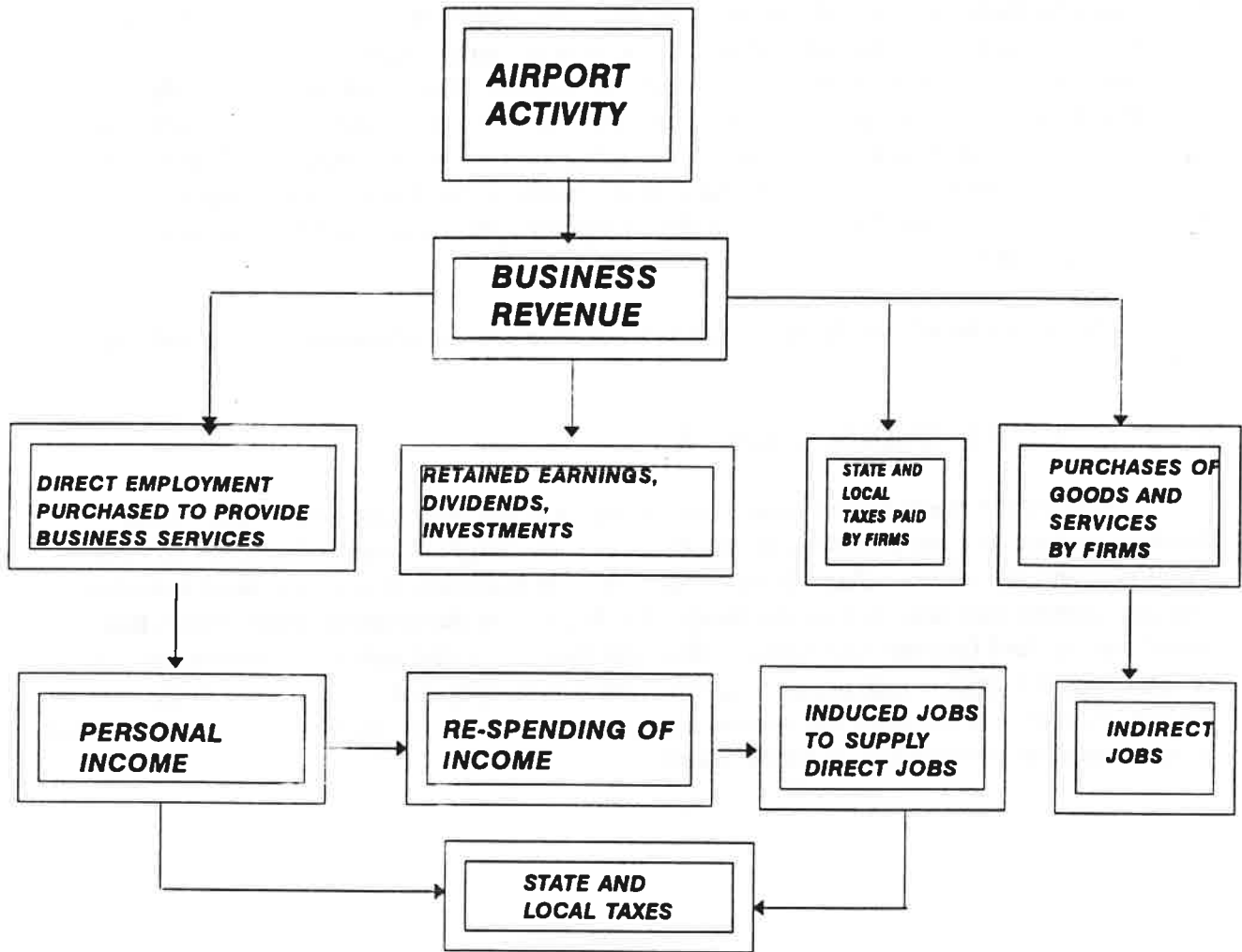
The Port of Oakland retained the services of Martin Associates to measure the economic impact of airport activity generated by Oakland International Airport in 1996. The economic impacts created by the airport are measured in terms of jobs, personal income, state and local taxes, and revenue generated directly by airport activity, including the impact of visitors to the Bay Area who used Oakland International Airport. The impacts of commercial airline passenger activity, air cargo activity, and general aviation activity are measured at both the North Airport and South Airport facilities at Oakland International Airport. The South Airport includes Terminals I and II, related parking facilities, air cargo facilities, the United Airlines maintenance hangar, the air carrier runway and taxiways, and other aviation support facilities. The North Airport includes corporate hangars/general aviation facilities, the Alaska Airlines maintenance hangar, air cargo facilities, T-hangars, and three corporate/general aviation runways and associated taxiways.

The remainder of this chapter provides an overview of the economic impacts and the study methodology.

1. TYPES OF ECONOMIC IMPACTS

Activity at a major airport contributes to the local and state economy by generating business revenue to firms providing air passenger service, freight service and support services to the airport and the airlines. These firms, in turn, provide employment and income to individuals, and pay taxes to state and local governments. Exhibit I-1, on the following page, shows how activity at Oakland International Airport affects the local, state and national economy through revenue impacts, employment impacts, personal income impacts, and tax impacts. These impacts are not additive. For example, the income impact is a part of the revenue impact, so adding these impacts together would result in double counting.

Exhibit I-1
Flow of Economic Impacts Generated by
Airport Activity



1.1 Employment Impact

The employment impact of aviation activity consists of four levels of job impacts.

Direct employment impact - jobs directly generated by airport activity that would vanish if activity at Oakland International Airport were to cease.

Induced employment impact - jobs created throughout the Oakland regional economy because individuals directly employed due to airport activity spend their wages locally on goods and services such as food and housing.

Indirect employment impact - jobs generated due to the purchase of goods and services by firms dependent upon airport activity. These are jobs with such firms as construction contractors, caterers, janitorial and security firms, suppliers of aircraft services, etc. In some studies, impacts in these supplying industries are included as indirect jobs. For purposes of this study, a more detailed assessment of the supplying industries was more appropriate, since many are located on the Airport property, and these impacts with supplying firms are considered as direct jobs. Other purchases by airport-dependent firms are from suppliers not counted as direct impacts. These suppliers include local office supply companies, maintenance and repair firms, business services firms, aircraft parts supply firms, etc. Jobs with these suppliers are counted as indirect jobs.

Related employment impact - jobs with firms using Oakland International Airport for air cargo shipments. Related jobs are not as directly dependent upon the airport as are the direct and induced jobs, but reflect the importance of Oakland International Airport as a catalyst for economic development. At some level of reduced air service, this employment could be lost to other areas.

1.2 Revenue Impact

At the outset, activity at the airport generates business revenue for firms that provide air passenger services, cargo services, general aviation facilities and service, and ground support services. This business revenue is dispersed throughout the economy in several ways: to hire people to provide the services, to purchase goods and services, to pay for the use of airports and to make federal, state and local tax payments. The remainder is used to pay stockholders, retire debt, or make investments, or is held as retained earnings. It is to be emphasized that the only portions of the revenue impact that can be definitely identified as remaining in the Bay Area are those portions paid out in salaries to direct employees, in state and local taxes, and in payments to the Airport itself.

1.3 Income Impact

The direct income impact is the measure of personal income received by individuals directly employed due to airport activity. This income is respent throughout the Bay Area, which in turn generates additional jobs in the state of California -- the induced employment impact. This respending throughout the state is estimated using a state personal income multiplier, which reflects the percentage of purchases that are made within a state. The respending effect varies by state: more respending occurs in states that produce a relatively large proportion of the goods and services consumed by residents, while lower respending effects are associated with states that import a relatively large share of consumer goods and services (since personal income "leaks out" of the state for these purchases).

1.4 Tax Impact

State and local tax impacts are tax payments to the state, county and municipal governments by both firms and individuals involved in providing services in support of airport activity. State and local tax impacts are based on an average tax payment per employee from all types of state, county and municipal taxes. Also included in the tax impact are Federal aviation-specific taxes generated by air passenger and air cargo activity at the Airport.

The four types of impacts outlined above are estimated for 1996 activity at Oakland International Airport.

2. ECONOMIC IMPACT SECTORS

An airport is a diverse economic system. The businesses that have employees at Oakland International Airport cover a spectrum of trade and service sectors. For the purposes of this study, the North and South airport system at Oakland International Airport is divided into five sectors:

- Airline/airport service
- Freight transportation
- Passenger ground transportation
- Contract construction/consulting services
- Visitor industry services.

Each of these sectors is discussed below, with a description of the major participants in each.

2.1 Airline/Airport Service Sector

The airline/airport service sector consists of airlines providing passenger services, general aviation business, and firms providing support services to the airlines, passengers, and the Airport. This group consists of the following participants:

- . **Passenger Airlines**
- . **General Aviation, (e.g., corporate hangars, business aircraft, not-for-profit aviation services, flying clubs, etc.)**
- . **Airport Administration**
- . **Catering Firms**
- . **Janitorial Firms**
- . **Sky Caps**
- . **Security Firms**
- . **Aviation Service Firms (including fixed base operators)**
- . **Airport Retail Tenants (e.g., newsstands, retail shops, and food concessions)**
- . **Federal Government Agencies (e.g., F.A.A. and U.S. Customs)**
- . **Parking and miscellaneous.**

Jobs in this category are typically located on the airport property. The majority of the general aviation activity is located at the North Airport, while all commercial flight operations are at the South Airport.

2.2 Freight Transportation Sector

Freight transportation encompasses the movement of air cargo, which consists of air freight (traditional heavy air cargo and express packages) and U.S. mail transported on dedicated freight airlines and in the cargo section of passenger airlines. Businesses included are:

- . **Cargo airlines**
- . **Freight forwarders**
- . **Passenger airlines**
- . **U.S. Postal Service**
- . **Trucking firms involved in transporting air cargo.**

Jobs in this category are located both on and off the Airport.

2.3 Passenger Ground Transportation Sector

Passenger ground transportation consists of:

- . Car rental firms
- . Buses
- . Taxis
- . Limousines
- . Airport shuttle services
- . Hotel vans

This group covers all transportation of individuals to and from Oakland International Airport and includes both drivers and supporting reservation and maintenance employees.

2.4 Contract Construction and Consulting Sector

Companies in this group are those providing services and materials to Oakland International Airport, including:

- . Construction and remodeling firms
- . Architects and planners
- . Engineers
- . Retail suppliers
- . Service companies
- . Other consultants and vendors.

2.5 Visitor Industry Services Sector

Both domestic and international passengers arrive in the Bay Area via Oakland International Airport for several purposes, including business, pleasure, and conventions. As a result of these out-of-town visitors purchasing lodging, food, and entertainment, jobs are created in the service and retail industries in Oakland and neighboring areas, including:

- . Hotels and motels
- . Restaurants
- . Gift shops
- . Taxi and charter tours
- . Entertainment businesses (e.g. theaters, amusement parks, sporting events, parks, etc.)
- . Travel agents

To evaluate the impacts of visitors in the Bay Area, the results of a 1995 survey of passengers using Oakland International Airport were used. The survey was conducted by the

3. SUMMARY OF METHODOLOGY AND DATA COLLECTION

In order to measure the Airport's impacts in the most defensible manner possible, the methodology utilized is based on interviews, local economic data, and airport statistics; no input/output models are used.

Impacts were estimated on the basis of interviews with firms in the five economic impact categories described above. Exhibit I-2 shows the number of interviews by type of firm.

Exhibit I-2
Summary of Interview Responses

| TYPE OF FIRM | NUMBER OF FIRMS CONTACTED |
|---------------------------------|---------------------------|
| RENTAL CAR COMPANIES | 6 |
| FIXED BASE OPERATORS | 29 |
| CONCESSIONS | 6 |
| SECURITY | 3 |
| PARKING | 2 |
| SKYCAPS | 2 |
| GOVERNMENT | 8 |
| GENERAL AVIATION | 8 |
| AIRPORT HOTEL | 1 |
| IN-FLIGHT CATERING | 1 |
| GROUND TRANSPORTATION | 10 |
| PASSENGER AIRLINES | 11 |
| AIR COURJERS/AIR CARGO AIRLINES | 9 |
| TOTALS* | 96 |

*Freight forwarders/customhouse brokers were interviewed as part of the Martin Associates' 1996 economic impact study of the Oakland Seaport. As part of these interviews, the impacts of air cargo on the forwarding industry were identified and incorporated into this study.

The results of the interviews were then used to estimate directly the baseline impacts of Oakland International Airport in the airline/airport sector, the air freight transportation sector and the ground transportation sector. Data regarding purchases by the Airport from local construction, engineering, service and supply firms were used to estimate the impacts in the construction/consulting sector industries. To estimate the visitor industry impacts, passenger data from a 1995 Metropolitan Transportation Commission survey of air passengers using Oakland International Airport was used to calibrate the Martin Associates visitor industry model. This model uses visitor spending profiles, trip purpose, and length of stay data, with published visitor industry statistics for the Bay Area (developed from the Census of Service Industries and Census of Retail Trade) to estimate direct jobs supported by visitors using Oakland International Airport.

To estimate induced jobs, data from other published sources were used. These sources include U.S. Bureau of the Census publications for the Oakland/San Jose/San Francisco MSA, as well as data from the "Consumer Expenditure Survey, 1994 " conducted by the U.S. Bureau of Labor Statistics. Also, data from the U.S. Bureau of Economic Analysis were used in developing the induced job model.

The baseline data were then used to develop impact models for both the South and North Airports. These Lotus 123 models allow the Port of Oakland to estimate the sensitivity of impacts to changes in passenger levels, aircraft operations, passenger characteristics, labor productivity and work rules, air cargo levels, general aviation operations, and future activity levels. The models can also be used for annual updates and to evaluate the impacts of new airport projects or noise regulations. The Airport models combined with the Seaport model can be used to assist the Port of Oakland in planning and alternative investment decisions.

The methodology used in this analysis has also been used to assess the economic impacts created by airport activity at San Francisco International Airport, San Jose International Airport, Denver's Stapleton International Airport, Seattle-Tacoma International Airport, Hartsfield Atlanta International Airport, Milwaukee's General Mitchell International Airport, Toronto's Lester B. Pearson International Airport, Washington, DC's National and Dulles International Airports, and Portland International Airport. The methodology has also been used to estimate the impacts of more than 70 seaports, including maritime activity at the Port of Oakland. Thus, direct comparisons between these airports as to their contribution to the local, regional and state economies can be made. Similarly, this same methodology has been used to estimate the economic impact of airport maritime activity at Oakland's North and South Airports in 1991, direct comparisons can be made between the results of this current study and the impacts generated by 1991 air passenger, air freight and general aviation activity at Oakland International Airport. Furthermore, since Martin Associates has completed the impact studies for the two other Bay Area commercial airports, San Francisco International and San Jose International Airports, the results of these impact studies could be combined to estimate the total Bay Area commercial airport generated impacts.

II. EMPLOYMENT IMPACTS

In this chapter, the employment generated by 1996 activity at Oakland International Airport is estimated. The chapter is organized as follows:

First, employment that is totally or partially dependent on the activities at Oakland International Airport is estimated. The employment is measured in terms of full-time equivalent jobs. For example, a half-time worker is counted as holding 0.5 jobs.

Second, the subset of total employment that is judged to be totally dependent on airport activity is analyzed in the following ways:

- Jobs are estimated in terms of the four economic impact sectors and by job classifications within these categories. Visitor industry sector impacts are addressed separately in Chapter IV.
- Jobs are estimated by type of airport activity, i.e passenger, general aviation, and air cargo activity.
- Job impacts are allocated to counties within the Bay Area based on the residence of those directly dependent upon airport activity.

Finally, induced jobs are estimated.

1. TOTAL JOB IMPACTS

In 1996, 105,000 Bay Area residents held jobs that were in some way related to activity at the Oakland International Airport. Of those jobs:

10,212 direct jobs are dependent upon activity at the Airport. These jobs would be discontinued immediately if airport activity ceased. Also, these jobs would be impacted as a result of changes in the number of flights and passenger levels. Activity at the South Airport created 8,448 direct jobs, while activity at the North Airport created 1,764 direct jobs.

4,724 induced jobs were created in the state of California due to the purchases of goods and services by those employees holding the direct jobs.

89,478 visitor industry jobs are supported in the Bay Area as a result of visitors arriving via Oakland International Airport (South Airport). Of these jobs, 64,851 jobs are created in hotels, restaurants, retail outlets, entertainment and recreational establishments due to direct expenditures by the visitors. The remaining 24,628

jobs are supported by regional purchases by the individuals holding direct jobs in the visitor industry.

Chapter IV presents a more detailed discussion of the job impacts created due to visitor expenditures.

2. DIRECT JOB IMPACTS

As Exhibit II-1 shows, 62 percent of the 10,212 jobs directly generated by airport activity in 1996 are concentrated in the airline/airport service category, while 32 percent is concentrated with the freight transportation sector. The number of jobs in the other sectors is small in comparison.

Exhibit II-1
Direct Job Impacts by Sector
Oakland International Airport

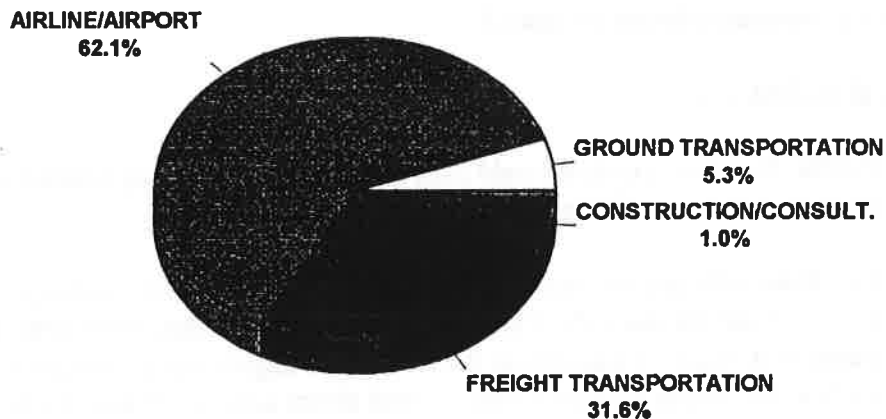


Exhibit II-2 shows the distribution of employment within each major sector. Nearly 4,000 jobs are with passenger airlines. The jobs include ticket agents, ramp employees, management and airline system maintenance facility employees.

Exhibit II-2
Direct Job Impacts by Category

| JOB CATEGORY | DIRECT JOBS |
|---|----------------------|
| <i>AIRLINE/AIRPORT SERVICES SECTOR</i> | |
| PASSENGER AIRLINES* | 3,923 |
| CATERING | 140 |
| GOVERNMENT AGENCIES | 196 |
| PORT OF OAKLAND | 335 |
| SKYCAPS | 108 |
| AVIATION SERVICES/FBO'S | 703 |
| GENERAL AVIATION | 242 |
| RETAIL CONCESSIONS | 136 |
| PARKING | 98 |
| CUSTODIAL/SECURITY | 217 |
| ON AIRPORT HOTELS | 245 |
| SUBTOTAL | <u>6,343</u> |
| <i>FREIGHT TRANSPORTATION</i> | |
| FREIGHT AIRLINES/COURIERS | |
| FREIGHT FORWARDERS | 3,226 |
| SUBTOTAL | <u>3,226</u> |
| <i>GROUND TRANSPORTATION</i> | |
| TAXIS/LIMO/VAN/BUS | 134 |
| RENTAL CARS | <u>407</u> |
| SUBTOTAL | <u>541</u> |
| <i>CONSTRUCTION/CONSULTING</i> | <u>102</u> |
| <i>TOTAL</i> | <u>10,212</u> |

* INCLUDES EMPLOYEES WITH PASSENGER AIRLINES WHO ARE DEDICATED TO AIR FREIGHT

2.1 Direct Job Impacts by Type of Activity

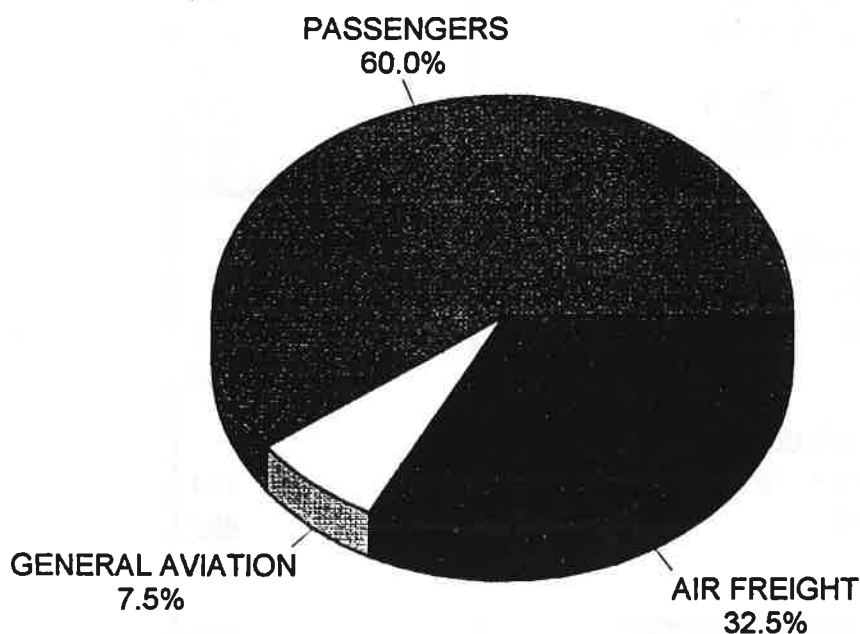
The direct jobs are next allocated to types of activity at Oakland International Airport:

- . Passenger Activity on Commercial Air Carriers
- . General Aviation
- . Air Cargo

Impacts generated with contract construction and consulting firms and local vendors supplying services to the Airport could not be allocated by activity type with the same degree of accuracy as were the other job categories. Hence, these 102 jobs are not allocated by activity type, but only discussed in terms of total direct and induced impacts.

Exhibit II-3 shows the distribution of the direct jobs by type of activity.

Exhibit II-3
Distribution of Direct Jobs by Type of Airport Activity*



* Excludes 102 direct jobs with contract construction and consulting firms and local vendors supplying services and supplies to the Airport. These jobs are, however, included in the direct job impact.

2.1.1 Passenger Activity

A total of 6,071 direct jobs were generated by commercial airline passenger activity in 1996. Of these, 3,868 jobs are with the airlines (another 55 jobs with passenger airlines are dedicated to handling air cargo). These airline jobs include ticket agents, dispatchers, equipment mechanics and technicians, custodial workers who are employees of the airlines (not contractors), airline system maintenance facility employees, and airline management and clerical workers.

Certain jobs are dependent upon the number of flights at Oakland International Airport, while others depend upon the number of passengers at the Airport, and still others, such as those with the Alaska and United Airlines' system maintenance facilities, depend upon airline corporate decisions and airline system activity throughout the U.S.

Therefore, changes in the level of airport activity will not have a proportionate impact on the total number of direct airline jobs. For example, the jobs of airline employees at the two system maintenance facilities are a function of system-wide growth in each airline. In contrast, certain jobs depend solely on the number of flights at Oakland International Airport (e.g. ticket agents, ramp employees, equipment service technicians and dispatchers).

Because of this diversity in the types of local airline employees, it is critical to emphasize that an increase or decrease in flight activity at Oakland International Airport will not result in a proportional change in the number of airline employees. For example, if flights are decreased at the Airport, airline employment could actually increase. This would be the case if the passenger load factor increased for the aircraft still using the Airport, or if the size of planes increased (as more employees are required to service a wide-body aircraft than a narrow-body or commuter aircraft). Similarly, if a specific airline system activity increased, this could, in turn, result in an increase in the number of system maintenance facility employees.

Based on an analysis of employee job classifications for the airlines serving Oakland International Airport, it is estimated that 21 percent of the direct airline employment would be totally dependent upon the actual number of flights and passengers at the Airport. The remaining 79 percent of airline employees consists mainly of system maintenance facility employees with Alaska Airlines and United Airlines.

2.1.2 General Aviation Activity

In 1996, there were 28,166 general aviation operations at Oakland International Airport (North Airport). These operations include landings and take-offs by general aviation aircraft based at the North Airport, as well as transient aircraft operations (i.e., aircraft not based at Oakland). These transient operations include fueling stops and visits by out-of-town travelers using chartered, corporate or privately owned aircraft. The based aircraft pay tie-down and hangar fees to the facility operators, while the transient operators pay fueling charges and other fees based on the length of time at the Airport.

In total, about 758 jobs are directly dependent upon the general aviation activity at Oakland's North Airport.

2.1.3 Air Cargo Activity

In 1996, 655 million pounds of air freight (both air cargo and air express packages) were loaded on commercial air carriers and dedicated air cargo carriers and 631 million pounds of freight were unloaded at Oakland International Airport. About 70 million pounds of U.S. mail were also loaded and unloaded at the Airport. Of the 10,212 jobs directly generated by airport activity, 3,281 are directly generated as a result of air freight, including U.S. mail. As the next chapter indicates, air cargo revenues are much more significant than air cargo jobs.

3. GEOGRAPHIC DISTRIBUTION OF DIRECT JOBS

In order to estimate the local economic impact created by airport activity, data on residency of employees was collected from the interviews with airport tenants, Port of Oakland airport employee records, and interviews with the leading airlines serving the Oakland International Airport. The direct job impact, 10,212 jobs, was then allocated based on county of residence. Exhibit II-4 shows the distribution of job impacts by county. The exhibit indicates that the majority of workers directly dependent upon airport activity reside in Alameda County. Nearly 20 percent of those directly employed live in the City of Oakland, while nearly 8 percent of the 10,212 employees live in the City of Alameda.

Exhibit II-4
Distribution of Job Impacts by
County of Residence

| COUNTY | PERCENT OF DIRECT JOBS |
|---------------|-----------------------------------|
| Alameda | 60.4 |
| Oakland | 18.9 |
| Alameda | 7.51 |
| San Francisco | 1.9 |
| Contra Costa | 10.1 |
| San Mateo | 2.0 |
| Solano | 4.3 |
| Santa Clara | 2.8 |
| Marin | 1.1 |
| Sonoma | .4 |
| Napa | .3 |
| Sacramento | 2.0 |
| Other | 14.7 |
| TOTAL | 100.0 |

4. INDUCED JOB IMPACT

The in-state purchases by the 10,212 direct job holders with the direct income earned from airport activity create additional induced jobs throughout the Bay Area. Furthermore, those individuals supplying the goods and services also receive income from their employers and use a portion of it for additional purchases from firms located in the area. This "trickle-down" effect of an initial income expenditure results in a multiplier effect throughout the Bay Area and state economies known as the personal income multiplier. This income multiplier is discussed in the following chapter, but the resulting induced jobs are measured in this chapter.

This respending effect supports 4,724 additional jobs in the California economy. The distribution of the induced retail, wholesale and service jobs by economic sector is shown in Exhibit II-5.

As this exhibit indicates, the induced impacts are greatest in the state and local government, social services and business and financial sector, followed by the local construction/housing sector and the retail and wholesale food sector.¹

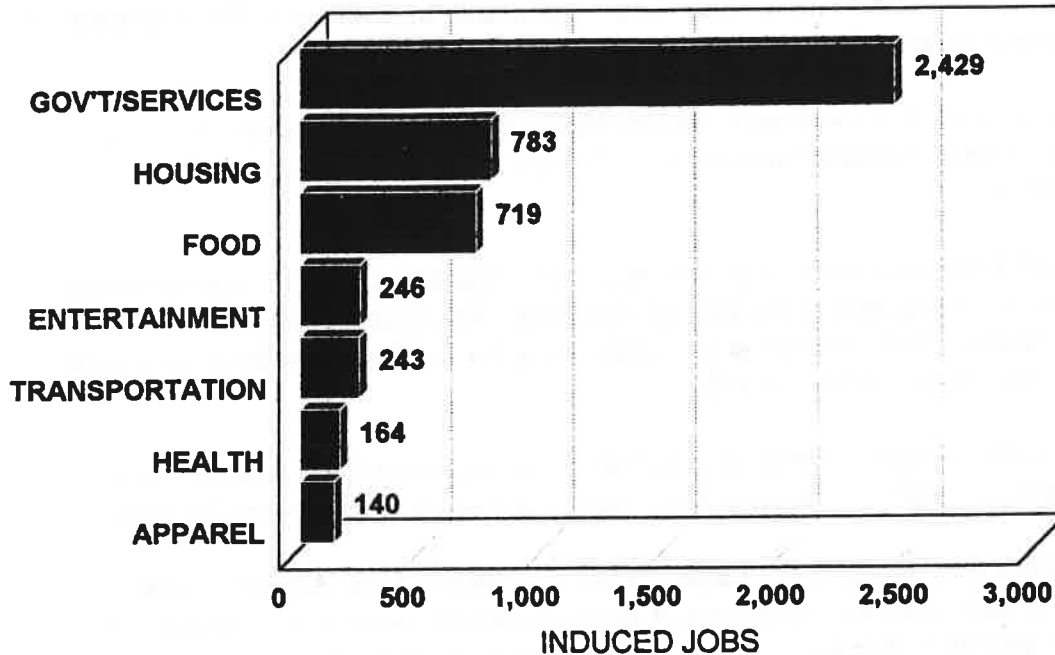
5. INDIRECT JOBS

In addition to these induced jobs created due to purchases by the 10,212 individuals directly employed due to activity at Oakland International Airport, additional jobs in the Bay Area economy will be created indirectly due to the purchase of goods and services by the firms involved in airport activity. For example, airlines purchase such items as fuel, catering services, parts and office supplies from local firms, thereby creating jobs in these supplying industries. Similarly, the Airport itself purchases such services as contract construction, utilities, and maintenance services from local suppliers, also creating jobs in the local economy. For the most part, the jobs resulting from such purchases are included in the direct job impacts (see Exhibit II-2). For example, the 140 jobs with caterers, the 703 jobs with suppliers of aircraft services, (including fixed based operators, fuel handlers, and parts suppliers), and the 102 jobs with contract construction and consulting firms and local vendors are all included as direct job impacts.²

¹The 2,429 jobs generated in the local and state government, financial, business and social services sector include jobs with city, county and state governments, schools, real estate firms, legal firms, day care services, banks, and other service associations. To estimate this impact, the ratio of California jobs in these sectors to the total in-state employment was estimated and multiplied by the sum of direct and induced jobs.

²In some studies, impacts in these supplying industries are included as indirect jobs and measured through the use of a regional input-output multiplier. For purposes of this study, a more detailed assessment of jobs in the supplying industries was more appropriate since many are located on the airport facility and these impacts are considered as direct job impacts.

Exhibit II-5
Distribution of 4,724 Induced Jobs



Jobs generated in these service oriented firms are the result of the first round of purchases by the airlines and the Airport. A second round of purchases then occurs by these service firms in the form of inventory purchases. For example, catering firms purchase food, janitorial firms purchase cleaning supplies, security services purchase uniforms and rental car agencies purchase parts and fuel. This second round of purchases creates additional jobs that are not measured by the direct job impact. Also, the airport-dependent firms purchase goods and services from local vendors that are not included in the direct impacts. Based upon the surveys of airport dependent firms, a total of \$118.8 million of additional local purchases were made for office supplies, utilities, business and maintenance and repair services, fuel purchases from local transportation and for courier deliveries, etc. These \$118.8 million of purchases supported an additional 1,378 indirect jobs in the Bay Area Economy. These indirect jobs would be lost from the economy should the \$118.8 million of local purchases cease and not replaced by purchases from another industry.

III. REVENUE, INCOME AND TAX IMPACTS

In this chapter, the revenue, income and tax impacts generated by activity at Oakland International Airport are estimated. Some of the significant findings are:

- . In 1996, Oakland International Airport generated \$3.8 billion in direct revenue for businesses providing aviation services.
- . Air cargo activity is directly responsible for \$2.5 billion of business revenue, followed by passenger activity at \$1.2 billion and general aviation activity at \$112 million.
- . \$297.1 million was distributed from aviation-related business revenue as personal income to residents of the state of California. Respending of that income resulted in another \$309.7 million in personal income for California residents, for a total income impact of \$606.8 million.
- . In 1996, Oakland International Airport generated \$94 million in state, county and municipal taxes, and another \$86.3 million in Federal aviation-specific taxes.

The movement of passengers and cargo via Oakland International Airport generates revenue for firms in each of the five categories of airport-related activity. For example, in the airline/airport service sector, revenue is received by catering firms providing services to the airlines and by airport tenants who sell retail merchandise to passengers in the Airport. In the freight transportation sector, airlines receive revenue from transporting air cargo and freight forwarders receive revenue from arranging air transportation for the cargo. Similarly, rental car agencies and the firms providing ground transportation receive revenue from transporting passengers to and from the Airport, while contract construction and consulting firms receive revenue from the Airport and airlines that have contracted for their services. In the visitors industry sector, local service and retail firms receive revenue from passengers visiting the Bay Area. (This sector is discussed in detail in Chapter IV.)

Revenue generated by airport activity is dispersed through-out the economy in several ways. For example, gross revenue is used to pay employee salaries and a variety of taxes, it is distributed to stockholders, and it is used for purchases of goods and services (as described in the discussion of indirect job impacts in the last chapter). The portion of this revenue that can be traced geographically with any degree of accuracy is the portion paid out in salaries, used for local purchases of goods and services, and for the payment of state and local taxes. These impacts are addressed in separate sections of this chapter.

1. REVENUE IMPACT

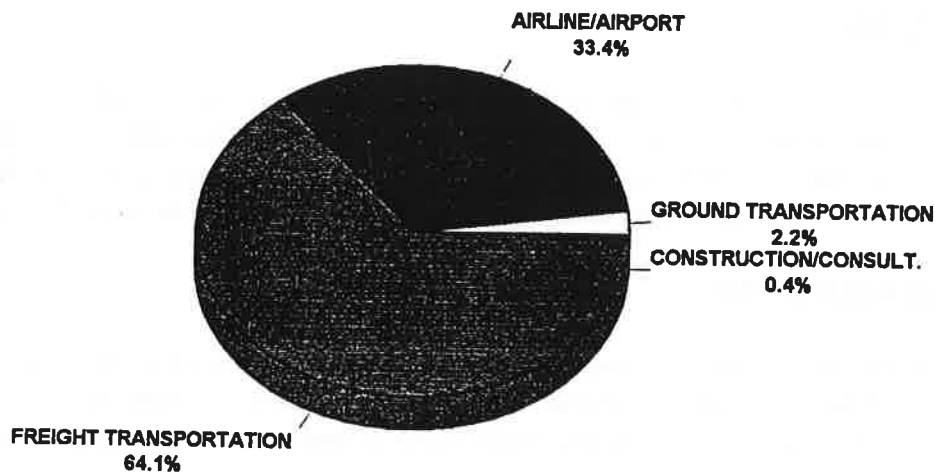
It is useful to estimate the revenue received by each category of firms involved with airport activity because the distribution is quite different from that of employment. In addition, airline user fees paid to the Airport represent local impacts. In 1996, airlines paid more than \$10 million in landing fees to Oakland International Airport to pay for a part of the airport operations.

1.1 Revenue Impact by Sector

In 1991, activity at Oakland International Airport generated about \$3.8 billion of business revenue. Commercial passenger activity and air cargo activity at the South Airport generated \$3.6 billion of this \$3.8 billion revenue impact, while North Airport operations generated about \$200 million.

Exhibit III-1 indicates the distribution, by economic impact sector, of the total \$3.8 billion of revenue generated by airport activity at Oakland International Airport.

**Exhibit III-1
Distribution of Revenue
by Sector**



The importance of air cargo in terms of generating revenue to the freight forwarders, air couriers and air carriers is underscored by the fact that while 31 percent of the direct jobs are generated by air cargo activity, more than 60 percent of the \$3.8 billion revenue impact is created by the movement of air cargo via Oakland International Airport. In contrast, while 62 percent of the direct jobs are generated in the airline/airport sector, firms in this sector receive about one-third of the \$3.8 billion of business revenue. The relatively high revenue yield per employee resulting from the transportation of air cargo reflects the premium paid for air shipment of these high-value, low-bulk goods.

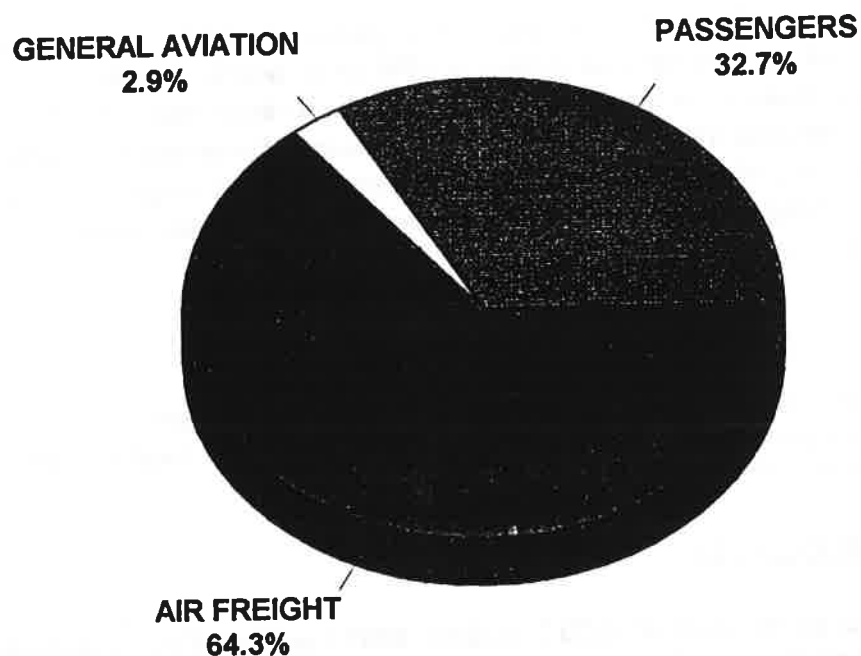
1.2 Revenue Impact by Type of Activity

The \$3.8 billion revenue impact is allocated by the type of airport activity :

- Passenger Activity
- General Aviation Activity
- Air Cargo Activity

Exhibit III-2 shows the distribution of the revenue impacts by type of activity.

Exhibit III-2
Distribution of \$3.8 Billion Revenue Impact
by Airport Activity *



*Excludes \$13.3 million of business revenue received by construction and consulting firms and other local vendors of services to the Airport.

1.2.1 Passenger Activity

Passenger activity at Oakland International Airport generated \$1.3 billion of revenue to business providing services to passengers on commercial airlines. The majority of this revenue impact, 87 percent, was received by the airlines from passengers enplaning at Oakland. This is based on an estimated revenue per enplaning passenger provided to Martin Associates during the airline interviews, as well as revenue generated from retail concessions, passenger ground transportation, sky caps and security operations.

1.2.2 General Aviation Activity

About \$112 million of business activity was generated by the general aviation operations in 1996. This revenue includes hangar fees, tie-down fees, purchase of parts

and fueling charges paid by transient and based operators. This revenue estimate is based on interviews with the general aviation operators at Oakland International Airport.

1.2.3 Air Cargo Activity

The 655 million pounds of air freight and express packages, and 35 million pounds of air mail loaded at Oakland International Airport in 1996 generated \$2.5 billion of revenue to the airlines, trucking companies and couriers. The revenue impact for the air cargo is based on an estimated transportation revenue per pound of enplaned air freight, express packages and mail, which was derived from interviews with air cargo airlines and commercial airlines carrying air cargo. This transportation revenue estimate does not include the value of the goods shipped via air.

1.3 Local Purchases

In 1996, the firms directly dependent upon airport activity at Oakland International Airport made \$118.8 million of purchases for goods, supplies and services from local vendors. These local purchases supported 1,378 indirect jobs with the local vendors.

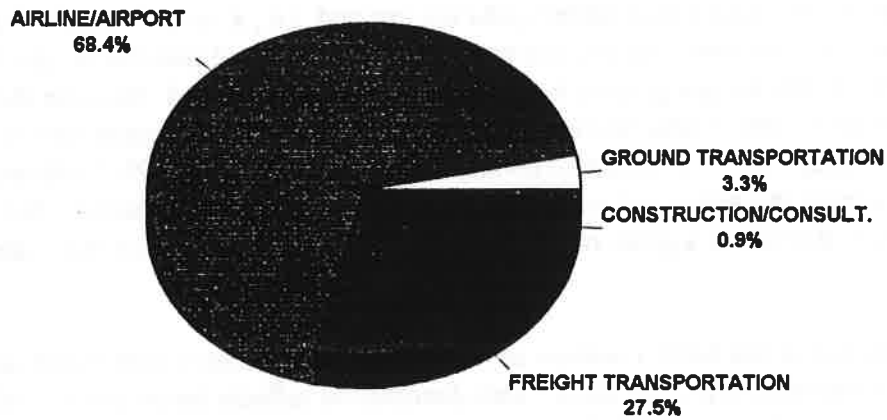
2. PERSONAL INCOME IMPACTS

As a result of the direct employment of 10,212 workers, \$297.1 million of direct wage and salary income was created. Activity at the South Airport generated \$250.6 million of this income, while North Airport activity created the remaining \$46.5 million. The respending of this \$297.1 million of direct personal income within the Bay Area creates additional induced jobs (see Chapter II), with an additional \$309.7 million of personal income and consumption purchases within the state.

Respending of income within a region is measured by a regional income multiplier. The size of the multiplier varies by state depending on the proportion of in-state goods and services purchased by individuals. The higher this percentage, the lower the income leakage out of the state. Based on data provided by the Bureau of Economic Analysis, for every one dollar earned by individuals in the state of California, \$.51 is spent in the region, resulting in an eventual total of \$1.04 additional spending for every dollar initially received in wages and salaries.¹ This

¹According to the Bureau of Economic Analysis, U.S. Department of Commerce, for every one dollar earned in California, 51 percent is spent on goods and services within the area, while the remaining 49 percent is used to purchase items produced out-of-state, to pay federal, state and local taxes, or held as savings. The full income multiplier effect results from successive rounds of respending. For example, in the initial round, one dollar is earned. Of that \$1.00, \$.51 is used to purchase goods and services. Of that \$.51, 51 percent, or \$.26, will be used for the next round of purchases. Of this \$.26, again 51 percent, or about \$.13, will be used for further in-state

Exhibit III-3
Distribution of Personal Income by Sector



2.1 **Personal Income Impact by Type of Activity**

The distribution of the \$297.1 million direct personal income impact by type of activity is presented in Exhibit III-4, on the following page.

responding impact is known as the personal income multiplier. Hence, the personal income multiplier for the state of California is 2.04. Therefore, the total income and consumption impact of airport activity in 1996, including responding, was \$606.8 million.²

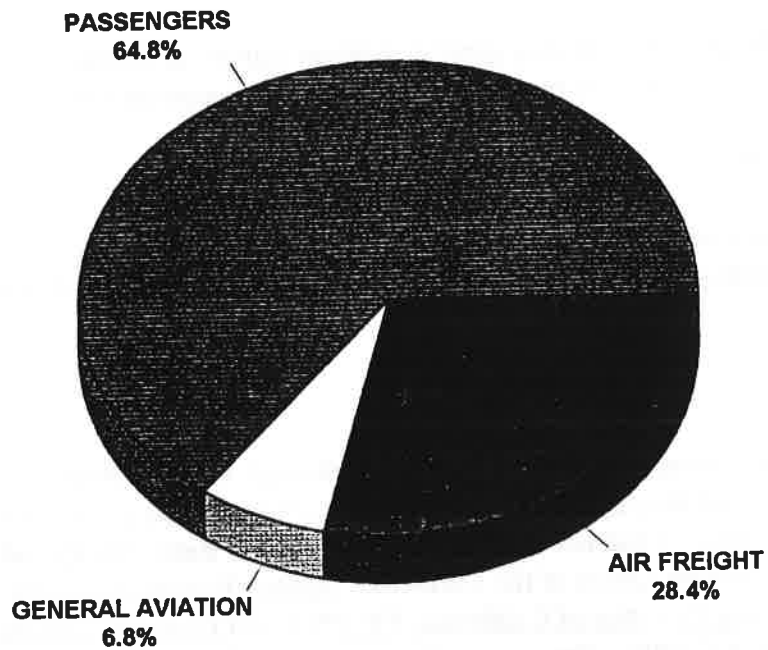
It is to be emphasized that the responding effect measures the total responding impact in the state. The induced jobs, which are generated by this responding of the direct income, only include jobs generated at the retail and wholesale level due to consumer purchases, since it is assumed that these jobs will most likely occur in the Bay Area. As a result of spending by persons holding these jobs, more induced and indirect jobs are created, i.e., a second round of induced and indirect jobs. These second level jobs are not estimated, since it is not possible to identify with any degree of defensibility the geographic location where they are created. Because the total number of induced and indirect jobs (second, third and fourth levels, etc.) generated by airport activity is not estimated, it is not possible to divide the induced income (\$309.7 million) by the induced jobs to estimate the salary and wage income associated with the induced jobs (4,724 jobs). To do so would result in a gross overestimation of the personal income associated with the induced jobs.

The distribution of the \$297.1 million of direct personal income is distributed among the airport sectors as illustrated in Exhibit III-3. This distribution reflects the relatively higher paying jobs with airlines; 68 percent of the income impact is concentrated in the airline/airport service category compared to 62 percent of the employment impact.

purchases. These successive responding rounds will continue until an additional \$1.04 of spending in the state is generated for every dollar of income. At each stage of the responding, additional jobs are created. These are the induced jobs estimated in the previous chapter. However, to ensure defensibility, not all levels of induced jobs are estimated in this report.

² 2.04 multiplied by the direct income impact of \$297.1 million.

Exhibit III-4
Distribution of Personal Income Impact
by Airport Activity*



*Excludes \$2.7 million of wage and salary income earned by contract construction/consulting employees, and employees with vendors supplying services to the Airport.

2.1.1 Passenger Activity

Passenger activity generated 6,071 direct jobs. These direct employees received \$190.7 million of personal income.

2.1.2 General Aviation Activity

The 758 jobs directly generated by general aviation activity at Oakland International Airport (North Airport) received \$20.2 million in wages and salaries.

2.1.3 Air Cargo Activity

In 1996, air cargo activity at Oakland International Airport created 3,281 direct jobs. These directly employed individuals in turn received about \$83.5 million in annual salaries and wages.

3. TAX IMPACTS

Airport activity in 1996 generated government revenue through an assortment of tax payments by Airport businesses and employees. The tax impacts are estimated at the state, county and local government levels. Total tax revenues collected at the state, county and municipal levels are collected from the Office of the Controller, Annual Report, 1995, the Financial Transactions Concerning Counties of California, FY 1994, and Financial Transactions Concerning Cities of California, FY 1994. These are collections from all sources (firms and individuals and include intergovernmental transfers). An index is then developed by dividing total tax receipts at each level of government (state, county and municipal) by total state employment. These indices are then multiplied by the direct and induced job impacts to estimate the state, county and local tax impacts generated by airport activity at Oakland.

The state, county and local taxes for which estimates have been developed include:

- . State and local income tax
- . State sales tax
- . Motor vehicle registration and licensing tax
- . State motor fuel tax
- . County property taxes
- . Local City taxes such as the possessory interest tax, utility consumption tax, sewer service charge tax, and business license tax are included.

Using these tax burdens, it is estimated that airport activity at Oakland International Airport generated \$93.9 million of state, county and local taxes. Of this amount, \$50.4 million were state tax receipts, nearly \$16 million of tax revenues were received by counties and \$27.6 million were received by local governments.

Federal aviation-specific taxes are estimated for domestic passengers boarding flights at Oakland International Airport, for international passengers using the Airport and for air freight loaded on planes at the Airport. The Federal aviation-specific taxes on freight and domestic passengers are paid to the Federal Aviation Trust Fund. Federal taxes, other than aviation-specific ones, are not estimated for this study. During 1996, these Federal aviation-specific tax collections were suspended from January 1996, through August 1996. Therefore, the taxes collected only represent the collections for one-third of the year. Federal aviation-specific taxes were estimated based on the appropriate tax formulas. The domestic passenger tax is based on a 10 percent tax on enplaned domestic passenger revenue (excluding passenger travel to Alaska and Hawaii). The international departure tax is based on \$6.00 per enplaning passenger, while the INS/Customs tax is based on a \$10.00 tax per deplaning passenger. The Federal Air Cargo Tax is based on a 6.25 percent tax levy on the total air freight charges per shipment of enplaned air cargo. The average freight charge of air cargo was provided to Martin Associates by air cargo carriers. As a result of the airport activity, \$86.3 million in tax revenues were paid to the Federal Government during the last four months of 1996.

4. PORT FINANCIAL CONTRIBUTIONS TO THE CITY OF OAKLAND

In addition to tax impacts, the Port of Oakland makes direct financial contributions to the City of Oakland. Over the past 10 years (1984/85 through 1994/95) the Port's Board has transferred \$80.3 million from the Port Revenue Fund to the City of Oakland General Fund. By law, a transfer may be made only if there is a legally valid obligation and (with the exception of special services payments) only from Port funds that the Board determines are surplus and not required for any other Port purpose.

IV. VISITOR INDUSTRY IMPACTS

In this chapter, the economic impacts generated by visitors to the Bay Area who use Oakland International Airport are estimated. The impacts include:

About 2.2 million visitors to the Bay Area used Oakland International Airport in 1996; business travelers accounted for 22 percent of the total and pleasure travelers for 78 percent.

Spending by the Airport's visitors directly supports 64,851 jobs in the Bay Area and is responsible for another 24,628 induced jobs in the state.

During 1996, Oakland-area visitors generated about \$4.3 billion in direct revenue for the visitor industry businesses.

\$1.1 billion was distributed from visitor industry revenue as personal income to local residents. Respending of that income resulted in another \$1.1 billion in personal income and consumption expenditures for California residents, for a total income impact of \$2.2 billion.

In 1996, Oakland International Airport visitors generated \$563 million in state and local taxes.

The impact of visitors on the local and regional economy is measured in terms of jobs, income, revenue and taxes created in the hotels, retail establishments, entertainment activities, and transportation service firms.

Individuals visit the Bay Area for a variety of reasons, including business and pleasure trips. These visitors pay for hotel rooms, meals and entertainment, and buy retail goods while in the Bay Area. These purchases stimulate the local economy by generating visitor industry jobs. Respending of income received by those employees in turn generates induced jobs in the region.

The magnitude of the economic impact generated by visitors using Oakland International Airport depends on:

- . the number of out-of-town visitors
- . the length of time spent in the Bay Area
- . the amount of money spent daily by visitors
- . the type of purchases made.

These factors are in turn characterized by the visitors' trip purpose (business or pleasure) and origin (domestic or international).

To estimate the economic impact of visitors arriving via Oakland International Airport, the results of a 1995 passenger survey undertaken by the Metropolitan Planning Commission were used to develop passenger characteristics, including trip purpose, spending patterns, connecting versus origin/destination passengers, visitors versus area residents, and length of time spent in Oakland and the Bay Area.

In 1996, about 4.9 million passengers boarded commercial aircraft at Oakland International Airport. Of those, about 8.7 percent were connecting to other flights at the Airport, and spent no time in the Bay Area as part of the trip. About 49.6 percent, or 2.2 million of the enplaning passengers were not residents of the Bay Area. It is the travel and spending characteristics of these 2.2 million non-resident visitors that will contribute to the local and state economy through lodging, retail purchases, eating in restaurants, and local transportation services.

Exhibit IV-1 shows the total expenditures per trip by purpose of trip. As this table indicates, domestic pleasure travelers spend almost 80 percent more per trip than domestic business travelers in the Bay Area, and both foreign business travelers and foreign pleasure travelers spend more per trip than domestic business travelers.

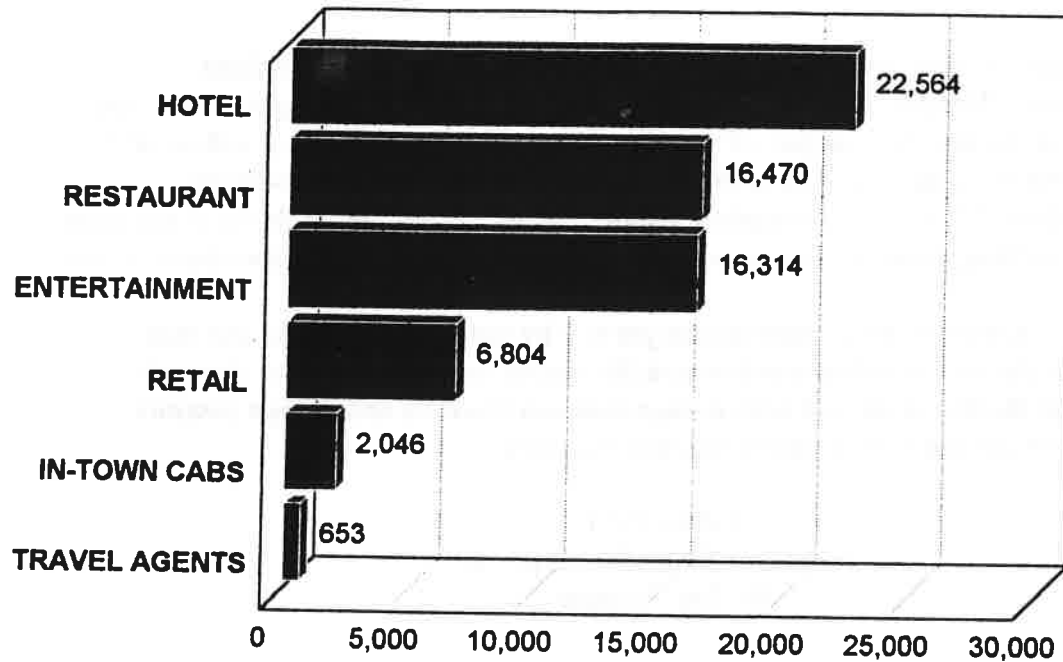
Exhibit IV-1
Total Visitor Expenditures per Trip
By Trip Purpose

| TRIP PURPOSE | EXPENDITURES PER TRIP |
|------------------------|--------------------------|
| Domestic Business | \$1,176 |
| Domestic Pleasure | \$2,159 |
| International Business | \$1,838 |
| International Pleasure | \$1,383 |

1. DIRECT AND INDUCED JOB IMPACT

The 2.2 million visitors arriving via Oakland International Airport in 1996 spent an estimated \$4.3 billion in the Bay Area for lodging, food, entertainment, and transportation. This spending supported 64,851 jobs in the Bay Area. Exhibit IV-2 summarizes these direct visitor industry job impacts.

Exhibit IV-2
Direct Job Impact Due to the Visitors
Industry

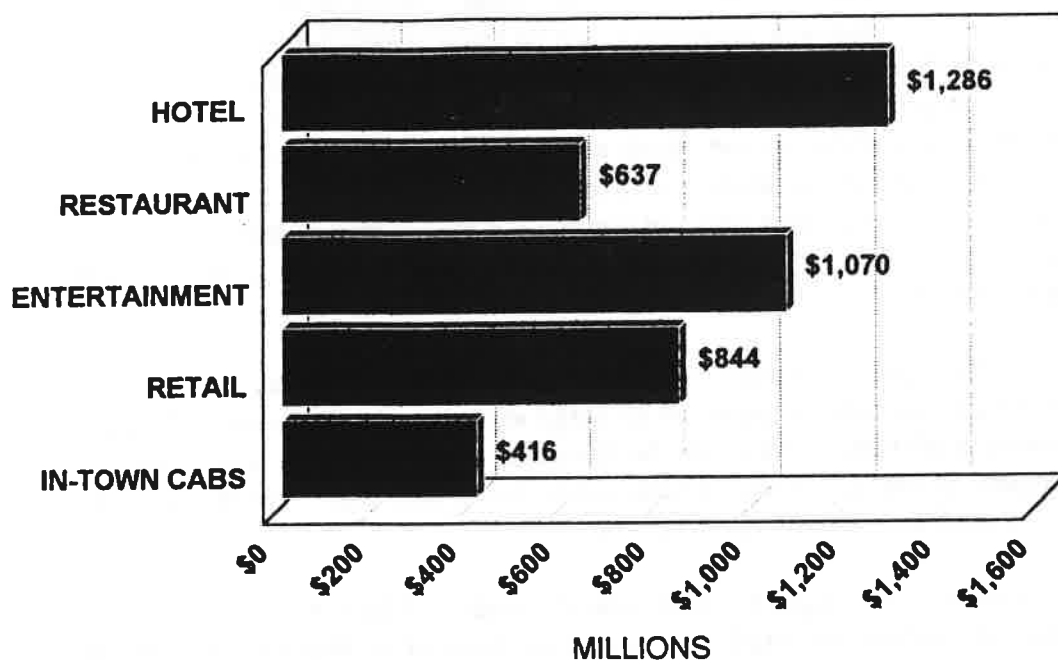


The majority of the impacts are generated in Bay Area hotels, followed by jobs with Bay Area restaurants and local entertainment suppliers (including movie theaters, amusements, sporting events, clubs, national and state parks, museums, and escorted tours, etc.). About 6,800 jobs are created with local retail vendors, with 2,046 jobs supported in the local transportation industry, primarily with cabs and buses. Finally, more than 650 jobs with local travel agents are supported by the purchases of tickets by local residents using Oakland International Airport. (These travel agency jobs are not generated by visitors to the area but are included with the visitor industry job impact since travel agents are part of that industry).

2. BUSINESS REVENUE IMPACT

The purchases made by visitors to the Bay Area through Oakland International Airport in 1996 generated \$4.3 billion dollars of business revenue to hotels, restaurants, retail outlets, entertainment establishments and local transportation firms. The distribution of the business revenue by visitor sector industry is shown in Exhibit IV-3. As this exhibit demonstrates, visitors using the Airport generated \$1.3 billion for Bay Area hotels, \$1.1 billion for local entertainment establishments, \$844 million to local retail stores, and \$637 million for area restaurants.

Exhibit IV-3
Distribution of Visitor Industry Purchases



3. PERSONAL INCOME AND TAX IMPACTS

The 64,851 individuals directly employed in the Oakland area visitor industry as the result of expenditures by visitors received \$1.1 billion in wages and salaries. A portion of this personal income was used for regional purchases of goods and services, creating induced jobs. Applying the personal income multiplier described in Chapter III, the total income impact, including respending of \$1.1 billion, is \$2.2 billion due to visitors arriving via Oakland International Airport.

As a result of the respending of the \$1.1 billion of direct personal income due to visitors arriving via the Airport, 24,628 jobs were induced within the state of California.

Finally, as a result of the visitors arriving via Oakland International Airport, \$563 million of state and local taxes were generated.

V. RELATED JOBS

In this chapter, jobs related to, but not dependent upon, Oakland International Airport are estimated. These related jobs should be viewed only as an indicator of the importance of Oakland International Airport to the local business community. It is to be emphasized that the level of defensibility of the related jobs is lower than for the direct and induced jobs, primarily due to the fact that the results of other published studies are used rather than a 100 percent survey of all current, past and potential users of the Airport. Such a 100 percent survey would require resources not in the scope of the current study. Furthermore, since related jobs are not based on a survey of Airport users, Martin Associates does not recommend that related jobs be considered when using the airport impact model to evaluate planning decisions. With these caveats in place, the remainder of the chapter provides an overview of the Airport related jobs.

About 246,500 related jobs are associated with air cargo users of Oakland International Airport. These shippers also use other airports for air cargo shipments, so they are not directly dependent upon Oakland in the same sense as are the firms that supply direct services to the airlines and/or passengers. However, the use of Oakland International Airport by these shippers is important in stimulating economic activity in the region.

The results of a study of air freight shippers recently conducted for the Aviation Department of the state of Virginia estimated that the average value of air shipments is about \$40 per pound.¹ Multiplying this value per pound estimate by the 655 million pounds of air freight enplaned at Oakland International Airport in 1996, it is estimated that the total value of air cargo shipped via Oakland in 1996 was about \$26.2 billion. A recent survey of national air freight shippers by Martin Associates indicated that .00946 jobs are related to every \$1,000 of air freight value.² Using this ratio, it is estimated that about 246,500 jobs are related to air cargo shipments via Oakland International Airport.

In conclusion, it is to be emphasized that these jobs are related to, but not dependent upon, Oakland International Airport. The level of employment with these users is determined by the demand for the firms' products, not the use of Oakland International Airport.

¹The Local and Regional Economic Impact of National and Dulles International Airports, prepared by Martin O'Connell Associates for the Metropolitan Washington Airports Authority, December 4, 1996.

²Ibid.

VI. COMPARISON OF ECONOMIC IMPACTS

The same methodologies were used to estimate the 1991 and 1996 impacts generated by airport activity at Oakland International Airport. Therefore, direct comparison between the results of these studies can be made.

1. COMPARISON OF OPERATIONAL FACTORS

Between 1991 and 1996, total passengers using the airport increased 56 percent, from 6.2 million passengers in 1991 to 9.7 million passengers in 1996. Air freight (excluding mail) enplaned increased by 160 percent, from 244.7 million pounds in 1991 to 655.7 million pounds in 1996.

Table VI-1
Comparison of Passenger and Air Cargo Activity

| | 1991 | 1996 |
|--|--------------------|--------------------|
| TOTAL PASSENGERS | 6,181,251 | 9,734,859 |
| ENPLANED AIR FREIGHT (POUNDS) | 244,666,749 | 655,743,790 |

2. COMPARISON OF AIRPORT-SITE GENERATED JOBS

Airport-site generated impacts are described in this section. Table VI-2, on the following page compares the impacts between 1991 and 1996. As this table indicates, total direct and induced jobs increased over the period, from 8,835 jobs in 1991 to 14,936 jobs in 1996. Direct jobs grew by about 66 percent, from 6,134 jobs in 1991 to 10,212 direct jobs. Induced jobs increased due to several factors. First, 1996 induced jobs include a component of state and local government jobs that was not available in 1991. Also, the personal income increased, resulting in an increase in induced jobs. Furthermore, the re-spending multiplier increased, from 1.95 to 2.04, as reported by the Bureau of Labor Statistics. Hence, the overall "purchasing power" of the jobs increased slightly, creating a larger re-spending impact and induced job impact per direct job than was the case in 1991. Indirect jobs were not included in the 1991 study.

Personal income increased from \$418 million in 1991 (including re-spending) to \$606.8 million, a 45 percent increase. Between 1991 and 1996 the Consumer Price Index for the Bay Area increased by about 10 percent. Therefore, after controlling for inflation, real income increased by about 32 percent over the 1991-1996 period.

Business revenue more than doubled over the 1991-1996 period, from about \$1.7 billion in 1991 to about \$3.8 billion in 1996. When controlling for inflation, the real business revenue doubled over the period, reflecting the growth in passenger and air freight activity since 1991 and the increase in revenue per enplaned passenger over the same period.

State and local taxes more than doubled from \$42.5 million in 1991 to \$93.9 million in 1996, a 120 percent increase. After controlling for inflation, the state and local tax revenue increased by about 100 percent over the 1991-1996 period. A comparison of the federal aviation taxes is not possible due to the suspension of the tax collection by the Federal Government from January 1996 through August 1996.

Table VI-2
Comparison of On-Site Airport Impacts
1991-1996

| IMPACT CATEGORY | 1996 | 1991 |
|---|----------------|----------------|
| JOBS | | |
| DIRECT | 10,212 | 6,134 |
| INDUCED | 4,724 | 2,701 |
| INDIRECT | <u>1,378</u> | <u>NA</u> |
| TOTAL | <u>16,314</u> | <u>8,835</u> |
| PERSONAL WAGE/SALARY INCOME (MILLION \$) | | |
| DIRECT | \$297.1 | \$214.4 |
| RE-SPENDING | <u>\$309.7</u> | <u>\$203.6</u> |
| TOTAL | <u>\$606.8</u> | <u>\$418.0</u> |
| BUSINESS REVENUE (MILLION \$) | \$3,842.9 | \$1,747.2 |
| STATE/LOCAL TAXES (MILLION \$) | \$93.9 | \$42.5 |
| FEDERAL AVIATION TAXES (MILLION \$) | \$86.3 | \$111.7 |

3. COMPARISON OF DIRECT JOBS

Table VI-3, on the following page, compares the direct employment in 1991 and 1996, by detailed job category. Exhibit VI-3 shows the changes in direct jobs by detailed job category. Overall, direct jobs increased by 4,078 since 1991. Job increases with air freight handling and airline employees account for 90 percent of the total direct jobs gain, with a 2,174 job increase associated with handling air freight and a 1,497 job increase with passenger airline employees. The only decline in jobs over the 1991-1996 period was with fixed base operators and aviation service firms, and the majority of these losses occurred at North Airport.

Due to the use of the other Bay Area passenger data to estimate the indirect impacts for the 1996 visitor industry impacts, direct comparisons with the 1991 visitor industry impacts cannot be made with the same level of defensibility as the direct jobs. After a new passenger survey at Oakland International Airport is completed, the updated passenger spending and length of stay characteristics will be entered into the model. At this time, comparisons can be made for changes in visitor industry characteristics from this new baseline.

Table VI-3
Comparison of Direct Job Impacts
1991-1996

| JOB CATEGORY | 1996 | 1991 |
|---|----------------------|---------------------|
| <i>AIRLINE/AIRPORT SERVICES SECTOR</i> | | |
| PASSENGER AIRLINES* | 3,923 | 2,426 |
| CATERING | 140 | 109 |
| GOVERNMENT AGENCIES | 196 | 184 |
| PORT OF OAKLAND | 335 | 341 |
| SKYCAPS | 108 | 40 |
| AVIATION SERVICES/FBO'S | 703 | 934 |
| GENERAL AVIATION | 242 | 221 |
| RETAIL CONCESSIONS | 136 | 114 |
| PARKING | 98 | 66 |
| CUSTODIAL | 217 | 112 |
| ON AIRPORT HOTELS | <u>245</u> | <u>NA</u> |
| SUBTOTAL | <u>6,343</u> | <u>4,547</u> |
| <i>FREIGHT TRANSPORTATION</i> | | |
| FREIGHT AIRLINES/COURIERS | | |
| FREIGHT FORWARDERS | <u>3,226</u> | <u>1,052</u> |
| SUBTOTAL | <u>3,226</u> | <u>1,052</u> |
| <i>GROUND TRANSPORTATION</i> | | |
| TAXIS/LIMO/VAN/BUS | 134 | 88 |
| RENTAL CARS | <u>407</u> | <u>276</u> |
| SUBTOTAL | <u>541</u> | <u>364</u> |
| <i>CONSTRUCTION/CONSULTING</i> | <u>102</u> | <u>171</u> |
| <i>TOTAL</i> | <u>10,212</u> | <u>6,134</u> |

* INCLUDES EMPLOYEES WITH PASSENGER AIRLINES WHO ARE DEDICATED TO AIR FREIGHT