A Feasibility Study of a Private Entity Competing with FBOs for Airline Ground Handling Contracts

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A FEASIBILITY STUDY OF A PRIVATE ENTITY COMPETING
WITH FBOs FOR AIRLINE GROUND HANDLING CONTRACTS

by

Carlos A. Vergas

A Thesis Submitted to the
Office of Graduate Programs
in Partial Fulfillment of the Requirements for the Degree of
Master of Business Administration in Aviation

Embry-Riddle Aeronautical University
Daytona Beach, Florida
December 1993
UMI Number: EP31862

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A FEASIBILITY STUDY OF A PRIVATE ENTITY COMPETING WITH FBOs FOR AIRLINE GROUND HANDLING CONTRACTS

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Carlos A. Vergas

This thesis was prepared under the direction of the candidate's thesis committee chairman, Dr. Thomas Tacker, Department of Aviation Business Department, and has been approved by the members of his thesis committee. It was submitted to the Office of Graduate Programs and was accepted in partial fulfillment of the requirements for the degree of Master of Business Administration in Aviation.

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ACKNOWLEDGEMENTS

The author wishes to express special thanks to the Thesis Chairman, Dr. Thomas Tacker, whose helpful counsel was crucial to the successful outcome of this thesis. Pat Everson, as an employer, has given the researcher the flexibility to make long distance phone calls and to send and receive fax documents. Dr. Bijan Vasigh and Professor William Chamberlin are appreciated for their statistics and accounting inputs. Professor Teresa Thamer is thanked for her guidance and positive outlook. Dr. Bruce Chadbourne and Professor Rudolf Knabe are appreciated for the role of fine-tuning the thesis.

This statement of acknowledgements would be incomplete without a formal expression of appreciation and gratitude to the author's wife, Paula Vergas, for providing the encouragement as well as the aid in monetary support to successfully complete the requirements of the graduate degree.
ABSTRACT

Author: Carlos A. Vergas

Title: A Feasibility Study of a Private Entity Competing with FBOs for Airline Ground Handling Contracts

Institution: Embry-Riddle Aeronautical University

Degree: Master of Business Administration in Aviation

Year: 1993

This thesis investigates whether a private entity can compete with fixed base operators (FBOs) for airline ground handling contracts. Separating the research method into five phases, the author first conducts a need analysis. Then, the author dissects the structure of existing ground handling contracts. Thirdly, the average service charges presently in place are tabulated. Fourthly, a financial analysis is performed including the calculation of the break-even point at a profit. Finally, a model of ground handling operation is simulated using an existing air carrier’s ground handling contract.
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CHAPTER I
INTRODUCTION

A. Problem Statement

The purpose of this study is to determine if a private entity can compete at a profit with fixed base operators (FBOs) for air carrier ground handling contracts (including major air carriers, international air carriers, and some commuter carriers for ground handling contract count only). A quantitative and qualitative study of the feasibility of an entity providing ground handling services is conducted in this thesis. Specifically, the author’s goal is to determine a possible competitive strategy for ground handling contracts, using a model to simulate a competitive strategy. Continental Airlines at Daytona Beach International Airport (DAB) is used as a basis for the model of operation.

B. Hypothesis

This study asks if a private entity can compete in certain market conditions at a profit and then answers the question. Asking a question begins basically with an inductive process leading from specific pieces of information to a general conclusion, the answer to the question. Therefore, an assertion of a possible conclusion is not needed (hypothesis).
C. Introduction

The definition of a private entity as it pertains to this study is a company with no affiliation to an air carrier that competes solely for ground handling contracts, excluding all other FBO services, i.e. 100% of revenues are from ground handling. Inconsistent with the definition are private entities like Butler Aviation whose revenues from airline fueling and ground services are only 23.4% of their total revenues. Another type of company incompatible with the definition is a company like AMR which has ties to American Airlines. In essence, from the author's research experience no company by the criteria just mentioned presently exists. It is the author's opinion that organizations such as FBOs diversified into providing ground handling services to air carriers for additional income. The initial intent from an FBO perspective was to service the General Aviation (GA) industry. Other companies such as AMR and Butler Aviation, initially began providing ground handling services, are believed to be providing additional GA services and other services for much of the same reasons, extra income. This study does not say that the market is wrong, it introduces an efficient form of operation. From interviews with FBOs and from the authors personal experience, FBOs have increased


2 AMR is the parent company of American Airlines.
their fixed costs each time they diversified to the commercial air carrier side of operations. Therefore, with lower fixed costs and a focused strategy, the proposed entity is able to compete with these entities under present market conditions. This private entity would be competing directly with two types of companies, Butler Aviation and AMR, and other FBOs for the airline ground handling contracts (the exact services are mentioned later in the Need Analysis).

In order to complete the study in a reasonable amount of time and incur minimal expenses, a decision was made to perform the study in the state of Florida rather than in the continental U.S. The study is based on existing ground handling contracts in the 20 primary\(^3\) commercial service airports in the state of Florida.

The research study is split into five phases: (1) conduct a need analysis, (2) examine the structure of existing contracts, (3) tabulate the average service charges presently in place, (4) perform a financial analysis with break-even calculations, and (5) simulate a model of an operation.

The first step is to conduct a customized need analysis (a textbook format is not followed). The outcome of this task is an indication of a possible strategy so as to compete effectively in the present market environment.

---

\(^3\) The legislative definition of a primary airport has been used as the National Plan of Integrated Airport Systems (NPIAS) criterion. It is a "commercial service airport" which is determined by the Secretary of Transportation to have more than 10,000 passengers enplaned annually.
The second step is to examine the structure of the existing contracts, ie, specifically looking at contracts that are presently in place. The logic behind this step is to determine or define what the competition has to offer. It also should indicate a possible structure arrangement for future contracts with customers (air carriers).

The third step is to precisely determine average service charges presently in place between air carriers and ground handling service providers.

The fourth step is to determine the sales-mix and the break-even point of this fictitious company (G. & H. Express Co). In this exercise, the variable costs and fixed costs are calculated under a window of assumptions.

The fifth step is to simulate G. & H. Express Co. through a model in a real airport and with an existing air carrier contract. In the model, G. & H. Express Co., is tested in order to determine if it can survive in the market place of the model and earn profit. The model assumes that only one contract can be sold initially.

Finally, an overall conclusion is drawn. The conclusion will reveal if it is feasible for G. & H. Express Co. to compete for air carrier contracts with local FBOs, Butler Aviation, and AMR.
CHAPTER II

NEED ANALYSIS

A. Introduction

No elaborate method is used in the need analysis. Simply, an indication of how air carriers feel about ground handling services provided by local airport FBOs is required. In order to accomplish this task within a five hundred dollar budget, a questionnaire is used. The desired information is asked in the following questions:

• What services do air carriers require from the local airport FBOs?

• Are the air carriers satisfied or do they seek an improvement in quality?

• To what extent would the air carriers like a reduction in the price of these services?

With the information provided by the survey, a conclusion is drawn as to the service G. & H. Express Co. must offer and which strategy G. & H. Express Co. should pursue. For example, if a request for quality improvement is the survey response, then improved quality is a possible competitive strategy.

Prior to beginning the need analysis, the population size is determined and the sample size is calculated.
B. Population Size Determination

The population size consists of the total number of existing airline fueling and ground handling contracts for the month of August 1993 in the state of Florida. There are several ways to determine the population size: (1) ask the administrative offices of each air carrier, (2) question the air carrier station at each of the primary airports, and (3) question the FBO's at each of the primary airports. Option one and two is not possible since the air carriers are not willing to provide such information. Option three is selected because FBOs are willing to supply information on contracts they have with the air carriers at their respective airport as well as on the remaining contracts, if any, their competitors have on the same air field. The FBOs are able to provide this information because of their close proximity to their competitors. Therefore, the population is determined by performing the following steps:

1. The twenty primary commercial service airports (see Table 1 on the next page) in the state of Florida are gathered using the NPIAS\textsuperscript{4}.

2. AOPA's airport directory\textsuperscript{5} is used to determine all of the FBO operators' telephone numbers and addresses at the respective airport since they will be interviewed via telephone or through the mail.

\textsuperscript{4} NPIAS stands for the National Plan of Integrated Airport Systems and it is an airport information document produced by the government as part of their airport financial aid program.

\textsuperscript{5} AOPA's airport directory is a listing of all the airports in the country containing specifications on each of the airports and all other services offered at the airport.
3. Each FBO operator is asked if they hold a ground handling contract with an air carrier. They are also asked about the number of contracts their competitors hold at the same airport.

4. A total of the number of airline ground handling contracts are kept for that respective airport (see Table 2).

Table 1. Twenty Primary Airports in the State of Florida

<table>
<thead>
<tr>
<th>AIRPORT NAME</th>
<th>AIRPORT CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daytona Beach International Airport</td>
<td>DAB</td>
</tr>
<tr>
<td>Fort Lauderdale-Hollywood International</td>
<td>FLL</td>
</tr>
<tr>
<td>Fort Myers Regional</td>
<td>RSW</td>
</tr>
<tr>
<td>Gainsville Regional</td>
<td>GNV</td>
</tr>
<tr>
<td>Jacksonville International</td>
<td>JAX</td>
</tr>
<tr>
<td>Key West International</td>
<td>EYW</td>
</tr>
<tr>
<td>Marathon</td>
<td>MTH</td>
</tr>
<tr>
<td>Melbourne Regional</td>
<td>MLB</td>
</tr>
<tr>
<td>Miami International</td>
<td>MIA</td>
</tr>
<tr>
<td>Naples</td>
<td>APF</td>
</tr>
<tr>
<td>Orlando International</td>
<td>MCO</td>
</tr>
<tr>
<td>Panama City-Bay County Regional</td>
<td>PPN</td>
</tr>
<tr>
<td>Pensacola-Coastal</td>
<td>PNS</td>
</tr>
<tr>
<td>Sarasota-Bradenton</td>
<td>SRQ</td>
</tr>
<tr>
<td>St. Petersburg-Clearwater International</td>
<td>PIE</td>
</tr>
<tr>
<td>Tallahassee Regional</td>
<td>TLH</td>
</tr>
<tr>
<td>Tampa International</td>
<td>TPA</td>
</tr>
<tr>
<td>Vero Beach Municipal</td>
<td>VRB</td>
</tr>
<tr>
<td>Palm Beach County Park</td>
<td>PBI</td>
</tr>
<tr>
<td>Eglin Air Force Base</td>
<td>VPS</td>
</tr>
</tbody>
</table>
For the purposes of this study, a ground handling contract is defined as a contract between any commercial carrier listed on the OAG* having a minimum of a one ground

* OAG is a document that prints every air carrier's schedule. In this case, the North American guide is used.
handling contract with one of the FBOs at the respective airport. For example, if Continental Airlines has a fueling contract with one FBO, and a skycap service contract with another FBO at the same airport, it is counted as being one ground handling contract. If Delta Airlines and its commuter service affiliate, Comair, have a fueling contract with an FBO, both are counted as one ground handling contract. If an air carrier’s commuter service is the sole carrier at an airport with a fueling contract, then that is considered one contract. An air carrier may also have multiple contracts (two or more) with an FBO and that is considered one contract. Also, the number of contracts may change weekly as the schedule changes of air carrier service are changed. Finally, no charter operations are considered in the count. In the author’s opinion a variance of plus or minus ten contracts is expected because some contracts could have been missed due to the constantly changing schedules.

After completing these four steps, 132 is the population size, the number of contracts existing for the month of August 1993 (see Table 2).

C. Sample Size Determination

The sample size of the population is 25% or 33 contracts.

As noted in most statistical texts for descriptive research,
a sample of 10% of large populations is considered minimal. Since 132 contracts is a smaller population, 25% is used.

D. Information Required

Finally, the information required in the analysis are the kinds of services that air carriers purchase from local airport FBOs, the quality of service being offered by the FBOs, and the price being charged by the FBOs. Therefore, the following questions are formed and placed on the questionnaire:

- What FBO services does your air carrier use?
- Is your air carrier satisfied with these services?
- Would your air carrier like an improvement on the service being offered?
- Would your air carrier like a reduction in price of the service being offered?

Asking the air carrier what services they use is important, it provides an idea of what services the proposed entity will have to sell. The second question is to determine the overall satisfaction level services that are being provided by the FBO. The third question reveals if quality is a significant factor in creating a competitive edge. Finally, the last question is to see if pricing is the only means of entry into this market place.

The questionnaire is then mailed to the 132 air carriers operating out of the twenty primary airports.
E. Survey Results

The author recommends that for future study the survey be modified. It was the authors initial intent to simplify the survey to improve the response rate and to alleviate any ambiguity for the responder. With that in mind, the survey was created resulting in a trade off, added ambiguity on the response side. A suggested format is a small scale type response to questions rather than a "yes" or "no" answer.

The author also recommends surveying the FBOs with the first question. FBOs were ultimately surveyed via telephone because it was important to know all of the FBO services offered on the 20 primary airports. One or two air carriers at a particular airport are not always purchasing every service the local FBO has to offer.

The number of replies are 37. This is four contract surveys over the planned survey sample. The 37 contracts are used in compiling the survey information. Refer to Figure 1 for survey results.
SUMMARY OF RESULTS

SURVEY

Optional Information:

Your Name:________________________________________

Air Carrier:________________________________________

Airport:__________________________________________

Check or fill in your response.

1. Which of the following FBO services does your air carrier use?:
   
   _19_ Baggage Handling
   _16_ A/C Cleaning
   _35_ Fueling
   _24_ Maintenance
   _27_ Skycap Service
   _19_ Other Ground Handling Services
   ___ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes_34_ No_3

3. Would your air carrier have a need for an improvement in the quality of service?
   Yes_15_ No_22

4. Would your air carrier like a reduction in price for these services?
   Yes_33_ No_4

5. Any other comments you may have:____________________

Fig. 1. Summary of Survey Results

* All of the FBOs were surveyed with the same question to show that every service listed is offered in every airport of the sample population. The numbers shown here are as a result of the air carrier survey.
Services Being Provided by FBOs to Air Carriers. The sample of surveys concluded that the following services are currently being provided by FBOs to air carriers:

- Baggage handling
- Aircraft interior and exterior cleaning
- Fueling
- Maintenance
- Skycap service
- Cargo service
- Other ground handling services:
  1. Water service
  2. Lavatory service
  3. Air condition service
  4. Push backs
  5. Ground power
  6. Pneumatic air starts
  7. Aircraft movement handling

It is important to note that not all of the above services are provided by all of the local airport FBOs to all of the air carriers. The list simply suggests a range of services that air carriers most commonly purchase from the FBOs. G. & H. Express Co. must be able to provide all of the above services in order to remain competitive in the marketplace. Although, in certain airports, only fueling may be required for one air carrier of multiple air carriers with contracts at a respective airport. When carriers are grouped into a unit at each of the airports in the population size, no unit purchases only one service such as fuel. In a unit of ground handling contracts the same range of services mentioned earlier exist. The result is a combination of ground handling contracts.

* Unplanned aircraft maintenance.
Air Carrier Satisfaction

Of the 37 air carrier contracts surveyed, 34 are satisfied with the present services provided by the local FBO. From this response, it is obvious that, in general, the level of service provided presently is satisfactory for the air carriers. Not totally, because 12 of the 34 responders wanted an improvement in quality. Based on ground handling work experience, it is the authors opinion that the air carriers don’t believe that the service could be improved in terms of specifications but could be more customer oriented. In other words, FBOs are not customer oriented in the eyes of these 12 carriers but provide the services to the specifications required by the air carrier, ie. performing all of the services in a timely fashion and safely. In this environment for the FBOs to be customer oriented means taking that extra step to facilitate the air carriers’ work flow for no additional charge, ie. placing safety cones at the wing tips during ground services, using two wing walkers during push backs, using a head set during engine start up, using cargo nets, packing luggage in the cargo bin neatly, cleaning the cargo bin during overnight cleans, using a vacuum on turn around cleans, chocking all wheels and doing it properly. This reason, the author feels, is the explanation for some carriers responding as being satisfied with the service, yet, at the same time requesting an improvement in quality. For the purpose of this study, it is assumed based on the survey
that air carriers are satisfied with the service and entry into the market is not advisable through a restructure of existing service.

The Need for Quality Improvement

This question indicates expected variance in quality because the preliminary research and preliminary interviews lead the author to believe that quality improvement could be an avenue to pursue as a means of entry into the market. The survey revealed that only 15 of the air carrier contracts would like to see an improvement. To re-iterate what was said earlier, some of the 15 carriers that requested an improvement in quality also responded as being satisfied with the service. The same reason given for air carrier satisfaction applies here as an explanation for this kind of response. Nevertheless, this response indicates that the way to compete with the existing service providers is not through a differentiated strategy based on quality because, for the most part, the present air carriers are satisfied with the current level of quality services.

Service Price

Out of the 37 contracts surveyed, 33 would like to see a price reduction in the services provided. Initially, it appears there is some ambiguity as to how to interpret these results. It would seem that all air carriers would like a
price reduction. Further interviews with the air carriers that responded "no" to this question indicated the response was as a result of loyalty to the service provider. These air carriers felt the present level of service would decline if the price were to be reduced. It is assumed, based on the survey results, that if G. & H. Express Co. is going to compete, it must be based on the price of services. In other words, this entity has to use a competitive strategy that strives for low cost leadership.
Survey Conclusions. The survey concludes that the average air carrier is generally satisfied with the service being provided, but would like to see a reduction in price. If G. & H. Express Co. is going to compete for these contracts, it must be by providing equal or better services at lower prices.

Table 3. Summary of Survey Results

<table>
<thead>
<tr>
<th>Satisfied Carriers</th>
<th>Carriers that Would Like an Improvement in Quality</th>
<th>Carriers that Would Like a Reduction on Price of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>91%</td>
<td>40%</td>
<td>89%</td>
</tr>
</tbody>
</table>

*Refer to Figure 1.

Test 1\textsuperscript{10}:

In order to test the significance of the improvement in quality response, the following null hypothesis test is performed:

Key:

- $X$ = average of the sample population
- $\mu$ = average of the population
- $z$ = $z$ score
- $n$ = sample population
- $\theta_{n-1}$ = standard deviation of the sample population

Data:

- $n = 37$

- 22 air carrier contracts responded with a "no" answer as to whether or not the air carrier would like an improvement in quality.

- 15 contracts responded with a "yes" answer.

Assumptions:

1 = No, improvement to quality is required.

2 = Yes, an improvement in quality is required.

Desire a 99% certainty that the average contract in the population would not like an improvement in quality. Therefore;

\[ \alpha = .01 \quad z < -2.575 \text{ or } z > 2.575 \]

The hypothesis are as follows:

\[ H_0 : \mu = 1 \]

\[ H_a : \mu \neq 1 \]

Formula:

\[ z = \frac{\bar{X} - \mu}{\theta_{n-1}} \]

Calculations:

\[ z = \frac{1.4054054 - 1}{.4977427} = .814488 \]

Conclusion:

There is a 99% chance that the average air carrier contract holder is not looking for an improvement in quality.
Test 2:\n
In order to test the significance of the reduction in price of service response, the following null hypothesis test is performed:

Key:

- $\bar{X}$ = average of the sample population
- $\mu$ = average of the population
- $z$ = z score
- $n$ = sample population
- $\sigma_{n-1}$ = standard deviation of the sample population

Data:

- $n = 37$
- 4 air carrier contracts responded with a "no" answer as to whether or not the air carrier would like an a reduction in price of existing services.
- 33 contracts responded with a "yes" answer.

Assumptions:

- 1 = No price reduction is required.
- 2 = Yes a price reduction is required.
- Desire a 99% certainty that the average contract in the population would not like a price reduction in price to the existing services. Therefore;

$$\alpha = .01 \quad z < -2.575 \text{ or } z > 2.575$$

- The hypothesis are as follows:
  $$H_0 : \mu = 2$$
  $$H_a : \mu \neq 2$$

Formula:

$$z = \frac{\bar{X} - \mu}{\sigma_{n-1}}$$

Calculations:

\[ z = \frac{2.1351351 - 2}{1.1096086} = .1217863 \]

Conclusion:

There is a 99% chance that the average air carrier contract holder is looking for a price reduction on existing services.

The next step in this study is to research the structure of existing contracts to determine the existing charge structure of the ground handling services.
CHAPTER III
STRUCTURE OF EXISTING CONTRACTS

Since the survey conclusion indicates a low cost strategy as the most effective strategy to enter the market place, research efforts are focused on the cost structure of the contracts (ie. the ground handling service contracts). The purpose of this research is to examine and clearly understand what charges G. & H. Express Co. must compete with.

The FBOs surveyed (Table 2) collectively contributed to the list of services since most have an identical charge format. In addition, all of the FBOs charge on a per flight operation bases. This consists of bringing the aircraft to the intended gate and releasing the aircraft for departure from that gate in an hour\(^{12}\). The following is a list of service charges in a typical ground handling contract per flight operation:

- Ground Handling
- Fueling
- Overnight Cleaning
- Push Backs
- Off Schedule Operations
- Skycap Service

\(^{12}\) For off schedule operations an hour is considered the grace period before any additional charges are incurred.
Most FBOs requested to remain anonymous with respect to printing their charges with the exception of one (see Appendix C). The following range of charges are as a result of the prices provided by these airports.

A. Ground Handling Charges

Charges include all of the services needed on the apron (see Appendix D) and all of the labor required to support those services. Charges range from $150 to $200 for this particular service category and $175 is the average charge for ground handling charge per flight operation.

B. Fueling Charges

There are two scenarios: (1) the air carrier purchases the fuel or (2) the FBO purchases the fuel. When the air carrier purchases the fuel, the FBO also budgets the fuel, inventories the fuel, and audits the fuel monthly for air carriers. The fuel is stored in the FBO’s fuel farm and is distributed for a fee. This seems to be the case through out; only a few of the ground handling contracts have the situation were the FBO is purchasing the fuel and selling it to the air carrier. In most cases, the fuel farm is owned by the FBO operator who pays land rent to the airport authority. This is significant for understanding the calculation of expenses in the financial chapter.

The FBO charges the air carrier in two ways: (1) an into-
plane charge or (2) a per gallon charge. Either method can be applicable when the air carrier purchases fuel or the FBO purchases the fuel.

Into-plane charge is when the FBO charges a lump sum for fueling the aircraft. This charge is most common in smaller airports were a large volume of fuel is not readily consumed. For example, in Daytona Beach and Fort Myers the FBOs utilize an into-plane charge structure due to the low volume of fuel consumption as a result of short haul routes. On the other hand, Orlando International and Miami International FBOs do not use the into-plane charge due to high volume of fuel consumption as a result of the long haul routes. The into-plane charge ranges from $25 to $50 per fueling session or flight operation which usually requires one fueling in most cases.

The per gallon charge is most common in larger airports because of the high fuel consumption by air carriers. The range of charges for pumping fuel is 2 to 8 cents per gallon.

The significance of this explanation is to understanding the background of each charge and understanding calculations of latter chapters.
C. Skycap Service Charges

Skycap service charges are very basic. The air carrier creates a budget of man hours per flight and the number of skycaps required to provide the air carrier's level of service. The budgeted hours are multiplied by the rate negotiated between the FBO and the air carrier. The product is then multiplied by the number of persons (skycap workers) budgeted for a particular flight. The negotiated rate varies. The average rate is $5.50 per hour and an additional $2.75 is added for profit, taxes, benefits, and workmen's compensation. The total average rate is $8.25 per hour. The average budgeted time a skycap is needed is .75 of an hour for an arriving flight and one hour for a departing flight. An average of two persons are used for arriving flights and two person per departing flights. As seen in Appendix E, the average charge per flight operation is estimated at $28.88.

D. Overnight Cleaning Service Charges

Overnight cleaning service consists of a thorough cleaning of an aircraft that remains at the FBO overnight, departing early the next day. The charge for this service is based on the products used and the labor incurred to clean an aircraft. This service requires an hour to an hour and a half to complete. FBOs average 2 to 3 people to provide this service and use specialty products which are required by the manufacturer to clean the interior of the aircraft. The price
range for this service is between $70 and $150 per overnight cleaning. The average charge is $110.

E. Push Back Service Charges

Push back service consists of pushing back the aircraft from the gate at time of departure. This service is not popular as a part of ground handling charge in a contract because air carriers feel this service is part of a flight operation and should not be an additional charge. The FBOs feel that the tug used is expensive and requires high maintenance costs; therefore, justifying the additional charge. This charge is based on maintenance costs of the tug and labor of the tug operator. The majority of the FBOs agreed on $35 for this service.

F. Off Schedule Operation Service Charges

Off schedule operation charge consists of all fees charged to the air carrier for a flight that is overdue by more than an hour. For example, if an aircraft is due to arrive at 5:00pm and, due to delays, arrives at 6:15pm, the air carrier has just incurred an off schedule operation service. The air carrier is automatically charged an additional $10 to $25 per 15 minutes over the hour grace period. The charge builds for every additional 15 minute block. This charge covers labor costs. The average price is $17.50 per 15 minute delay over the grace period.
In conclusion, the structure of the existing ground handling contracts cover the following categories of services:

- Ground Handling (G/H)
- Fueling (F)
- Skycap Service (S/S)
- Overnight Cleans (O/C)
- Push Backs (P/B)
- Off Schedule Operations (O-S/O)

The next step is to calculate the average charges for the services listed above throughout the state of Florida.
CHAPTER IV
AVERAGE SERVICE CHARGES
PRESENTLY IN PLACE

The average service charges are calculated based on the information provided by the FBO’s operators in the 20 primary airports. Again, the FBOs choose to have their entities kept confidential.

In order to arrive at an average price of a service, each price was added to yield a total figure which is then divided by the number of all the FBOs that provided a price. All of the FBO’s listed on table 2 participated in this exercise. The following are the average charges for ground handling services in the 20 primary airports in the state of Florida:

Table 4. Average Service Charges

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground handling</td>
<td>$175.00</td>
</tr>
<tr>
<td>Fueling</td>
<td>$37.50</td>
</tr>
<tr>
<td>Skycap</td>
<td>$28.88</td>
</tr>
<tr>
<td>Overnight cleaning</td>
<td>$112.50</td>
</tr>
<tr>
<td>Push backs</td>
<td>$35.00</td>
</tr>
<tr>
<td>Off schedule operations</td>
<td>$17.50*</td>
</tr>
</tbody>
</table>

* Per 15 minutes over the hour grace period.
Refer to Appendix F.
G. & H. Express Co. must charge below these prices in order to apply a low cost strategy. The next sequential step is to perform a financial analysis.
CHAPTER V
FINANCIAL ANALYSIS

If G. & H. Express Co. is going to compete as a low cost ground handling service provider, the company must price below the competition by a significant margin. The financial analysis consists of three parts: (1) the significant margin, enough for air carriers to change over from the present service providers, (2) the sales-mix analysis, and (3) the break-even point.

A. Significant Margin

Prior to conducting the sales-mix analysis or determine the break-even point for G. & H. Express Co., the air carriers who responded to the needs analysis survey expressing a price preference reduction were resurveyed. The purpose was to determine what percentage of a price reduction was desired in order to have air carriers change over from their present service providers. In this case, the sample population is 33 contracts since only 33 survey's have answered "yes" to the reduction in price of existing service question. Therefore, 33 surveys were mailed to these particular air carriers. Fortunately, all of the 33 "yes" responses had the carrier name and the airport name under the optional information section of the initial survey, enabling the author to re-survey the 33 air carriers.
Results of survey. The results from the second survey are as follows:

Table 5. Number of Responses from Second Survey

<table>
<thead>
<tr>
<th></th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
<th>30%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>29</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

A null hypothesis test is also performed to determine if the average population is in agreement with the 5% reduction in price response.

SUMMARY OF RESULTS

SURVEY

Optional Information:

Your Name:__________________________________________

Air Carrier:________________________________________

Airport:___________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%(29) 10%(4) 15%(0) 20%(0) 25%(0) 30%(0)

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Key:

- $\bar{X} =$ average of the sample population
- $\mu =$ average of the population
- $z =$ z score
- $n =$ sample population
- $\sigma_n =$ standard deviation of the sample population

Data:

- $n = 33$

- 4 air carrier contracts responded with a "10%" answer as to the percentage reduction in price that would cause them to change from the present service provider.

- 29 contracts responded with a "5%" answer.

Assumptions:

- 1 = 10% price reduction is required.
- 2 = 5% price reduction is required.

- Desire a 99% certainty that the average contract in the population would like a price reduction of 5% in the existing services. Therefore:

  $\alpha = .01$ $z < -2.575$ or $z > 2.575$

- The hypothesis are as follows:

  $H_0 : \mu = 2$

  $H_a : \mu \neq 2$
Formula:

\[ z = \frac{X - \mu}{\theta_{n-1}} \]

Calculations:

\[ z = \frac{1.8787879 - 2}{.331434} = -0.3657203 \]

Conclusion:

There is a 99% chance that the average air carrier contract holder is looking for a price reduction of at least 5% in order to change from its present ground handling service provider.

B. Sales-Mix Analysis

From a realistic approach, it can be assumed G. & H. Express Co. will earn revenue from three types of services:

1.0 Ground Handling
   1.1 Ground Handling Service
      1.1.1 Water service
      1.1.2 Lavatory service
      1.1.3 Air condition service
      1.1.4 Push backs
      1.1.5 Ground power
      1.1.6 Pneumatic air starts
      1.1.7 Aircraft movement handling
      1.1.8 Baggage handling
   1.1 Fueling
   1.2 Push Back
   1.3 Skycap

2.0 Overnight Cleaning

3.0 Off-Schedule Operations

Each flight operation normally consists of a ground handling service, fueling service, push back service, and skycap service. An air carrier may purchase these services for a flight operation and an overnight cleaning for the last fight of the day. In addition, the air carrier may have to also purchase a few off-schedule operation services. In essence, the air carrier purchase three main services: (1)
ground handling service for a flight operation, (2) overnight cleaning service for an aircraft that is remaining overnight, and (3) an off-schedule operation service for delayed flights. Therefore, G. & H. Express Co. is providing a sales mix, defined as the relative combinations of quantities of services that comprise total sales. Since the combination changes, the cost-volume-profit relationships also changes.
The following is assumed based on the survey and interviews with FBOS for G. & H. Express Co. for one contract:

- 30 days in month
- 120 flights operations per month
- Each flight operation consists of:
  1.0 Ground Handling (G/H)
    1.1 Ground Handling Service
    1.1.1 Water service
    1.1.2 Lavatory service
    1.1.3 Air condition service
    1.1.4 Push backs
    1.1.5 Ground power
    1.1.6 Pneumatic air starts
    1.1.7 Aircraft movement handling
    1.1.8 Baggage handling
  1.2 Fueling
  1.3 Push Back
  1.4 Skycap
- One overnight (O/C) clean per day (30 O/C’s per month)
- Four off-schedule operations (O-S/O) per month averaging 
  1/2 hour over hour grace period.
- Each flight operation requires the following labor:
  1.0 Five people per ground handling service
  1.2 Fueler
  1.3 Push back tug operator (in this case he/she
    is part of the five people)
  1.4 Two people for skycap service
  2.0 Two people per overnight clean
  3.0 Five people per off-schedule operation
- Each flight operation requires the following equipment:
  1.0 For ground handling service:
    1.1 Drinking water truck
    1.2 Lavatory truck
    1.3 Air conditioning unit
    1.4 Ground power unit
    1.5 Pneumatic air starter
    1.6 Two baggage cart tugs
    1.7 Five baggage carts
    1.8 Two belt loaders
  2.0 For fueling service:
    2.1 One fuel truck
  3.0 For push back service:
    3.1 One push back tug
    3.2 One push back arm
  4.0 For skycap service:
    4.1 Two baggage dollies
- Overnight cleaning requires the following equipment:
  1.0 Vacuum cleaner
  2.0 Two trash cans
  3.0 Cleaning cart
• Other expenses per flight operation:
  1.0 10 gallons of unleaded fuel @ 1.25/gal.
  2.0 5 gallons of blue liquid @ .20/gal.

• Rent: (Based on DAB's rates\textsuperscript{14})
  1.0 Fuel \( \frac{1}{2} \) acre of land $2,100 per year
  2.0 Office space $2,750 per year

\textsuperscript{14} The property manager at DAB indicated they were very competitive with other airport prices. He concluded MIA, MCO, and TPA may be the only airport prices incompatible to DAB. Since, the three airports did not support the majority, the author used DAB as a basis for airport property rental prices.
Sales Mix Analysis Chart
(Monthly)

Sales in units

<table>
<thead>
<tr>
<th></th>
<th>G/H</th>
<th>O/C</th>
<th>O-S/S</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120</td>
<td>30</td>
<td>4</td>
<td>154</td>
</tr>
</tbody>
</table>

Sales:\n
G/H is $262.57 per service
O/C is $106.88 per service
O-S/O is $33.26 per service

Variable costs:\n
G/H is $122.00 per service
O/C is $38.00 per service
O-S/O is $33.00 per service

\[\begin{align*}
\text{Sales} & = 31,508.40^a + 3,206.40^b + 133.04^c = 34,847.84^d \\
\text{Variable expenses} & = 14,640.00^e + 1,140.00^f + 132.00^g = 15,912.00^h \\
\text{Contribution margins} & = 16,868.40^i + 2,066.40^j + 1.04^k = 18,935.84^l
\end{align*}\]

Fixed expenses = $10,708.81\n
Operating income = $8,227.03\n
---

* See Appendix G, Figure 1G

\(15,912.00 + (34,847.84 - 10,708.81) = 8,227.03\)

\[\text{See Appendix G, Figure } 7G\]

Fig. 2. Sales-Mix Analysis Chart

---

\[15 \text{ Sales include the 5% reduction from the competitors average price calculated in Table } 4.\]
In conclusion, under this scenario, G. & H. Express Co. makes an income profit of $8,227.03. In the next step, a required profit is assumed and the break-even point is calculated.

C. Break-Even Analysis

Assuming that G. & H. Express, Co. wants to earn $250,000 profit per year under the same scenario, what is the break-even point?

Key:

- \( G/H \) = number of ground handling services required to break-even.
- \( 0.25 \ G/H \) = number of overnight cleans required to break-even.
- \( 0.03 \ G/H \) = number of off-schedule operations required to break-even.

Formula:

\[
\text{Sales} - \text{Variable Costs} - \text{Fixed Costs} = \$20,834^*
\]

\[
* \$250,000 / 12 \text{ mo.} = \$20,833.33
\]

---

16 The $250,000 profit is an arbitrary figure picked by the author. It would normally be based on a the required rate of return for the $93,000 investment.

Calculations:

Step 1:

\[
\left[ \$262.57(G/H) + \$106.88(.25G/H) + \$33.26(.03G/H) \right] - \\
\left[ \$83.97(G/H) + \$38.00(.25G/H) + \$33.00(.03G/H) \right] - \$18,841.28 \\
= 0 \text{ NET INCOME}
\]

Step 2:

\$290.29G/H - \$94.46G/H - \$18,841.28 = 0 \text{ NET INCOME}

Step 3:

\$195.83G/H = \$18,841.28

Step 4:

G/H = 96.21 = 96 G/H services  
.25G/H = 24 = O/C services  
.03G/H = 2.88 = 3 O-S/O services
Summary of results. In this scenario, for G. & H. Express Co. to make $250,000 per year in gross profit, it must sell 64 ground handling services per month, 16 overnight cleaning services per month, and 2 off-schedule operations per month.

The next sequential step is to run G. & H. Express Co. through a simulation model, so stipulations that were not considered in the previous assumptions can be addressed.
CHAPTER VI  
MODEL OF OPERATION

In order to determine how G. & H. Express Co. performs in realistic conditions, a model is created and simulated. First, an airport is selected where the service is to be provided. Second, an air carrier is chosen from the air carriers operating at the given airport. The carrier chosen indicated on the survey that it would purchase the services from another service provider if the new provider charged a price 5% below the present price. Thirdly, a sales-mix analysis is done with adjustments to the original assumptions for this scenario. Fourthly, a break-even analysis is done for this scenario. Lastly, a conclusion is made concerning the company's profitability under this realistic model.

A. Airport

Daytona Beach International Airport (DAB) is the model airport chosen because of accessibility to airport information, accessibility to air carrier information, and accessibility to FBO information.
As a result of this location, G. & H. Express Co. requires 500 square feet of office space and \( \frac{1}{4} \) acre of land to build a fuel farm. The fuel farm needs \( \frac{1}{4} \) acre to accommodate the following specifications (the size of the present above ground fuel farm at DAB):

Capacity for:
1.0 150,000 gallons of Jet A.
2.0 40,000 gallons of AVGAS.
3.0 10,000 gallons of unleaded gas.

Total estimated cost $1,000,000 to build the fuel farm\(^1\). Rental of the fuel farm land is $4,200 per year and rental for the office space is $2,750 per year. Once the fuel farm is built, the rental price of the land does not increase as a result of the actual structure, ie. fuel farm tanks, etc. Future rental increases are based strictly on land value according to DAB’s present agreement with the FBO. This also seemed to be the case for other airports, ie. MLB, SRQ, etc. Both the land for the fuel farm and the space for the office are currently available at DAB.

\(^1\) This cost is based on the actual cost to build the existing fuel farm at DAB by the FBO in 1987. It includes all EPA rulings for pollution of underground water. The price is adjusted for today’s dollars from the actual construction cost.
Table 6. Services Air Carriers are Utilizing from FBOs

<table>
<thead>
<tr>
<th>Air Carrier</th>
<th># of Contracts</th>
<th>Kind of Service</th>
<th># of Flights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta</td>
<td>1</td>
<td>•Fueling</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Skycap Service</td>
<td></td>
</tr>
<tr>
<td>American</td>
<td>1</td>
<td>•Fueling</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Skycap Service</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Baggage Handling</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Overnight Cleans</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Maintenance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Drinking Water</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Lavatory Svc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Auxiliary Power</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Air Starter</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Tractor Push Back</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Off-Schedule Ops.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Air Conditioning</td>
<td></td>
</tr>
<tr>
<td>Continental</td>
<td>1</td>
<td>•Fueling</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Skycap Service</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Baggage Handling</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Overnight Cleans</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Maintenance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Drinking Water</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Lavatory Svc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Auxiliary Power</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Air Starter</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Tractor Push Back</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Off-Schedule Ops.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Air Conditioning</td>
<td></td>
</tr>
<tr>
<td>UsAir</td>
<td>1</td>
<td>•Fueling</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Skycap Service</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Baggage Handling</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Overnight Cleans</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Maintenance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Drinking Water</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Lavatory Svc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Auxiliary Power</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Air Starter</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Tractor Push Back</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Off-Schedule Ops.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>•Air Conditioning</td>
<td></td>
</tr>
</tbody>
</table>

These are the services that the local FBO at Daytona Beach International Airport is presently providing to the existing air carriers. Commuter services are not included in the list for simplicity purposes, because any additional contracts are added revenues.
B. Air Carrier

Continental Airlines is the model carrier since Continental Airlines' station manager in DAB was very helpful in providing the required information to complete the model simulation.

In an interview with the station manager current services were identified. Therefore, the same services must be offered by G. & H. Express Co. to Continental:

- Fueling
- Skycap Service
- Baggage Handling
- Overnight Cleans
- Maintenance
- Drinking Water
- Lavatory Svc.
- Auxiliary Power
- Air Starter
- Tractor Push Back
- Off-Schedule Ops.
- Air Conditioning

NOTE: Maintenance is the only service that is not considered in our previous example.

The station manager indicated that having all services provided by one company is beneficial because this increases his bargaining power during contract negotiations. He concluded that dealing with one organization is also easier than having to deal with multiple organizations providing a variety of services. This reduces transaction costs and multiple problems.
Continental Airlines has the following schedule in Daytona Beach International Airport (per the station manager’s interview):

Table 7. Continental Airline Daily Schedule for August 1993

<table>
<thead>
<tr>
<th>ARRIVAL</th>
<th>DEPARTURE</th>
<th># OF FLT. OPS.</th>
<th># OF O/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>7:00a</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>11:22a</td>
<td>12:49p</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2:22p</td>
<td>3:49p</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10:32p</td>
<td>X</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

This means that G. & H. Express Co. must provide 4 ground handling services per day, 1 overnight cleaning per day, and 4 off schedule operations per month averaging \( \frac{1}{2} \) hour over the grace period.

C. Sales-Mix Analysis

Assumptions:

- 30 days in month
- 120 flight operations per month
- Each flight operation consists of:
  1.0 Ground Handling (G/H)
  1.1 Ground Handling Service
    1.1.1 Water service
    1.1.2 Lavatory service
    1.1.3 Air condition service
    1.1.4 Push backs
    1.1.5 Ground power
    1.1.6 Pneumatic air starts
    1.1.7 Aircraft movement handling
    1.1.8 Baggage handling
  1.2 Fueling
  1.3 Push Back
  1.4 Skycap
- One overnight (O/C) clean per day (30 O/C’s per month)
- Four off-schedule operations (O-S/O) per month averaging \( \frac{1}{4} \) hour over hour grace period.
• Each flight operation requires the following labor:
  1.0 Five people per ground handling service (one of which is a certified Airframe and Powerplant mechanic in the event maintenance service is required. If maintenance servicing is required then the air carrier is charged for the full labor cost. Maintenance personnel must own their own tools.)
  1.2 Fueler
  1.3 Push back tug operator (who is part of the five people)
  1.4 Two people for skycap service
  2.0 Two people per overnight clean
  3.0 Five people per off-schedule operation
• Each flight operation requires the following equipment:
  1.0 For ground handling service:
     1.1 Drinking water truck
     1.2 Lavatory truck
     1.3 Air conditioning unit
     1.4 Ground power unit
     1.5 Pneumatic air starter
     1.6 Two baggage cart tugs
     1.7 Five baggage carts
     1.8 Two belt loaders
  2.0 For fueling service:
     2.1 One fuel truck
  3.0 For push back service:
     3.1 One push back tug
     3.2 One push back arm
  4.0 For skycap service:
     4.1 Two baggage dollies
• Overnight cleaning requires the following equipment:
  1.0 Vacuum cleaner
  2.0 Two trash cans
  3.0 Cleaning cart
• Other expenses per flight operation:
  1.0 10 gallons of unleaded fuel @ 1.25/gal.
  2.0 5 gallons of blue liquid @ .20/gal.
• All legal fees, state and federal taxes are excluded because some of these costs are sunk and others are related to income level; and in an effort to keep the study simple these items are not used.
### Sales Mix Analysis Chart (Monthly)

<table>
<thead>
<tr>
<th>Sales in units</th>
<th>G/H</th>
<th>O/C</th>
<th>O-S/S</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales in units</td>
<td>120</td>
<td>30</td>
<td>4</td>
<td>154</td>
</tr>
</tbody>
</table>

**Sales**:

- G/H is $262.57 per service
- O/C is $106.88 per service
- O-S/O is $33.26 per service

**Variable costs**:

- G/H is $83.97 per service
- O/C is $38.00 per service
- O-S/O is $33.00 per service

<table>
<thead>
<tr>
<th></th>
<th>G/H (in dollars)</th>
<th>O/C (in dollars)</th>
<th>O-S/S (in dollars)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>31,508.40(^a)</td>
<td>3,206.40(^b)</td>
<td>133.04(^c)</td>
<td>34,847.84(^d)</td>
</tr>
<tr>
<td>Variable expenses</td>
<td>10,076.00(^e)</td>
<td>1,140.00(^f)</td>
<td>132.00(^g)</td>
<td>11,348.00(^h)</td>
</tr>
<tr>
<td>Contribution margins</td>
<td>21,432.40(^i)</td>
<td>2,066.40(^j)</td>
<td>1.04(^k)</td>
<td>23,499.84(^l)</td>
</tr>
</tbody>
</table>

**Fixed expenses**

18,841.28\(^m\)

**Net income**

4,658.56\(^n\)

\(^a\) See Appendix J, Figure 1J
\(^b\) See Appendix J, Figure 2J
\(^c\) See Appendix J, Figure 3J
\(^d\) (31,508.40 + 3,206.40 + 133.04)
\(^e\) See Appendix J, Figure 4J
\(^f\) See Appendix J, Figure 5J
\(^g\) See Appendix J, Figure 6J
\(^h\) (10,076.00 + 1,140.00 + 132.00) = $11,348.00
\(^i\) (31,508.40 - 10,076.00) = $21,432.40
\(^j\) (3,206.40 - 1,140.00) = $2,066.40
\(^k\) (133.04 - 132.00) = $1.04
\(^l\) (34,847.84 - 11,348.00) = $23,499.84
\(^m\) See Appendix J, Figure 7J
\(^n\) (23,499.84 - 18,841.28) = $4,658.56

Fig. 3. Sales-Mix Analysis Chart (Model).

\(^20\) Sales include the 5% reduction from the competitors average price calculated in Table 4.
D. Break-Even Analysis

A break-even analysis is done to have an idea of the number of each service required to break-even.

**Key**:\n
- **G/H**: number of ground handling services required to break-even.
- **.25 G/H**: number of overnight cleans required to break-even.
- **.03 G/H**: number of off-schedule operations required to break-even.

**Formula:** \n
\[
\text{Sales} - \text{Variable Costs} - \text{Fixed Costs} = 0 \quad \text{Net Income}
\]

**Calculations:**

**Step 1:**

\[
\left[ \$262.57(G/H) + \$106.88(.25G/H) + \$33.26(.03G/H) \right] - \\
\left[ \$83.97(G/H) + \$38.00(.25G/H) + \$33.00(.03G/H) \right] - \$18,841.28 = 0 \quad \text{NET INCOME}
\]

**Step 2:**

\[
\$290.29G/H - \$94.46G/H - \$18,841.28 = 0 \quad \text{NET INCOME}
\]

**Step 3:**

\[
\$195.83G/H = \$18,841.28
\]

**Step 4:**

- **G/H = 96.21 = 96 G/H services**
- **.25G/H = 24 = O/C services**
- **.03G/H = 2.88 = 3 O-S/O services**

---

\(^{21} 30 \text{ sales of O/C} / 120 \text{ sales of G/H} = \text{will assume}.25 \text{ sales of O/C to one sale of G/H. Also, } 4 \text{ sales of O-S/S} / 120 \text{ sales of G/H} = \text{will assume}.03 \text{ sales of O/C to one sale of G/H. Reference: Charles T. Horngren and Gary L. Sundem. Introduction to Management Accounting. 8th ed. Englewood Cliffs, NJ: Prentice-Hall, Inc.}
Summary of results:

Under these conditions, G. & H. Express Co. starts to lose money when Continental purchases less than 96 ground handling services, 24 overnight cleaning services, and 3 off-schedule operations.

E. Conclusion

G. & H. Express Co. can compete with the local FBO at DAB the ground handling contract, at a profit. This scenario does not consider the markets reaction to the entry of G. & H. Express Co. into the market.
CHAPTER VII
CONCLUSION

A. Summary of Findings

Four key findings are attributed to the research of this thesis. First, G. & H. Express Co. must utilize a low cost differentiation strategy to obtain a competitive advantage in the market place. In fact, G. & H. Express Co. could charge 17% below the existing price and remain profitable, 7% more than the competition\(^{22}\). Second, G. & H. Express Co. must provide the following services:

- Baggage handling
- Aircraft interior and exterior cleaning
- Fueling
- Maintenance
- Skycap service
- Other ground handling services:
  1. Water service
  2. Lavatory service
  3. Air condition service
  4. Push backs
  5. Ground power
  6. Pneumatic air starts
  7. Aircraft movement handling

Third, this private entity must maintain a sales-mix compatible to the sales-mix on Figure 2 and Figure 3 in order

\(^{22}\) Seventy percent of the FBO’s managers, who choose to remain anonymous, said their FBOs could reduce the price by about 10%, but beyond that he would not be covering their fixed costs (AMR and Buttler Aviation would not comment on their situation).
to remain profitable. Fourth, a private entity can compete at a profit under the simulation model. There is, however, a relevant range concerning profitability as determined in the break-even analysis.

Why can this entity beat competitors by 7% and remain profitable?

Since the FBOs can match G. & H. Express Co.'s variable costs and 70% of the FBOs indicated that with a 10% reduction in price they would not be able to cover their fixed costs, the author maintains there are two reasons that permit G. & H. Express Co. to charge a lower price than the FBOs: (1) leaner administration and (2) lower transaction costs. FBOs were initially oriented toward general aviation services. Then, through demand stimulation, they began offering ground handling services to air carriers. It is the authors opinion that administration increased in size to better cope with the new form of operation, i.e. administrative staff to handle the new responsibility center (commercial ground handling service side of the operation) and additional administrative staff to handle both responsibility centers (the GA side of operations and commercial side of operations) as a unit. Hence, a thicker layer of administration, more salaries, and higher fixed costs. See figure 4 for illustration on the next page.
### Administration Cost Comparison

<table>
<thead>
<tr>
<th></th>
<th>FBO</th>
<th>New Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>Present</td>
</tr>
<tr>
<td>Sales:</td>
<td>$8$\textsuperscript{23}</td>
<td>$16$\textsuperscript{24}</td>
</tr>
<tr>
<td>VC:</td>
<td>$2$\textsuperscript{22}</td>
<td>$4$\textsuperscript{27}</td>
</tr>
<tr>
<td>CM:</td>
<td>$6$\textsuperscript{29}</td>
<td>$12$\textsuperscript{30}</td>
</tr>
<tr>
<td>FCA:</td>
<td>$3$\textsuperscript{33}</td>
<td>$9$\textsuperscript{34}</td>
</tr>
<tr>
<td>FCO:</td>
<td>$2$\textsuperscript{37}</td>
<td>$4$\textsuperscript{38}</td>
</tr>
<tr>
<td>Net Income:</td>
<td>$1$\textsuperscript{41}</td>
<td>$(1)$\textsuperscript{42}</td>
</tr>
</tbody>
</table>

**Key:**
- **Before** = Before acquiring the ground handling contracts from air carriers (just GA).
- **Present** = After acquiring the ground handling contracts from the air carriers.
- **Should Be** = Based on traditional textbook theory how the FBO cost structure should look like after acquiring the air carrier ground handling contracts.
- **Proposed** = Cost structure based on G. & H. Express Co.

**Legend:**
- VC = Variable costs.
- CM = Contribution margin.
- FCA = Fixed Costs Administrative.
- FCO = Other fixed costs.

Fig. 4. Administration Cost Comparison.

\[\text{\textsuperscript{23}}\] Hypothetical number picked by the author to prove his point.

\[\text{\textsuperscript{24}}\] $8$ from GA side + $8$ from commercial side.

\[\text{\textsuperscript{25}}\] Hypothetical number picked by the author which assumes 17% less than the existing contract price. The 17% is used to show the lose the FBOs suffer when they are forced to match the new entities price. Yet, the new entity still profits.

\[\text{\textsuperscript{26}}\] $2$ from the GA side + $2$ from the commercial side.

\[\text{\textsuperscript{27}}\] President $1$ + Vice-President $1$ + Accountant $1 = $3.$

\[\text{\textsuperscript{28}}\] President $1$ + Vice-President $1$ + Controller $1$ + Assistant to the Controller $1$ + 2 Accountants $2 + 3$ Clerks $3 = $9.$

\[\text{\textsuperscript{29}}\] President $1$ + VP of GA side $1$ + VP of commercial side $1 + 2$ Accountants $2 = $5.$
In figure 4 the author assumes that the contribution margin between the GA side of operations and commercial side of operations are not significant since the FBO cannot sell any more ground handling contracts at the respective airport than it already does, unless a new carrier enters the market.

This leads to the second reason, higher transaction costs. This multiple layer of administration increases the price of doing business with the FBOs. Where as a leaner layer of administration would result in cheaper transaction costs.

Would the entity be able to survive the short term affect—price wars?

FBOs would be very aggressive in undercutting G. & H. Express Co. in order to avoid loosing their ground handling contracts. From the FBO's point of view, variable costs are the same and an attempt to match the price reduction is instant. However, G. & H. Express Co. is able to reduce the present price by 18% and break-even. As mentioned previously, 70% of the FBO's managers said they would only be able to go as high as about 10% before losing money. This gives G. & H. Express Co. a cushion of 8%. In addition, two other reasons could prevent a price war situation. First, since these services are on a contract basis the entity could sneak in and lock in a contract before FBO can react. In other words, preventing the price war situation. Entry is not a problem since the present contracts are on a 30 day cancellation notice. The entity could negotiate a contract going around
its own 30 day notice through the offering of a higher discount. In this contract the entity would request a longer term, ie. two years, three years, etc., and stipulate that means of cancellation would have to be for reasons other than a competitor offering a lower price. Second, since the entity is focused on ground handling services it could be more customer oriented, deleting the present gray area in quality improvement of the service (refer to Chapter 3), and build customer loyalty. With customer loyalty, the entity is in a better position to survive a future price war, one that could result after the negotiated contract is over and the FBOs have leaned out their operation.

Can G. & H. Express Co. Survive in the long-run?

The longevity of G. & H. Express Co. depends on how fast FBOs could regroup and lean out their multiple layers of administration, the author maintains. If FBOs can achieve a leaner administration, they can earn higher profits (refer to the third column in figure 4). This is possible because both the GA side of operations and the commercial side of operations are presently profitable. Should G. & H. Express Co. earn customer loyalty prior to the re-structuring of FBOs than G. & H. Express Co. has a chance for long term survival. However, should the market (FBOs) respond quickly to the new environment G. & H. Express Co. will not be able to survive a future price war. The reason being the FBO with a more
efficient operation stands to have a higher income (refer to the third column in figure 4).

Is the concept behind G. & H. Express Co. a niche for the market?

No, it is a form of operation that is minimizing costs and maximizing earnings by providing a focused low-cost differentiated competitive strategy. Although not in all situations would this entity be able to maintain lower fixed costs in comparison to their competitors, i.e. in a situation where land is scarce for an airport (resulting in outrageous rental fees for new comers or no available space) and where all the services could not be offered to the air carrier (missing one criteria requested by air carriers—see chapter VI). Nevertheless, in the majority of the sample population this was not the case. In conclusion, the market is not efficient in all cases and this concept can be implemented in the majority of the population.

B. Recommendations for Future Study

It would be interesting to see if the multiple layer of administration is the real reason behind the higher fixed costs for the FBOs or if the FBO’s managers are falsifying information in order to discourage entry into the market. In other words, FBOs could in reality reduce their price by 10% and still profit.

Under both the first scenario and as a ground handling
service provider for Continental Airlines, G. & H. Express Co. will profit. Each scenario is different, in that at any location a building and a fuel farm may have to be built, this results in an increase of fixed costs, i.e. depreciation and interest. Each airport and air carrier ground handling contract is unique. However, a private entity, having no affiliation with an air carrier or providing any other services other than the services mentioned in the study, could possibly "McDonalize" the whole process of providing these various services. It would be interesting to know if a "Federal Express" of ground handling services could be created and how the market place and carriers would respond and fare in this new environment.
REFERENCE LIST


Borg, Danny. Station Manager for American Airlines. Interview by Carlos A. Vergas, 13 August 1993, Daytona Beach, FL.


Smart, Glenn. General Manager for Continental Airlines, Inc. Interview by Carlos A. Vergas, 13 August 1993, Daytona Beach, FL.


APPENDIX A:

NEED ANALYSIS SURVEY
Optional Information:

Your Name: Troy L. Helgeson
Air Carrier: United Airlines
Airport: RSW

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - Baggage Handling
   - A/C Cleaning
   - Fueling
   - Maintenance
   - Skycap Service
   - Other Ground Handling Services
   - None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes X No

3. Would your air carrier have a need for an improvement in the quality of service?
   Yes _ No X

4. Would your air carrier like a reduction in price for these services?
   Yes _ No X

5. Any other comments you may have: Any contracts with FBO's are negotiated and handled by United's Corporate Office in Chicago, Ill

Post-it® brand fax transmittal memo 7671 of pages 1
To: ER AE From: RSW02
Co. CALE VEGAS Co. UNITED
Dept. Phone#
Fax: 904 226-4459 Fax: 813 268-3310
Optional Information:

Your Name:  

Air Carrier:  

Airport:  

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [X] Baggage Handling
   - [X] A/C Cleaning
   - [X] Fueling
   - [X] Maintenance
   - ___ Skycap Service
   - ___ Other Ground Handling Services
   - ___ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - [X] Yes
   - [ ] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [X] Yes
   - [ ] No

4. Would your air carrier like a reduction in price for these services?
   - [X] Yes
   - [ ] No

5. Any other comments you may have:

   __________________________________________________________

   __________________________________________________________
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SURVEY

Optional Information:
Your Name: Kristine Chisholm
Air Carrier: USAir Express
Airport: Panama City

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [ ] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes [ ] No [ ]

3. Would your air carrier have a need for an improvement in the quality of service?
   Yes [ ] No [ ]

4. Would your air carrier like a reduction in price for these services?
   Yes [ ] No [ ]

5. Any other comments you may have: Main problem is that FBO does not have parts to solve maintenance. I realize that a larger airport & FBO would.
Optional Information:  

Your Name:______________________________________

Air Carrier:______________________________________

Airport:__________________________________________

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:

   ✓ Baggage Handling
   ✓ A/C Cleaning
   ✓ Fueling
   □ Maintenance
   ✓ Skycap Service
   ✓ Other Ground Handling Services
   □ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes ✓ No □

3. Would your air carrier have a need for an improvement in the quality of service? Yes □ No ✓

4. Would your air carrier like a reduction in price for these services? Yes □ No ✓ very competitive

5. Any other comments you may have:______________________________________________________________

______________________________________________________________

______________________________________________________________
Optional Information:

Your Name: J.B. McCormick  365-357-4844

Air Carrier: USAir Inc.

Airport: Ft. Lauderdale

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   
   _____ Baggage Handling
   _____ A/C Cleaning
   X    Fueling
   X    Maintenance
   _____ Skycap Service
   _____ Other Ground Handling Services
   _____ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes X    No

3. Would your air carrier have a need for an improvement in the quality of service? Yes__  No X

4. Would your air carrier like a reduction in price for these services? Yes X    No

5. Any other comments you may have: We are happy with our service but would be interested in what you have to offer us.
Optional Information:
Your Name: Susan Rent
Air Carrier: Flagship Airlines American Eagle
Airport: Key West International

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   ___ Baggage Handling
   ___ A/C Cleaning
   ___ Fueling
   ___ Maintenance
   ___ Skycap Service
   ___ Other Ground Handling Services
   ___ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services? Yes  No

3. Would your air carrier have a need for an improvement in the quality of service? Yes  No

4. Would your air carrier like a reduction in price for these services? Yes  No

5. Any other comments you may have: Our FBO closes at 7 pm and doesn't open until 8 am. We've charged a $25.00 service charge for fueling when the FBO is closed, which increases our cost by an average of $400.00 per month.
Optional Information:
Your Name: D. R. Byers
Air Carrier: Delta Airlines, Inc.
Airport: DAB

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   _____ Baggage Handling
   _____ A/C Cleaning
   _____ Fueling
   _____ Maintenance
   _____ Skycap Service
   _____ Other Ground Handling Services
   _____ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes  ✓  No

3. Would your air carrier have a need for an improvement in the quality of service?
   Yes  ✓  No

4. Would your air carrier like a reduction in price for these services?
   Yes  ✓  No

5. Any other comments you may have: ________________________________
Optional Information:

Your Name: Russell Groth

Air Carrier: Northwest Airlines

Airport: Tampa Intl Airport

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [X] Fueling
   - [ ] Maintenance
   - [X] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services? Yes [X] No ___

3. Would your air carrier have a need for an improvement in the quality of service? Yes ___ No [X]

4. Would your air carrier like a reduction in price for these services? Yes [X] No ___

5. Any other comments you may have: ________________________________
   ________________________________
Optional Information:
Your Name: Ron Kent
Air Carrier: USAIR
Airport: TAMPA

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - Baggage Handling
   - A/C Cleaning
   - ☒ Fueling
   - Maintenance
   - ☒ Skycap Service
   - Other Ground Handling Services
   - None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - ☒ Yes  No

3. Would your air carrier have a need for an improvement in the quality of service?
   - ☒ Yes  No

4. Would your air carrier like a reduction in price for these services?
   - ☒ Yes  No

5. Any other comments you may have:

   ________________________________________________
   ________________________________________________
Optional Information:
Your Name: Ken Gordon
Air Carrier: Continental Airlines
Airport: FLL

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [x] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - [x] Yes
   - [ ] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [x] Yes
   - [ ] No

4. Would your air carrier like a reduction in price for these services?
   - [ ] Yes
   - [x] No

5. Any other comments you may have: ________________________________
   ________________________________
Optional Information:
Your Name: Larry Matter
Air Carrier: American Airlines
Airport: Tampa

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [ ] Fueling
   - [x] Maintenance
   - [x] Skycap Service
   - [x] Other Ground Handling Services
   - [ ] None of the above. If so, stop here!

2. Is your air carrier satisfied with these services?
   - Yes [x] No

3. Would your air carrier have a need for an improvement in the quality of service? Yes [x] No There is always a need for constant improvement.

4. Would your air carrier like a reduction in price for these services? Yes [x] No As above, always.

5. Any other comments you may have:

______________________________

______________________________
Optional Information:
Your Name: C.R. Phillips
Air Carrier: TWA
Airport: N/A

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   ___ Baggage Handling
   ___ A/C Cleaning
   ___ Fueling
   ___ Maintenance
   ___ Skycap Service
   ___ Other Ground Handling Services
   ___ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes / No

3. Would your air carrier have a need for an improvement in the quality of service? Yes / No

4. Would your air carrier like a reduction in price for these services? Yes / No

5. Any other comments you may have:
   _____________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
Optional Information:

Your Name: STEVEN M. GRAHAM

Air Carrier: AMERICAN AIRLINES

Airport: FLU

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - Baggage Handling
   - A/C Cleaning
   - Fueling
   - Maintenance
   - Skycap Service
   - Other Ground Handling Services
   - None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services? Yes X No

3. Would your air carrier have a need for an improvement in the quality of service? Yes X No

4. Would your air carrier like a reduction in price for these services? Yes X No

5. Any other comments you may have: Contract Services will continue to utilize whose and when savings can be accomplished.
Optional Information:

Your Name: Robert L. Davis - Mac Ramp Services
Air Carrier: USAir
Airport: Orlando

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [x] Fueling
   - [ ] Maintenance
   - [x] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - [x] Yes
   - [ ] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [ ] Yes
   - [x] No

4. Would your air carrier like a reduction in price for these services?
   - [x] Yes
   - [ ] No

5. Any other comments you may have: The present mainline fuel contract is needed. Potential improvement in service along with cost reduction then changes in providing service were major factors of consideration. Skycap Service is independent contractor not associated with FBO.
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AERONAUTICAL UNIVERSITY
SURVEY

Optional Information:

Your Name: [No Name Provided]

Air Carrier: Continental

Airport: [No Airport Name Provided]

Check or fill in your response.

1. Which of the following FBO services does your air carrier use?
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [X] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes [X] No [ ]

3. Would your air carrier have a need for an improvement in the quality of service? Yes [ ] No [X]

4. Would your air carrier like a reduction in price for these services? Yes [ ] No [X]

5. Any other comments you may have: ________________________________________________________________
   ________________________________________________________________
Optional Information:

Your Name: A. E. Enright
Air Carrier: American Airlines
Airport: Orlando International Airport

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [x] Fueling
   - [x] Maintenance
   - [x] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?  
   Yes [x]  No [ ]

3. Would your air carrier have a need for an improvement in the quality of service?  
   Yes [ ]  No [x]

4. Would your air carrier like a reduction in price for these services?  
   Yes [x]  No [ ]

5. Any other comments you may have: __________________________
   __________________________
   __________________________
Optional Information:

Your Name: **MARK THOMAS**

Air Carrier: **CONTINENTAL**

Airport: **SAN FRANCISCO**

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - Baggage Handling
   - A/C Cleaning
   - Fueling
   - Maintenance
   - Skycap Service
   - Other Ground Handling Services
   - None of the above. If so, Stop Here! **A/C WASH**

2. Is your air carrier satisfied with these services? Yes _ No _

3. Would your air carrier have a need for an improvement in the quality of service? Yes _ No _

4. Would your air carrier like a reduction in price for these services? Yes _ No _

5. Any other comments you may have:
   - **FUELS 1-3 OFFICE I SKYCAP**
   - **YES**
Optional Information:
Your Name: Rich Hochmut
Air Carrier: Continental
Airport: Daytona Beach

Check or fill in your response.

1. Which of the following FBO services does your air carrier use?
   - [ ] Baggage Handling
   - [x] A/C Cleaning
   - [x] Fueling
   - [x] Maintenance
   - [x] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - [x] Yes
   - [ ] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [x] Yes
   - [ ] No

4. Would your air carrier like a reduction in price for these services?
   - [x] Yes
   - [ ] No

5. Any other comments you may have:
   - [ ] Satisfied in some areas. Not completely so in others.

---

Current FBO Services: only company on field providing above services in SAB.
Optional Information:

Your Name: Mike Kelley
Air Carrier: Continental Airlines
Airport: PNS Pensacola Regional Airport

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   ___ Baggage Handling
   ___ A/C Cleaning
   X Fueling
   X Maintenance
   X Skycap Service
   ___ Other Ground Handling Services
   ___ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services? Yes X No ___ But could use improvement

3. Would your air carrier have a need for an improvement in the quality of service? Yes X No ___

4. Would your air carrier like a reduction in price for these services? Yes X No ___

5. Any other comments you may have: _______________________________
_________________________________________________________________
_________________________________________________________________
Optional Information:

Your Name: ________________________________

Air Carrier: CARNIVAL AIRLINES

Airport: ____________

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [ ] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services? Yes [ ] No [ ]

3. Would your air carrier have a need for an improvement in the quality of service? Yes [ ] No [ ]

4. Would your air carrier like a reduction in price for these services? Yes [ ] No [ ]

5. Any other comments you may have: ________________________________
   __________________________________________________________________
   __________________________________________________________________
Optional Information:
Your Name: ____________________________________________
Air Carrier: ___ CONTINENTAL
Airport: ___ JACKSONVILLE, FL

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   ___ Baggage Handling
   ___ A/C Cleaning
   ___ [Checked] Fueling
   ___ Maintenance
   ___ Skycap Service
   ___ Other Ground Handling Services
   ___ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes ___ No ___

3. Would your air carrier have a need for an improvement in the quality of service? Yes ___ No ___

4. Would your air carrier like a reduction in price for these services? Yes ___ No ___

5. Any other comments you may have: ____________________________
   [Write comments here]
Optional Information:

Your Name: **Joe Barnes**

Air Carrier: **Continental**

Airport: **RSW**

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [X] Fueling
   - [X] Maintenance
   - [X] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services? Yes [ ] No [X]

3. Would your air carrier have a need for an improvement in the quality of service? Yes [ ] No [X]

4. Would your air carrier like a reduction in price for these services? Yes [X] No [ ]

5. Any other comments you may have:

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
Optional Information:
Your Name: ____________________________
Air Carrier: ________ AMERICAN AIRLINES ____________
Airport: ________________ RSW

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   ____ Baggage Handling
   ____ A/C Cleaning
   ____ Fueling
   ____ Maintenance
   ____ Skycap Service
   ____ Other Ground Handling Services
   ____ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?  
   Yes ____ No ___

3. Would your air carrier have a need for an improvement in the quality of service? Yes ____ No ___

4. Would your air carrier like a reduction in price for these services? Yes Always No ___

5. Any other comments you may have: Each function is performed by a separate company.
Optional Information:

Your Name: ____________________________

Air Carrier: UNITED AIRLINES

Airport: SRQ

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [ ] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes [x] No ___

3. Would your air carrier have a need for an improvement in the quality of service?
   Yes ___ No [x]

4. Would your air carrier like a reduction in price for these services?
   Yes [x] No ___

5. Any other comments you may have: ________________________________

______________________________
Optional Information:

Your Name: ________________________________
Air Carrier: ALOHA AIRLINES
Airport: MCO

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [X] A/C Cleaning
   - [X] Fueling
   - [X] Maintenance
   - [X] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services? 
   Yes [X]  No [ ]

3. Would your air carrier have a need for an improvement in the quality of service? Yes [ ]  No [X]

4. Would your air carrier like a reduction in price for these services? Yes [ ]  No [ ]

5. Any other comments you may have: ________________________________
   ______________________________________________________________
   ______________________________________________________________
Optional Information:

Your Name: ____________________________

Air Carrier: AMERICAN AIRLINES

Airport: APF

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling  [✓]
   - [✓] A/C Cleaning
   - [ ] Fueling
   - [✓] Maintenance
   - [✓] Skycap Service
   - [✓] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - [✓] Yes  [ ] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [✓] Yes  [ ] No

4. Would your air carrier like a reduction in price for these services?
   - [✓] Yes  [ ] No

5. Any other comments you may have: __________________________________________

________________________________________

________________________________________
Optional Information:
Your Name:______________________________________________
Air Carrier: US AIR____________________________________
Airport: APF___________________________________________

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [x] A/C Cleaning
   - [x] Fueling
   - [ ] Maintenance
   - [x] Skycap Service
   - [x] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?  
   Yes [ ]  No [x]

3. Would your air carrier have a need for an improvement in the quality of service?  
   Yes [x]  No [ ]

4. Would your air carrier like a reduction in price for these services?  
   Yes [x]  No [ ]

5. Any other comments you may have: ________________________________________________
   ________________________________________________
   ________________________________________________
Optional Information:

Your Name: ________________________________

Air Carrier: TWA

Airport: SRQ

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [ ] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes [ ] No [ ]

3. Would your air carrier have a need for an improvement in the quality of service? Yes [ ] No [ ]

4. Would your air carrier like a reduction in price for these services? Yes [ ] No [ ]

5. Any other comments you may have: ________________________________
   ________________________________________________________________
Optional Information:

Your Name: __________________________

Air Carrier: Paradise Airlines

Airport: PBI

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [x] A/C Cleaning
   - [x] Fueling
   - [x] Maintenance
   - [x] Skycap Service
   - [x] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   Yes [x]  No [ ]

3. Would your air carrier have a need for an improvement in the quality of service? Yes [x]  No [ ]

4. Would your air carrier like a reduction in price for these services? Yes [x]  No [ ]

5. Any other comments you may have:
   ______________________________________________________
   ______________________________________________________
   ______________________________________________________
Optional Information:

Your Name: ________________________________

Air Carrier: AMERICAN AIRLINES

Airport: TLH

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:

   ✔ Baggage Handling
   ✔ A/C Cleaning
   ✔ Fueling
   ✔ Maintenance
   ✔ Skycap Service
   ✔ Other Ground Handling Services
   __ None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services? Yes ☑ No __

3. Would your air carrier have a need for an improvement in the quality of service? Yes ___ No ☑

4. Would your air carrier like a reduction in price for these services? Yes ☑ No __

5. Any other comments you may have: __________________________________________
   __________________________________________
   __________________________________________
Optional Information:

Your Name: ____________________________

Air Carrier: Continental

Airport: MLB

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [X] Fueling
   - [X] Maintenance
   - [X] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - [ ] Yes
   - [X] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [ ] Yes
   - [X] No

4. Would your air carrier like a reduction in price for these services?
   - [X] Yes
   - [ ] No

5. Any other comments you may have: __________________________________________
   __________________________________________
   __________________________________________
Optional Information:

Your Name: ____________________________

Air Carrier: Cayman Airlines

Airport: PIE

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [ ] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - [ ] Yes
   - [ ] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [ ] Yes
   - [ ] No

4. Would your air carrier like a reduction in price for these services?
   - [ ] Yes
   - [ ] No

5. Any other comments you may have: ____________________________________________
   ____________________________________________
Optional Information:
Your Name: __________________________
Air Carrier: Air Canada
Airport: PBI

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [ ] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - [ ] Yes
   - [x] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [ ] Yes
   - [x] No

4. Would your air carrier like a reduction in price for these services?
   - [ ] Yes
   - [x] No

5. Any other comments you may have:__________________________________________
__________________________________________
__________________________________________
Optional Information:

Your Name: _______________________

Air Carrier: Air Jamaica

Airport: PIE

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [X] A/C Cleaning
   - [ ] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [X] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - [ ] Yes
   - [ ] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [ ] Yes
   - [ ] No

4. Would your air carrier like a reduction in price for these services?
   - [ ] Yes
   - [ ] No

5. Any other comments you may have: _______________________

                                    _______________________
                                    _______________________
                                    _______________________
Optional Information:

Your Name: ________________________________________________

Air Carrier: AA

Airport: MTH

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [X] A/C Cleaning
   - [X] Fueling
   - [X] Maintenance
   - [ ] Skycap Service
   - [X] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - Yes [X]  No [ ]

3. Would your air carrier have a need for an improvement in the quality of service? Yes [X]  No [ ]

4. Would your air carrier like a reduction in price for these services? Yes [X]  No [ ]

5. Any other comments you may have: ______________________________

______________________________
______________________________
______________________________
Optional Information:
Your Name:________________________________________
Air Carrier:________________________________________
Airport:__________________________________________

Check or fill in your response.

1. Which of the following FBO services does your air carrier use:
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [x] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [x] Other Ground Handling Services
   - [ ] None of the above. If so, stop here!

2. Is your air carrier satisfied with these services?
   - [x] Yes
   - [ ] No

3. Would your air carrier have a need for an improvement in the quality of service?
   - [x] Yes
   - [ ] No

4. Would your air carrier like a reduction in price for these services?
   - [x] Yes
   - [ ] No

5. Any other comments you may have:________________________________________
   ____________________________________________________________
Optional Information:

Your Name: **MICHAEL BARKLEY**

Air Carrier: **NORTHWEST AIRLINES**

Airport: **ORLANDO**

Check or fill in your response.

1. Which of the following FBO services does your air carrier use?
   - [ ] Baggage Handling
   - [ ] A/C Cleaning
   - [X] Fueling
   - [ ] Maintenance
   - [ ] Skycap Service
   - [ ] Other Ground Handling Services
   - [ ] None of the above. If so, Stop Here!

2. Is your air carrier satisfied with these services?
   - Yes [X]  No [ ]

3. Would your air carrier have a need for an improvement in the quality of service?
   - Yes [X]  No [ ]

4. Would your air carrier like a reduction in price for these services?
   - Yes [X]  No [ ]

5. Any other comments you may have:

   __________________________________________________________
   __________________________________________________________
APPENDIX B:

SIGNIFICANCE OF DISCOUNT MARGIN
Optional Information:

Your Name:__________________________________________

Air Carrier:__________________________________________

Airport:_____________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:__________________________________________

Air Carrier:________________________________________

Airport:___________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

[ ] 5% [ ] 10% [ ] 15% [ ] 20% [ ] 25% [ ] 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*($200.00 - 10.00 = $190.00)
Optional Information:

Your Name: ________________________________

Air Carrier: ______________________________

Airport: ________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:________________________________________

Air Carrier:________________________________________

Airport:____________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:__________________________________________

Air Carrier:_________________________________________

Airport:_____________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% [10%] 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name: ________________________________

Air Carrier: ________________________________

Airport: ________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:___________________________

Air Carrier:__________________________

Airport:_____________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*($200.00 - 10.00 = $190.00)
Optional Information:

Your Name: ________________________________________

Air Carrier: _________________________________________

Airport: ____________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name: ________________________________
Air Carrier: ________________________________
Airport: ________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:_______________________________________________________

Air Carrier:______________________________________________________

Airport:_________________________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

- 5%
- 10%
- 15%
- 20%
- 25%
- 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:____________________________________________________________

Air Carrier:____________________________________________________________

Airport:_______________________________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information;

Your Name: ____________________________________________

Air Carrier: ____________________________________________

Airport: ________________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

[ ] 5%  [ ] 10%  [ ] 15%  [ ] 20%  [ ] 25%  [ ] 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name: ____________________________________________

Air Carrier: ____________________________________________

Airport: ________________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:_______________________________________

Air Carrier:_______________________________________

Airport:___________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

[ ] 5%  [ ] 10%  [ ] 15%  [ ] 20%  [ ] 25%  [ ] 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:__________________________________________

Air Carrier:________________________________________

Airport:__________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:______________________________________________________

Air Carrier:______________________________________________________

Airport:__________________________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*\$200.00 - 10.00 = \$190.00
Optional Information:

Your Name:__________________________________________

Air Carrier:________________________________________

Airport:____________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:__________________________________________

Air Carrier:________________________________________

Airport:____________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

(5%) 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name: 

Air Carrier: 

Airport: 

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:__________________________________________

Air Carrier:_______________________________________

Airport:___________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:__________________________________________

Air Carrier:__________________________________________

Airport:______________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:______________________________

Air Carrier:______________________________

Airport:______________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

* With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:________________________________________

Air Carrier:________________________________________

Airport:___________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

  [ ] 5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name: ____________________________________________

Air Carrier: ____________________________________________

Airport: ________________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

[ ] 5%  [ ] 10%  [ ] 15%  [ ] 20%  [ ] 25%  [ ] 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:__________________________________________

Air Carrier:________________________________________

Airport:________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
SURVEY

Optional Information:

Your Name:__________________________________________

Air Carrier:________________________________________

Airport:____________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

[ ] 5%  [ ] 10%  [ ] 15%  [ ] 20%  [ ] 25%  [ ] 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
THESIS PROJECT SURVEY

SURVEY

Optional Information:

Your Name:__________________________________________

Air Carrier:________________________________________

Airport:___________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:______________________________________

Air Carrier:______________________________________

Airport:__________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*($200.00 - 10.00 = $190.00)
Optional Information:

Your Name: ________________________________

Air Carrier: ________________________________

Airport: ________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

[ ] 5%  [ ] 10%  [ ] 15%  [ ] 20%  [ ] 25%  [ ] 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

* $200.00 - 10.00 = $190.00
Optional Information:
Your Name:________________________________________
Air Carrier:________________________________________
Airport:________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5%  10%  15%  20%  25%  30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name:________________________________________

Air Carrier:_______________________________________

Airport:___________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

(5%) 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

* $200.00 - 10.00 = $190.00
Optional Information:

Your Name:__________________________________________

Air Carrier:_________________________________________

Airport:_____________________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
Optional Information:

Your Name: ________________________________
Air Carrier: ______________________________
Airport: _________________________________

Circle your response.

What percentage in price reduction would cause you to change from the company that presently provides your ground handling services, fueling services, skycap services, overnight cleans, push backs, and off schedule operations?

5% 10% 15% 20% 25% 30%

EXAMPLE OF A 5% DECREASE IN PRICE:

Present ground handling charge is $200.00.

With a 5% reduction, the new price would be $190.00*.

*$200.00 - 10.00 = $190.00
APPENDIX C:

FIXED BASE OPERATOR COSTS PER FLIGHT
10/28/93

Dear Mr. Vergas:

Thank you for your interest in Jet South. We offer a wide variety of services to meet your needs. These many services include the following:

- Ground power unit
- Aircraft maintenance
- Lavatory service
- Quick cabin cleaning
- Catering
- Portable water
- Fuel
- AirStair (if needed)
- Customer service counter help

Our handling fee for these services is $200.00 per plane, round trip. If you need any further assistance, please do not hesitate to contact me.

Sincerely,

Diana Duque
Customer Service Manager
APPENDIX D:

APRON SERVICES
LIST OF APRON SERVICES

• Each flight operation consists of:
  1.0 Ground Handling (G/H)
    1.1 Ground Handling Service
      1.1.1 Water service
      1.1.2 Lavatory service
      1.1.3 Air condition service
      1.1.4 Push backs
      1.1.5 Ground power
      1.1.6 Pneumatic air starts
      1.1.7 Aircraft movement handling
      1.1.8 Baggage handling
  1.2 Fueling
  1.3 Push Back
  1.4 Skycap
• Overnight (O/C) clean
• Off-schedule operations
APPENDIX E:

SKYCAP SERVICE CHARGES
SKYCAP SERVICE CHARGES

ARRIVING FLIGHT:
2 workers * .75 hours * $8.25 = 12.375

DEPARTING FLIGHT:
2 workers * 1 hour * $8.25 = 16.50

TOTAL AVERAGE SKYCAP SERVICE CHARGE: 28.875

$28.875 = $28.88 per flight operation.
APPENDIX F:

AVERAGE SERVICE CHARGES
AVERAGE SERVICE CHARGES

(in dollars)

<table>
<thead>
<tr>
<th></th>
<th>G/H</th>
<th>F</th>
<th>S/S</th>
<th>O/C</th>
<th>P/B</th>
<th>O-S/O</th>
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<tbody>
<tr>
<td>175.00</td>
<td>42.50</td>
<td>28.94</td>
<td>112.50</td>
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<td></td>
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<tr>
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<td>31.50</td>
<td>112.50</td>
<td>35.00</td>
<td>10.00</td>
<td></td>
</tr>
<tr>
<td>150.00</td>
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<td>26.25</td>
<td>112.50</td>
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<td>165.00</td>
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<tr>
<td>185.00</td>
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<td>24.75</td>
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<td>170.00</td>
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<td>180.00</td>
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<td>24.75</td>
<td>110.00</td>
<td>40.00</td>
<td>25.00</td>
<td></td>
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<td>112.50</td>
<td>40.00</td>
<td>10.00</td>
<td></td>
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<tr>
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<td>25.00</td>
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<td>30.00</td>
<td>10.00</td>
<td></td>
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<td>175.00</td>
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<td>35.00</td>
<td>25.00</td>
<td></td>
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<tr>
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<td>10.00</td>
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<td>40.00</td>
<td>25.00</td>
<td></td>
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<tr>
<td>170.00</td>
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<td>112.50</td>
<td>30.00</td>
<td>10.00</td>
<td></td>
</tr>
<tr>
<td>200.00</td>
<td>25.00</td>
<td>28.88</td>
<td>112.50</td>
<td>40.00</td>
<td>25.00</td>
<td></td>
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<tr>
<td>145.00</td>
<td>50.00</td>
<td>28.88</td>
<td>112.50</td>
<td>35.00</td>
<td>10.00</td>
<td></td>
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</table>

AVERAGES

<table>
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<tr>
<th></th>
<th>G/H</th>
<th>F</th>
<th>S/S</th>
<th>O/C</th>
<th>P/B</th>
<th>O-S/O</th>
</tr>
</thead>
<tbody>
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<td>175.00</td>
<td>37.50</td>
<td>28.88</td>
<td>112.50</td>
<td>35.00</td>
<td>17.50</td>
<td></td>
</tr>
</tbody>
</table>

30 Most FBOs requested to remain anonymous with respect to printing their charges with the exception of one (see Appendix C).
APPENDIX G:

FIGURES FOR SALES-MIX ANALYSIS
FIGURE 1G
GROUND HANDLING REVENUES

1.0 Ground handling

1.1 Ground handling service \[175^a - (0.05 \times 175)\] = 166.25
1.2 Fueling \[37.50^b - (0.05 \times 37.05)\] = 35.63
1.3 Push back service \[35^c - (0.05 \times 35.00)\] = 33.25
1.4 Skycap service \[28.88^d - (0.05 \times 28.88)\] = 27.44

Total revenues: 262.57

TOTAL REVENUE FROM GROUND HANDLING SERVICE:
(120 flights) \times (262.57) = $31,508.40

\(^a\) Table 4.
\(^b\) Table 4.
\(^c\) Table 4.
\(^d\) Table 4.
FIGURE 2G

OVERNIGHT CLEAN REVENUES

Dollars

Overnight cleans \[112.50 - (0.05 \times 112.50) = 106.88\]

TOTAL REVENUE FROM OVERNIGHT CLEANING:

\[(30 \text{ O/C's per month} \times 106.88) = \$3,206.40\]

* Table 4.
FIGURE 3G

OFF-SCHEDULE OPERATIONS VARIABLE COSTS

Dollars

Off-schedule operations \[17.50 - (0.05 \times 17.50)\] = 16.63

($16.63 per 15 minute increments above the grace period)

OR

($33.26 per \frac{1}{4} hour above the grace period)

TOTAL OFF-SCHEDULE OPERATIONS REVENUE: $133.04*

*(33.26 \times 4 \text{ off-schedule operations}) = $133.04
FIGURE 4G
GROUND HANDLING VARIABLE EXPENSES

Dollars

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>13,020*</td>
</tr>
<tr>
<td>Fuel</td>
<td>1,500*</td>
</tr>
<tr>
<td>Other supplies</td>
<td>120°</td>
</tr>
<tr>
<td>TOTAL EXPENSE:</td>
<td>14,640</td>
</tr>
</tbody>
</table>

NOTE: All per unit costs are provided by FBO's. Ex: price of fuel.

* 5 people * $7.00* * 8 hours (two four hour shifts) = $280.00
  $280 * 30 days = $8400 &
  1 fueler * $7.00* * 8 hours = $56.00
  $56 * 30 days = $1680 &
  2 skycap emp. * $7.00* * 1.75 hours * 120 flights = $2,940

b 10 gallons * $1.25/gal. = $12.50
  $12.50 * 4 flights * 30 days = $1500

c Blue liquid for lavatory truck 5 gal. @ .20/gal. is $1.00.
  $1.00 * 4 flights * 30 days = $120

*Includes benefits, employer taxes, and workmen's compensation.
FIGURE 5G
OVERNIGHT CLEANING VARIABLE COSTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>840.00</td>
</tr>
<tr>
<td>Materials (janitorial products)</td>
<td>300.00</td>
</tr>
</tbody>
</table>

TOTAL EXPENSE: 1140.00

NOTE: All per unit costs are provided by FBO’s. Ex: price of fuel.

* 2 people * $7.00 * 2 hours = $28.00

$28 * 30 days = $840

b Three FBO’s claim approximately $10.00/ O/C is variable cost of materials used (janitorial products).

$10 * 30 days = $300

*Includes benefits, employer taxes, and workmen’s compensation.
FIGURE 6G

OFF-SCHEDULE OPERATION VARIABLE COSTS

Dollars

Labor  132.00

* 5 people * $5.50\times 4 \text{ hours (4 \frac{1}{2} \text{ hour O-S/O})} = 110.00

1 \text{ fueler} * $5.50 \times 4 \text{ hours} = 22.00

*Includes only the per hour rate.
**FIGURE 7G**

**FIXED COSTS FOR G. & H. EXPRESS, CO.**  

<table>
<thead>
<tr>
<th>Category</th>
<th>Costs</th>
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</thead>
<tbody>
<tr>
<td><strong>General:</strong></td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>2,400.00*</td>
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<tr>
<td>Supervisor’s Salary</td>
<td>4,166.67b</td>
</tr>
<tr>
<td>Office Expense</td>
<td>1,320.00c</td>
</tr>
<tr>
<td>Rent</td>
<td>404.17d</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>50.00e</td>
</tr>
<tr>
<td>Misc. Expense</td>
<td>150.00f</td>
</tr>
<tr>
<td><strong>Ground Handling:</strong></td>
<td></td>
</tr>
<tr>
<td>Uniforms</td>
<td>843.43g</td>
</tr>
<tr>
<td>Equipment Depreciation</td>
<td>774.54h</td>
</tr>
<tr>
<td>Repair and Maintenance</td>
<td>300.00i</td>
</tr>
<tr>
<td>Misc. Expenses</td>
<td>150.00k</td>
</tr>
<tr>
<td><strong>Overnight Cleaning:</strong></td>
<td></td>
</tr>
<tr>
<td>Misc. Expenses</td>
<td>150.00l</td>
</tr>
<tr>
<td><strong>Off-Schedule Operations</strong></td>
<td>0.00</td>
</tr>
</tbody>
</table>

**TOTAL FIXED EXPENSES:**  

$10,708.81

**NOTE:** Some of the information needed for calculations is provided by FBOs in the same scenario of operation, excluding the fixed costs of other services they offer. It is assumed the investors of G. & H. Express Co. have $1,000,000 for the fuel farm and $92,945 for equipment. Therefore, no cost of capital is calculated into the total fixed expenses, i.e. no interest payments or loan notes outstanding. Depreciation for the fuel farm is also ignored since some air carriers have ownership in fuel farms and the FBO would not have to construct a fuel farm. In these scenarios the FBO does not pay rent for using the air carrier’s fuel farm, the air carrier pays a lower price for having the FBO pump the fuel. No research was done to look at the percentage of these cases. Equipment depreciation is used in the calculations of total fixed expenses since in the majority of the population the FBO purchased the equipment.

* $100,000,000 coverage costs $2,400/mo.

b Includes a supervisor per shift earning $25,000 salary. This salary figure includes taxes, workmen’s compensation, and benefits. ($50,000 divided by 12 months) = $4,166.67

c Includes labor costs for a secretary.

d Includes $2,100 per for the fuel farm land rental and $2,750 for office space rental.

* Assumed that $50 per month for office supplies.
Includes unexpected purchases of supplies.

\[ \text{\$4.92 for a week's set of uniforms per employee} \]
\[ (\text{\$4.92 \times 10 \text{ ground handlers} \times 2 \text{ fuelers} \times 2 \text{ supervisors})} \]
\[ \text{= \$196.80 / 7 days = \$28.11 \times 30 \text{ days} = \$843.43} \]

\[ \text{\$92,945 from Figure 8G is depreciated through straight line} \]
\[ \text{depreciation for 10 yrs.} \]
\[ (\text{\$92,945 / 10 yrs} / 12 \text{ mo.} = \text{\$774.54}} \]

Based on estimate of \$300 per month as provided by a FBO.

\[ \text{Purchase of gloves and other unexpected expenses.} \]

For unexpected expenses.

\[ \text{An addition of all the costs.} \]
FIGURE 8G

EQUIPMENT REQUIRED AND COSTS
(Purchase considered only)

EQUIPMENT:

For each flight operation:

1.0 For ground handling service:
   1.1 Drinking water truck  $1,500
   1.2 Lavatory truck  $3,500
   1.3 Air conditioning unit  $3,500
   1.4 Ground power unit  $10,000
   1.5 Pneumatic air starter  $3,000
   1.6 Two baggage cart tugs  $6,500
   1.7 Five baggage carts  $1,000
   1.8 Two belt loaders  $3,500

2.0 For fueling service:
   2.1 One fuel truck  $50,000

3.0 For push back service:
   3.1 One push back tug  $10,000
   3.2 One push back arm  $150

4.0 For skycap service:
   4.1 Two baggage dollies  $100

Overnight cleaning requires:

1.0 Vacuum cleaner  $100

2.0 Two trash cans  $20

3.0 Cleaning cart  $75

TOTAL INITIAL EQUIPMENT COSTS ARE:  $92,945

NOTE: All of the above prices were provided by Pitt Power Systems in Ellenwood, GA
APPENDIX H

FIGURES FOR MODEL'S SALES-MIX ANALYSIS
FIGURE 1H
GROUND HANDLING REVENUES

1.0 Ground handling

1.1 Ground handling service $[175^* - (.05 * 175)] = 166.25$

1.2 Fueling $[37.50^b - (.05 * 37.05)] = 35.63$

1.3 Push back service $[35^c - (.05 * 35.00)] = 33.25$

1.4 Skycap service $[28.88^d - (.05 * 28.88)] = 27.44$

Total revenues: 262.57

TOTAL REVENUE FROM GROUND HANDLING SERVICE:

$(120 \text{ flights}) \times (262.57) = \$31,508.40$

* See Table 4.

b See Table 4.

c See Table 4.

d See Table 4.
FIGURE 2H
OVERNIGHT CLEAN REVENUE

Dollars

Overnight cleans \[112.50 - (0.05 \times 112.50)\] = 106.88

TOTAL REVENUE FROM OVERNIGHT CLEANING:
(30 O/C’s per month \times 106.88) = $3,206.40

* See Table 4.
FIGURE 3H

OFF-SCHEDULE OPERATIONS REVENUES

Dollars

Off-schedule operations \([17.50 - (.05 \times 17.50)]\) = 16.63

($16.63 per 15 minute increments above the grace period)

OR

($33.26 per \(\frac{1}{2}\) hour above the grace period)

TOTAL OFF-SCHEDULE OPERATIONS REVENUE:

\((33.26 \times 4\) off-schedule operations) = $133.04
FIGURE 4H
GROUND HANDLING VARIABLE EXPENSES

<table>
<thead>
<tr>
<th>Item</th>
<th>Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>8,456 a</td>
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<tr>
<td>Fuel</td>
<td>1,500 b</td>
</tr>
<tr>
<td>Other supplies</td>
<td>120 c</td>
</tr>
<tr>
<td><strong>TOTAL EXPENSE</strong></td>
<td>10,076</td>
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</table>

**NOTE:** All per unit costs are provided by FBO’s. Ex: price of fuel.

- 4 people * $7.00* * 8 hours (two four hour shifts) = $224.00
  
  $224 * 30 days = $6720 &

- 1 fueler * $7.00* * 8 hours = $56.00
  
  $56 * 30 days = $1680 &

- 2 skycap emp. * $7.00* * 1.75 hours * 120 flights = $2,940
  
  * Includes benefits, employer taxes, and workmen’s compensation.
FIGURE 5H

OVERNIGHT CLEANING VARIABLE COSTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>$840.00</td>
</tr>
<tr>
<td>Materials (janitorial products)</td>
<td>$300.00</td>
</tr>
</tbody>
</table>

**TOTAL EXPENSE:** $1140.00

**NOTE:** All per unit costs are provided by FBO's. Ex: price of fuel.

* 2 people * $7.00 * 2 hours = $28.00

$28 * 30 days = $840

* Three FBO's claim approximately $10.00/O/C is variable cost of materials used (janitorial products).

$10 * 30 days = $300

* Includes benefits, employer taxes, and workmen's compensation.
FIGURE 6H

OFF-SCHEDULE OPERATION VARIABLE COSTS

Dollars

Labor 132.00*

* 5 people * $5.50* * 4 hours (4 1/2 hour O-S/O) = $110.00

1 fueler * $5.50* * 4 hours = $22.00

*Includes only the per hour rate.
FIGURE 7H

FIXED COSTS FOR G. & H. EXPRESS, CO.

FIXED COSTS:

**General:**
- Insurance: 2,400.00*
- Supervisor’s Salary: 4,166.67*
- Office Expense: 1,320.00°
- Rent: 404.17°
- Office Supplies: 50.00°
- Misc. Expense: 150.00°
- Interest: 364.32°
- Loan Payment: 3,643.15*
- Accounting Fees: 125.00°

**Ground Handling:**
- Uniforms: 843.43°
- Equipment Depreciation: 774.54°
- Repair and Maintenance: 300.00°
- Salary (Maintenance worker): 4,000.00°
- Misc. Expenses: 150.00°

**Overnight Cleaning:**
- Misc. Expenses: 150.00°

**Off-Schedule Operations:**

TOTAL FIXED EXPENSES: $18,841.28°

* $100,000,000 coverage costs $2,400/mo.
* Includes a supervisor per shift earning $25,000 salary. This salary figure includes taxes, workmen’s compensation, and benefits. ($50,000 divided by 12 months) = $4,166.67
° Includes labor costs for a secretary.
° Includes $2,100 per for the fuel farm land rental and $2,750 for office space rental.
* Assumed that $50 per month for office supplies.
° Includes unexpected purchases of supplies.
* $4.92 for a weeks set of uniforms per employee
  ($4.92 * 10 ground handlers * 2 fuelers * 2 supervisors)
  =$196.80 / 7 days = $28.11 * 30 days = $843.43
° $92,945 from Figure 8J is depreciated through straight line depreciation for 10 yrs. [$92,945 / 10 yrs] / 12 mo. = $774.54
° Based on estimate of $300 per month as provided by a FBO.
° Purchase of gloves and other unexpected expenses.
° For unexpected expenses.
° An addition of all the costs.
° $1,092,945 commercial loan for 25 years @10% for equipment & fuel farm construction (simple interest loan).
° Assumed fee of $1,500 ($1,500 / 12 mo. = $125.00)
° 1 maintenance person per shift ($24,000/yr. each)
APPENDIX I

EQUIPMENT REQUIRED AND COSTS
## FIGURE 81

**EQUIPMENT REQUIRED AND COSTS**

(Purchase considered only)

### EQUIPMENT:

**For each flight operation:**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 For ground handling service:</td>
<td></td>
</tr>
<tr>
<td>1.1 Drinking water truck</td>
<td>1,500</td>
</tr>
<tr>
<td>1.2 Lavatory truck</td>
<td>3,500</td>
</tr>
<tr>
<td>1.3 Air conditioning unit</td>
<td>3,500</td>
</tr>
<tr>
<td>1.4 Ground power unit</td>
<td>10,000</td>
</tr>
<tr>
<td>1.5 Pneumatic air starter</td>
<td>3,000</td>
</tr>
<tr>
<td>1.6 Two baggage cart tugs</td>
<td>6,500</td>
</tr>
<tr>
<td>1.7 Five baggage carts</td>
<td>1,000</td>
</tr>
<tr>
<td>1.8 Two belt loaders</td>
<td>3,500</td>
</tr>
</tbody>
</table>

| 2.0 For fueling service:         |       |
| 2.1 One fuel truck               | 50,000|

| 3.0 For push back service:       |       |
| 3.1 One push back tug            | 10,000|
| 3.2 One push back arm            | 150   |

| 4.0 For skycap service:          |       |
| 4.1 Two baggage dollies          | 100   |

**Overnight cleaning requires:**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Vacuum cleaner</td>
<td>100</td>
</tr>
<tr>
<td>2.0 Two trash cans</td>
<td>20</td>
</tr>
<tr>
<td>3.0 Cleaning cart</td>
<td>75</td>
</tr>
</tbody>
</table>

**TOTAL INITIAL EQUIPMENT COSTS ARE:** $33,945

**NOTE:** All of the above prices were provided by Pitt Power Systems in Ellenwood, GA.