

The Great New England Air Show- An Economic Impact Study



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INTRODUCTION

Public events like air shows and fairs play a very important role in the economic and civic structure of the communities they serve. People of all ages enjoy air shows mainly due to the exhibits and the entertainment they provide. The influence of a well-organized air show enables the community to provide, to engage, and to attract visitors from a geographic region and the impact of the visitation contributes directly to the community's overall economic development.

The Westover Air Reserve Base has been in operation since 1940 and played an important role during World War II. It is the nation's largest Air Force Reserve Base, and is home to the Air Force's largest cargo aircraft, the C-5 Galaxy. More than 2,700 military and civilian workers are assigned to Westover's 439th Airlift Wing, a unit of Air Force Reserve Command. At present, Col. Robert R Swain Jr. is the commander of the 439th Airlift Wing. The mission of the wing is to provide worldwide movement of troops, supplies, equipment and medical patients. The 337th Airlift Squadron is the wing's flying unit, and operates the C-5. The C-5 specializes in missions involving outsized and oversized cargo that no other aircraft can carry.

The mission of the United States Air Force is to fly, fight and win -- in the air, space and cyber space. Westover Air Reserve Base has been the staging location of the Great New England Air Show and its location in Chicopee, Massachusetts makes it an attractive regional destination for nearly all of New England and significant portions of New York State. The Great New England Air Show (GNEAS) has been held at this location numerous times over the past decades and has established a rich history of highly successful events.

Despite its long history, there has been no detailed attempt to understand the value of the air show's contributions to the region and what the economic impact means in quantifiable terms.

Due to the perilous times that the current economy presents, more and more people prefer to travel closer to home for a vacation or for activities together with their families. Therefore, this study was undertaken. This economic impact study was commissioned by the Greater Springfield Convention & Visitors' Bureau to essentially measure the initial economic impact that the Great New England Air Show has on the local economy and to develop a baseline of impact measures for use in future events. A secondary opportunity in this study was to measure the visitors' perceptions of the event and to conduct a rudimentary market analysis of the visitors to this event.

This report focuses on how much spending and revenues were generated by the visitors at the air show, before and after, and its impact on the community as obtained from a sample of individuals who registered at the Great New England Air Show website for the event.

The study was completed through an online survey technique where more than 1,100 individuals participated, and the use of Qualtrics™ software was employed to gather and analyze the data.

EXECUTIVE SUMMARY AND PRESS RELEASE

Contact: Rod Warnick, Ph.D.; Professor
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FOR IMMEDIATE RELEASE

The Great New England Air Show helps boost the local economy, concludes a UMass Hospitality and Tourism Management study.

A comprehensive research study was undertaken to understand the economic impact generated by the Great New England Air Show held at Chicopee, MA for the Greater Springfield Convention and Visitors' Bureau and the Chicopee Galaxy Community Council in conjunction with University of Massachusetts Amherst's Hospitality and Tourism Management Department. The findings confirm a significant impact on the local economy with a potential to make it better through a set of recommendations.

Two graduate students from the UMass Hospitality and Tourism Management Department under the supervision of experienced faculty members conducted the study. Data were collected through intercept interviews at the event venue and through online surveys conducted by the team over a post-event, three-week period. The sample consisted of approximately 1,200 responses.

The overall economic impact of the air show on the local economy is estimated to be \$13.5 million. However, when local attendees were removed, the economic impact was still significant and estimated to be \$8.2 million. The economic impact was measured through eight (8) major spending categories and the bulk of the expenditures were for transportation costs (\$24.47 per group or 25% of the total); refreshments on site (\$20.53 per group or 21% of the total) and food purchases before or after the event (\$17.51 per group or 18% of the total). A regional multiplier of 1.5 was used in the estimates of overall impact.

An average group visiting the show consisted of approximately four (4) individuals including children. Average distance traveled one-way by visitors was 45 miles and the mean group expenditure amounted to \$98. While 65% of the visitors were between 13 and 47 years of age, 60% were highly interested in aircrafts, and 30% chose to attend as a source of family entertainment. Approximately 61% of the visitors were from outside the local area.

Overall satisfaction with the event was high (77% were satisfied or very satisfied); however, parking, access and traffic congestion were major concerns for the visitors, which were the main causes of the dissatisfaction and complaints. Of the visitors polled, 85% indicated with a high level of certainty that they would return in the next two (2) years with 57% of the sample indicating they would definitely return. Qualitative analysis of open-ended comments was compiled and a map of the visiting markets from the New England Region was presented. Nine (9) major recommendations were made on how to improve the event in the future.

The Hospitality and Tourism Management Department is an accredited program housed in the Isenberg School of Management with an enrollment of approximately 675 undergraduates and 35 graduate students. Students in the graduate program may complete a MS degree in the ISOM School. UMass Amherst, the flagship campus of the University of Massachusetts system, established in 1863, has a current enrollment of 26,360 students and over 1,180 full-time faculty members.

If you would like more information about this topic, or to schedule an interview with Rod Warnick, Ph.D., HTM Department, please call: 413-545-6629 or e-mail at warnick@som.umass.edu.

GNEAS HIGHLIGHTS

- The Westover Air Show, also now known as the Great New England Air Show (GNEAS) is the original air show in the Western Massachusetts area and has occasionally been held at the Barnes Airport in Westfield, Massachusetts.
- The Westover Air Reserve Base employs approximately 1,200 individuals of whom many are actively involved in staging and assisting the GNEAS.
- The 2008 Great New England Air Show attracted an estimated total of 345,000 people over two days. This is one of New England's largest special events.
- Visitors traveled an average of 45 miles, mostly from the South and East of the Westover Air Reserve Base (zip code 01022). Approximately 61% of the attendees were visitors from outside the local area.
- Average spending per visitor was approximately \$26 with the overall average group spending of \$98.
- The overall economic impact generated by the Great New England Air show was estimated to be \$13,452,255 and when locals were excluded the overall economic impact was \$8,188,255.
- 65 percent of the visitors to the event were between the ages of 13 and 47.
- 60 percent of the attendees have a keen interest in aircrafts and 30 percent of the visitors choose to attend it as a source of entertainment for their families.
- Overall satisfaction with the event was high (77 percent were satisfied or very satisfied with the event); however, parking, access and traffic congestion were major concerns for the visitors, which were the main causes of the dissatisfaction and complaints.
- Of the visitors polled, 85 percent indicated with high level of certainty that they would return in the next two (2) years with 57 percent of the sample indicating they would definitely return.

345,000
Visitors

\$13.5 Million
in economic impact

Highly
Involved Visitors

THE STUDY

This was the first attempt to measure the real economic impact of the Great New England Air Show. After a number of futile attempts to find any previous studies conducted on the Great New England Air Show (GNEAS), the focus turned to examining similar studies on air shows in general and specifically on economic impact studies (EIS) of such events. The search again returned no results. So, the effort became to design a survey instrument based on other EIS of special events.

Therefore, the researchers designed a comprehensive survey based on the framework of an EIS study of other special events and divided it into six distinct parts including sections for open-end survey comments of selected items. This ensured a smooth flow of questions. The questions ranged from motivation to come to the air show, to travel details, to expenditures and visitors' profile. It included the standard and direct questions pertinent to an EIS and other important market analysis and attendee satisfaction items.

These questions provided the basis for measuring the estimated economic impact information, and they also helped to measure other important parameters that are crucial in understanding the overall market and visitor dynamics.

The survey sections were divided into clear sub-topics for ease of understanding and flow logic to the participant completing the survey instrument. The sections included:

1. Interest in the GNEAS and Previous Experience with Air Show Events;
2. Motivation to Visit the GNEAS and Pioneer Valley
3. Purchase Decision Involvement in Air Shows and GNEAS

4. Travel Behavior Related to GNEAS and to the Pioneer Valley Region
5. Economic Impact Expenditures and Analysis
6. Demographic Profile of Visitors
7. Visitor Comments – A Qualitative Analysis of Open-Ended Statements

This year's air show was held at the Westover Air Base on the weekend of September 6-7, 2008. The gates to the airbase opened at 8:00 A.M. with the show starting at 9:00 A.M. and concluded both days with the Thunderbirds' performance at 5:00 P.M.

Though the survey instrument did not go through a validation process, it was developed utilizing standardized Economic Impact Study statements and standardized market analysis questions that have proven to have high validity and reliability. Participants were initially intercepted at random locations on the airbase during the two days and interviewed. However, the response rate was very low with only 60 responses. This process was then used as the pilot study and served as the basis for improving the survey instrument, flow and the EIS process. Also, while conducting surveys at the site, subjects were given the option to provide an email address if they wanted to take the survey online after the show and numerous attendees were able to register for the event at the official GNEAS web site. A revised version of the survey was posted online utilizing Qualtrics™ survey software. The new survey gave two separate opportunities to the customers for expressing satisfaction with, and opinions about the air show.

An extensive list of email addresses was provided by The Galaxy Community Council that was running an independent promotion of the event. The email addresses consisted of air show enthusiasts who visited the GNEAS website and registered for a free air show poster.

Approximately 3,100 individuals registered at this site over a three-week period leading up to the show.

The survey was sent to the compiled list of email addresses utilizing the “Distribute Survey” tool at the Qualtrics™ website. Below are details of the survey response rates.

Stage	Count
Total surveys e-mailed	3,078
Surveys not deliverable	06
Surveys successfully delivered	3,072
Surveys started	1,198
Surveys completed	1,106

The Response Rate = 1106 (*Total number of surveys completed*) / 3072 (*Number of surveys successfully delivered*) x 100 = 36 percent.

The first set of survey was e-mailed to 153 addresses on September 22nd, 2008 and the second set of 2,925 e-mails was sent on October 2nd, 2008. An initial set was sent to test the Qualtrics™ system and then after this test run, the second batch was emailed. Recipients were advised of the survey closing date of October 20th, 2008. Reminder emails were also sent for each respective batch on October 5th, 2008 and October 14th, 2008 for the batch of 153 email addresses and October 6th, 2008 and October 14th, 2008 for the batch of 2,925 email addresses. Thank You notes were sent out automatically by the system when surveys were completed.

Background to the EIS and Market Analysis Study

The Federal Reserve in 2008 announced that the United States was indeed in a recession and had actually been so since December 2007. Even though it had not been officially announced, households were already feeling the pinch due to a variety of rising costs and were beginning to cut back. Most notably were the increases in costs of travel and related basic goods (food, groceries and basic household items). Due to the increase in gas prices to over \$4 per gallon in the Summer of 2008 and the increases in the cost of other basic commodities during the period, it was clear that households had begun to resort to other ways to spend vacations that were closer to home and to concentrate on spending quality time at or near home with their families. In some cases, this was referred to as “staycation” -- spending quality time during a vacation period at or near one’s home and attending events closer to home. Therefore, public events and fairs closer to home were fast becoming the best options that people had in this slowing economic period. This alone cannot be ruled out as the primary reason for attending the air show, but it is likely that it did play an important role in attracting visitors. People also attend air shows from time-to-time for other reasons such as it is a form of entertainment that they do not get to witness often and to support the military, especially during a time when the country is at war.

Frechtling (1994) defined economic impact analysis as a process that traces the flows of spending associated with tourism activity in a region to identify changes in sales, tax revenues, income, and jobs due to tourism activity.

Tourism activity also involves economic costs, including the direct costs incurred by tourism businesses, government costs for infrastructure to better serve tourists, as well as congestion and related costs borne by individuals in the community. Thus, tourism’s economic impacts are an

important consideration in state, regional and community planning and economic development (Stynes, 1997).

These impacts also have added importance in creating future marketing and management strategies. Therefore, it is imperative to understand the economic impacts of tourism events on a particular area. There are various kinds of economic impacts of tourism on the economy of an area. Below is an explanation, adapted from Stynes (1997):

Direct effects are production changes associated with the immediate effects of changes in tourism expenditures. For example, an increase in the number of tourists staying overnight in hotels would directly yield increased sales in the hotel sector. The additional hotel sales and associated changes in hotel payments for wages and salaries, taxes, and supplies and services are “direct effects” of the tourist spending.

Indirect effects are the production changes resulting from various rounds of re-spending of the hotel industry's receipts in other backward-linked industries (i.e., industries supplying products and services to hotels). Changes in sales, jobs, and income in the linen supply industry, for example, represent indirect effects of changes in hotel sales. Businesses supplying products and services to the linen supply industry represent another round of indirect effects, eventually linking hotels to varying degrees to many other economic sectors in the region are the measure of “indirect effects” of the event on the economy.

Induced effects are the changes in economic activity resulting from household spending of income earned directly or indirectly as a result of tourism spending. For example, hotel and linen supply employees supported directly or indirectly by tourism, spend their income in the local region for housing, food, transportation, and the usual array of household product and service

needs. The sales, income, and jobs that result from household spending of added wage, salary, or proprietor's income are "induced effects."

SELECTED FINDINGS

This study and the sheer volume of responses provided the Galaxy Community Council and the GSCVB with a large amount of data to analyze and review. In this section, selected findings specific to the two main purposes of this study are presented. More detailed data is available and all of the basic data findings may be found in separate documents – the Data Dictionary and the GNEAS Data Results.

Interest in Air Shows

Most of the visitors came to know about the GNEAS through a variety of communication channels. Even though the air show had limited publicity through traditional media, the Internet seemed to be a very good choice. The popularity of this medium is skewed, probably because most of the responses to the survey were collected online and access to them was gained through an online registration process. This is a limitation to this study but also a clear opportunity for events such as these to appreciate the power of web site communication, registration and most particularly follow-up review and survey of such events. Throughout this survey, it needs to be clearly communicated that the over-riding limitation of the study was that this study represents those individuals who have internet access, an interest in air shows and the ability and opportunity to seek out such events via surfing or being directed to such sites as the GNEAS on the web. However, due to the large number of responses to this survey and its overall

representation of various income groups, there is reason to believe that this study will serve as an important initial sampling of the types of individuals and households who frequent the GNEAS and air shows in general. Nevertheless, there are limitations to this study and they will be further noted in the methodology and conclusion sections.

While access and learning about the GNEAS first was via the web (37.15 percent indicated so), the highest percentage (approximately 41 percent) for overall sources of information about the show was from “other” modes. An analysis of this information provided more insights into our participants’ interests and how they actually learned about the event. Through the review of the open-ended “other” category and the logged responses, most of the visitors to the show learned about it from “their friends/family” or “word-of-mouth.” The second most popular mode in the open-ended category was through their work -- the visitors either worked at the base or someone at their workplace mentioned to them the GNEAS schedule. The “other” reasons also included: “they have been coming to the show for years,” “radio announcements,” and “publicity and news coverage.” There were other assorted related reasons. It is important to understand that the GNEAS attracts approximately 345,000 people with limited publicity and few dollars for paid advertising expenditures. Consequently, the opportunity and potential to grow the event with focused and continued marketing is substantial. However, there are other key points that need to be further reviewed that cannot be ignored including the consideration of an increased marketing effort and the potential of the GNEAS event cross promotional opportunities. Figure 1 below presents the results of how the visitors heard about the GNEAS.

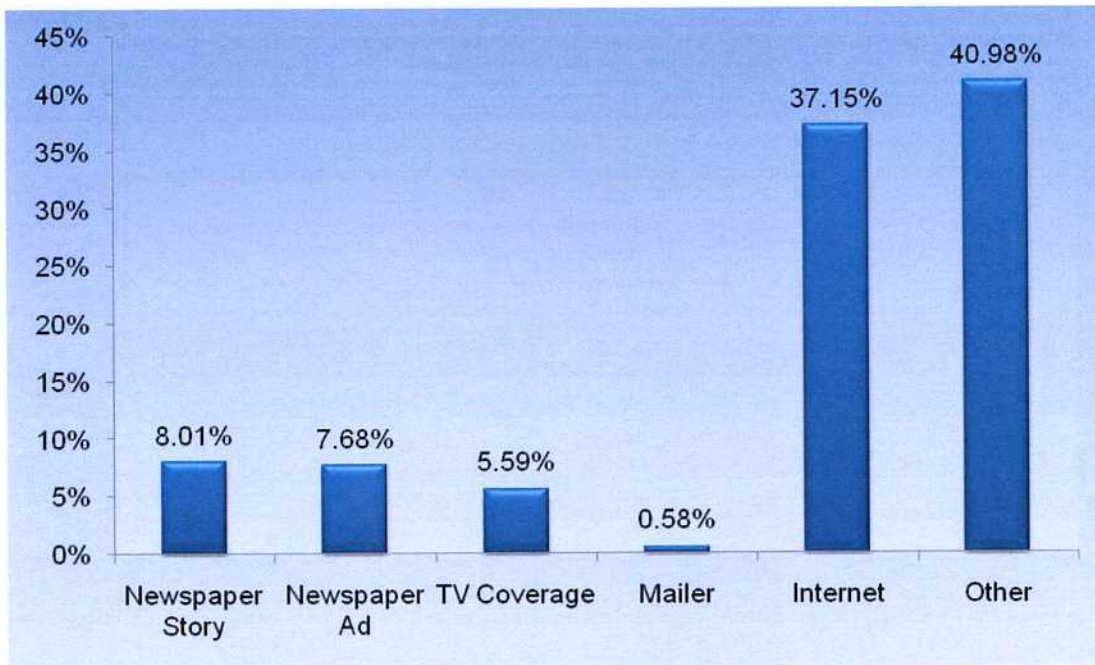


Figure 1: How did you first hear about the GNEAS?

Motivation to Visit GNEAS

The visitors to the GNEAS indicated that they were highly interested in aircrafts and it came across as one of the most important reasons for visiting the air show. Among the visitors, 57 percent stated this was the primary reason they were interested in attending the GNEAS. The second most popular reason for the visit was “entertainment for the family” as 32 percent of the visitors indicated this as their primary reason for attending the show. With high gas prices and economic slowdown during the summer of 2008, people were looking for “value” in family entertainment that was low cost and provided a significant length of entertainment time for all members of the family. The GNEAS offered free admission and it appears that the air show was one of the top choices because it was free and in close proximity to densely populated areas of New England. This form of entertainment could also be termed as ‘edutainment’ and a form of a ‘staycation’ available to large numbers of those seeking activities close to home that are both free or low cost and entertaining. The concept of ‘edutainment’ is defined as a form of

entertainment that is designed to educate as well as amuse the audiences. The air show fits well into this descriptive category. The air show aerobatic events entertain adults and kids while static displays and continuous commentaries also educate the visitors.

From the respondents in this study, it was determined that 63 percent were repeat visitors with an average of four (4) previous visits to this event. Conversely, this also indicates that the show is able to attract 37 percent as first-time visitors or new customers of the event. The two most important reasons that prompted interest in this air show were interest in aircraft (57 percent) and entertainment for family (32 percent). (See Figure 2 and Figure 3 for these results).

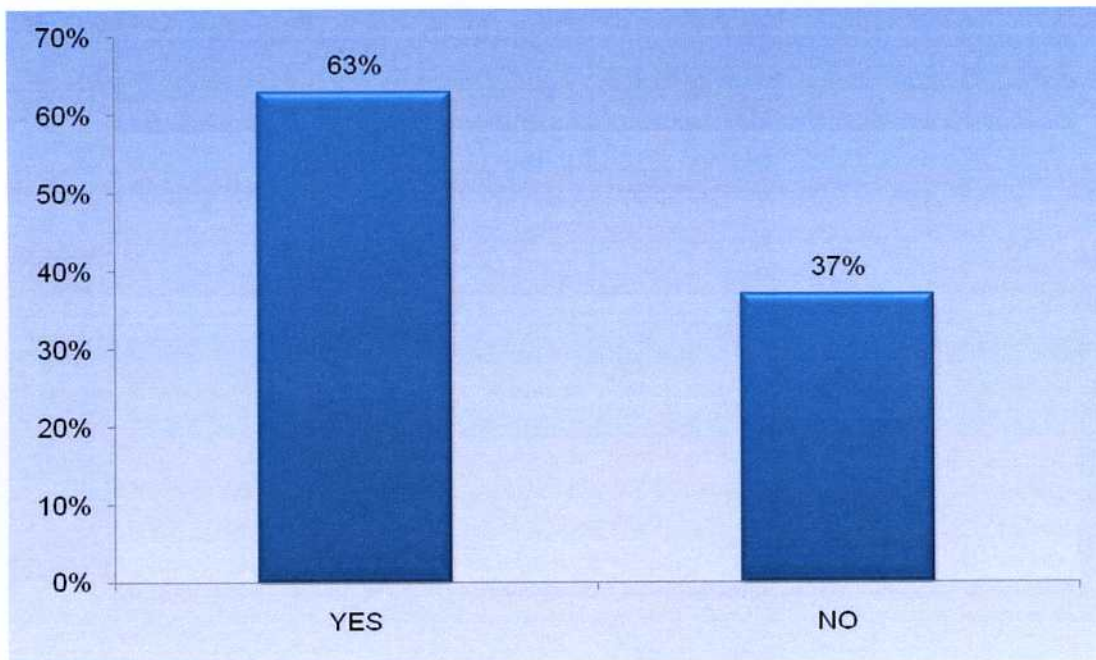


Figure 2: Repeat visitor to the GNEAS?

It appears clear that this event, the GNEAS, has a substantial number of loyal visitors who return year after year to experience the show's attractions and staged flying events and demonstrations.

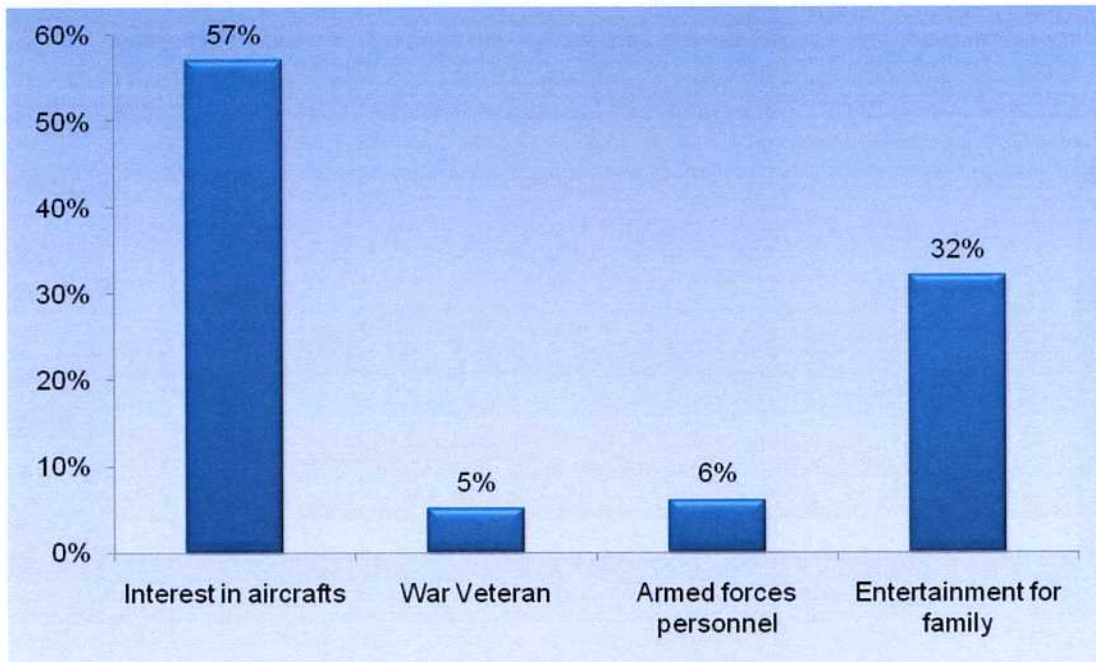


Figure 3: What prompted your interest in attending the GNEAS?

Purchase Decision Involvement

The concept of purchase decision involvement is one where marketers want to understand how psychologically involved the consumer is with the purchase decision. In some purchases, the level of involvement can be extremely high, such as purchasing a car or even taking a highly planned vacation trip while others, the purchase of impulse or routine purchase items (i.e., buying a loaf of bread or a window cleaner) are very low. Nevertheless, understanding the level of purchase decision involvement of the visitors can provide valuable insights into marketing strategies, communication messages, and even target marketing appeals. In this study, measures of purchase decision involvement as recommended by Mittal (1989) were included through three basic survey items: 1) the importance of GNEAS; 2) the interest in the subject of air shows; and 3) the frequency of thinking about air shows in general.

Because such a high percentage was repeat visitors, it was felt that it was also important to understand the various levels of interest of the primary base of customers. By utilizing the Purchase Decision Involvement Scale (Mittal, 1989) to examine the range of involvement of the customers at the show, a clearer understanding of their respective decision-making processes was revealed and the range or distribution of involvement types was also obtained. To specifically measure the audience's purchase decision involvement, three direct questions were asked in the survey on a 7-point scale:

1. "How important is the Great New England Air Show to you?"
2. "How interested are you in the subject of air shows?"
3. "How frequently do you find yourself thinking about air shows?"

A 7-point Likert scale was used for each item with 1(Not At All Important) to 7(Extremely Important) as the polar extremes for gauging the responses received for the importance item; 1 (Not At All Interested) to 7 (Extremely Interested) for the interest item; and 1 (Never) to 7 (Very Frequently) for the frequency item of thinking about air shows. The scores from each of the questions were summed and a distribution of involvement level scores was obtained that ranged from 3 to 21. This analysis shows that of the distribution of involvement types at this event, a large portion, 68 percent were highly involved in the purchase decision involvement profile of visitors with involvement scores of 15 or higher. See Figure 4 for the full distribution of involvement scores. This serves to explain that the visitors to the show are both highly involved in air shows, and also explains why they are likely to return every year.

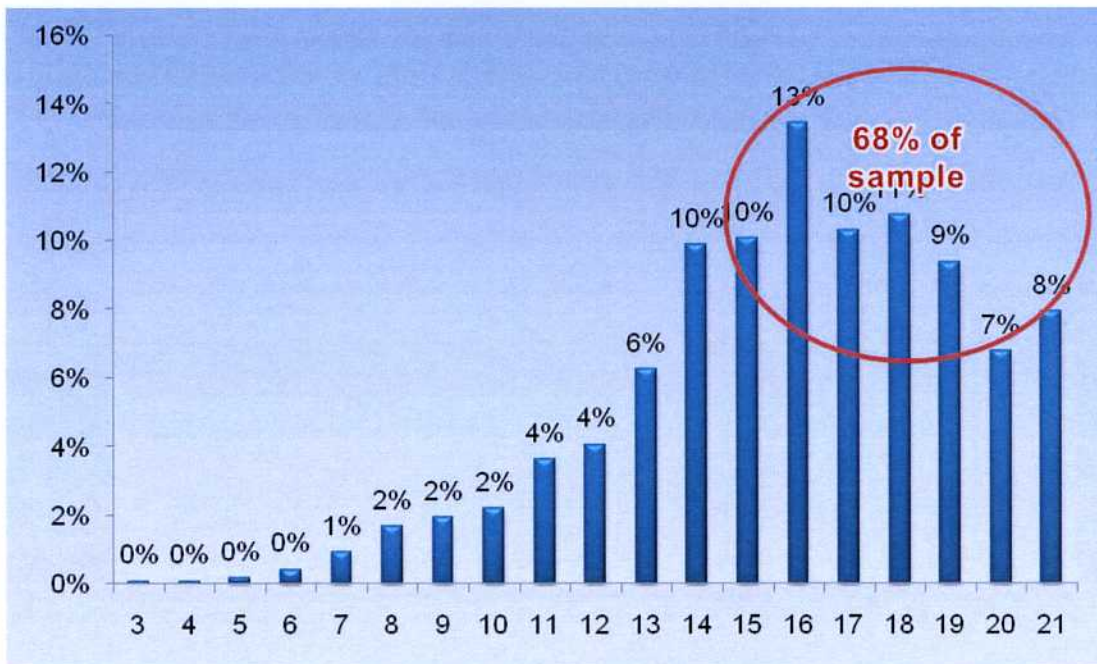


Figure 4: Distribution of Purchase Decision Involvement Scale Scores.

Further analyses of the data collected in these questions were performed using Crosstabs as a tool to compare the importance versus interest in air shows, as rated by the respondents. People who rated the show as important also were interested in the subject of air shows (Figure 5). This further proves the high level of involvement that was presented in Figure 4. The people who came to the show were highly interested, involved and considered the show to be very important.

		How interested are you in the subject of air shows?							Total
		Not at all interested ¹	2	3	Somewhat interested ⁴	5	6	Extremely interested ⁷	
How important is the Great New England Air Show to you?	Not at all important ¹	1 12.5%	1 12.5%	0 0%	3 37.5%	2 25%	1 12.5%	0 0%	8 100%
	2	1 7.14%	3 21.43%	2 14.29%	3 21.43%	3 21.43%	0 0%	2 14.29%	14 100%
	3	0 0%	2 3.64%	20 36.36%	12 21.82%	12 21.82%	9 16.36%	0 0%	55 100%
	Somewhat important ⁴	0 0%	0 0%	3 1.78%	63 37.28%	46 27.22%	30 17.75%	27 15.98%	169 100%
	5	0 0%	1 0.37%	1 0.37%	15 5.6%	141 52.61%	79 29.48%	31 11.57%	268 100%
	6	0 0%	0 0%	0 0%	15 4.32%	23 6.63%	199 57.35%	110 31.7%	347 100%
	Extremely important ⁷	0 0%	0 0%	0 0%	2 0.62%	9 2.79%	35 10.84%	277 85.76%	323 100%
	Total	2 0.17%	7 0.59%	26 2.2%	113 9.54%	236 19.93%	353 29.81%	447 37.75%	1000 100%

Figure 5: Importance of GNEAS vs. Interest in Subject of Air Shows.

Travel Behavior

Due to the inclement weather on Saturday of this event, many people decided to stay home and did not come to the show. This resulted in a low count on Saturday, but Sunday was bustling with people. The following is a representation of the days participants indicated that they attended the show (See Figure 6). Of all the visitors, only 11 percent attended the show both days. Even though the attendance was reduced on Saturday, the show had an estimated total attendance of 345,000 visitors over the two-day period.

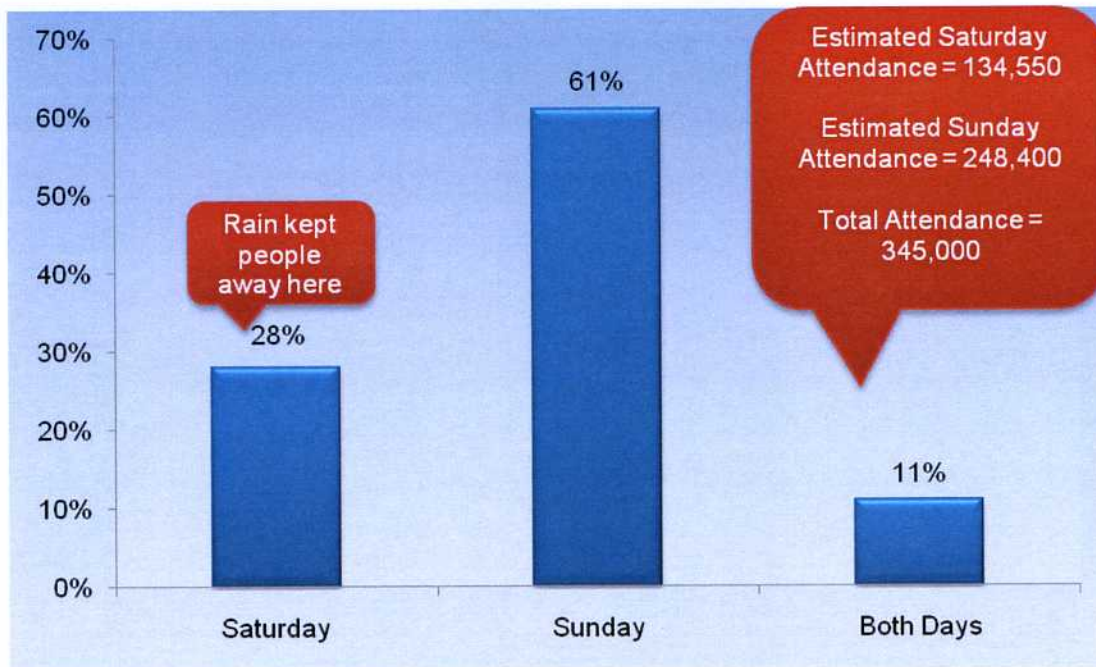


Figure 6: Which days did you attend the show?

The average time spent by visitors at the show was 5.58 hours (See Figure 7). The elaborate exhibition of aircrafts and the program of activities (i.e., flight demonstrations, etc.) led the audiences to stay at the show for this substantial period of time. This further reinforces how interested the participants were and remained on the grounds of Westover for the extended periods of time.

Furthermore, when the participants were asked if they would have come to the Pioneer Valley at this time of the year even if there was no air show, 60 percent of the respondents said “No.” Out of the 40 percent who indicated that they would have come anyway, 77 percent said that they would have stayed for the same length of time; 15 percent said they would have stayed longer and only 8 percent indicated that they would have taken a shorter visit or stay.

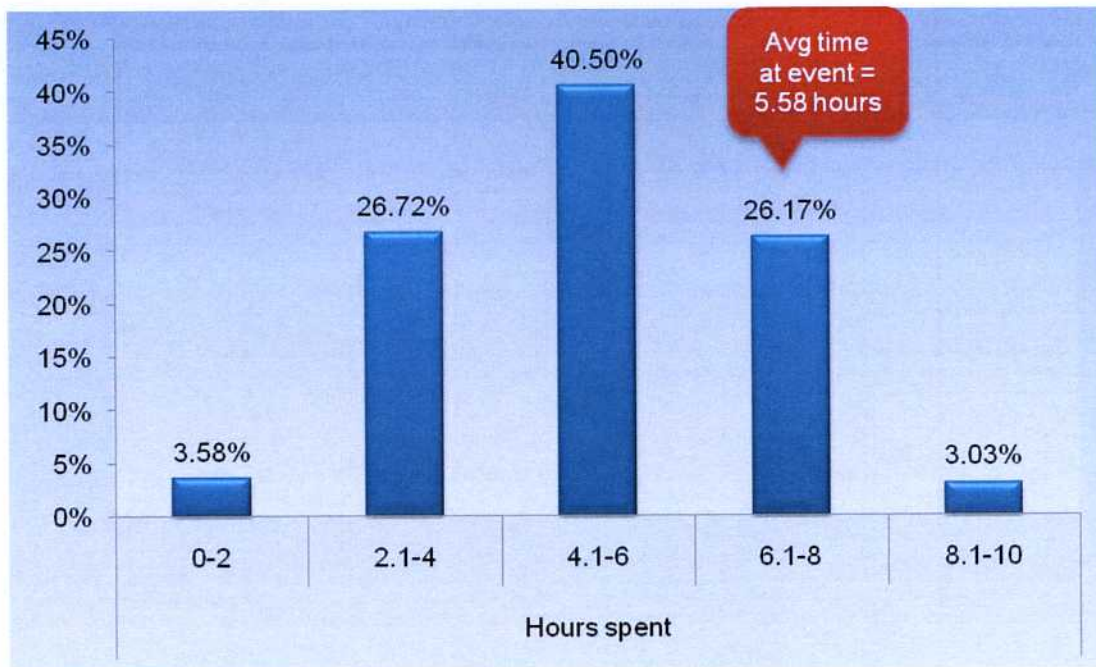


Figure 7: Hours spent at the GNEAS per day.

Travel Details

The average size of a group of visitors attending the event included 2.47 adults and 1.30 children. An overall average size of the typical group attending the show was 3.77, or approximately four (4) individuals. The average distance traveled one-way by the visitors to the show was 45.14 miles (measured by straight line distances between noted the zip code of the event and the zip code of the primary residence of the participant). After the collection of zip codes for the primary residence of our survey subjects, a Microsoft™ Excel file was created for all the zip codes and attached to a visual representation on Google Earth™. The zip code of the venue (Westover Air Base) is 01022 and distances of the primary residence of the survey participants were measured in a straightline distance from this zip code. Below is a tabular representation of the distances traveled by visitors (Please see Figure 8). Of all the respondents, 77 percent traveled less than 65 miles and almost every visitor in the sample traveled less than

200 miles. From this representative sample size, it was estimated that the average distance traveled by the visitors to the GNEAS was 45.14 miles.

Range from 01022 (in miles)	Frequency	Cumulative %
0 - 64.94	865	77.23
0 - 129.88	225	97.32
0 - 194.82	18	98.93
195 +	12	100
Average Distance Traveled	n= 1,120	45.14 miles

Figure 8: Distances traveled to GNEAS.

Note: n=1,120 includes 14 subjects with partially completed survey data.

Nearly every region in the country has its own air show held on an annual or semi-annual basis. The GNEAS competes with two other air shows in the New England Region – one held in Maine and the other in Rhode Island. Thus, the GNEAS is likely limited to attract visitors who are close to the venue site, Westover Air Reserve Base in Chicopee, MA or who are from the regional market nearby. It is also less likely to draw from Maine or Rhode Island regions. Utilizing Google Earth™ the trade market area of the dispersion of the visitors to this event was created. The first map below (please see Graphic 1) is a view of the whole region with the GNEAS venue marked with a yellow board pin. The white points represent the primary residence zip codes as provided by participants. The map represents the states of Massachusetts; New York; Connecticut; Rhode Island; the southern portions of Vermont, New Hampshire and Maine; and portion of northeast Pennsylvania and northern New Jersey. Since this is a two-

dimensional map it depicts only zip codes that had representation at the GNEAS and not the intensity of visitation from these areas. A three-dimensional view of the intensity of visitation would have provided a more detailed representation, but this does provide a graphic representation of the dispersion or market area draw of the event. The visual analysis here shows that the majority of the residential areas of the visitors came from East and South of 01022 (venue zip code). Only a few visitors traveled from Vermont and almost none from Maine. Access to the event by the market area analysis also depicts the impact of visitors from areas served by interstate highways and higher population density.

Attendees at the show were classified in the survey as “resident” or “visitors.” Survey takers were requested to put in their primary residence zip code or put ‘N/A’ if they resided in the area. Of all respondents to this survey 39 percent people were residents of the area and thus did not travel far to get to the show while 61 percent of the attendees were visitors. However, only 11 percent of the visitors actually had an overnight stay in the area. This was largely a day trip event for the majority of the attendees. It was estimated that only 22,743 attendees actually stayed overnight in the region as a result of the GNEAS event.

An estimated calculation of the people who stayed overnight is shown below:

Total Overnight Stays: 60.87% (Visitors) x 345,000 (Population at the show) x 10.83% (Overnight stay percentage) = 22,743 people

Though the above figure provides an estimate of those who spent at least one night in the valley, a limitation of the study was that we were not able to further investigate and conclude with total certainty the number of people who actually spent night(s) at a commercial lodging facility. The

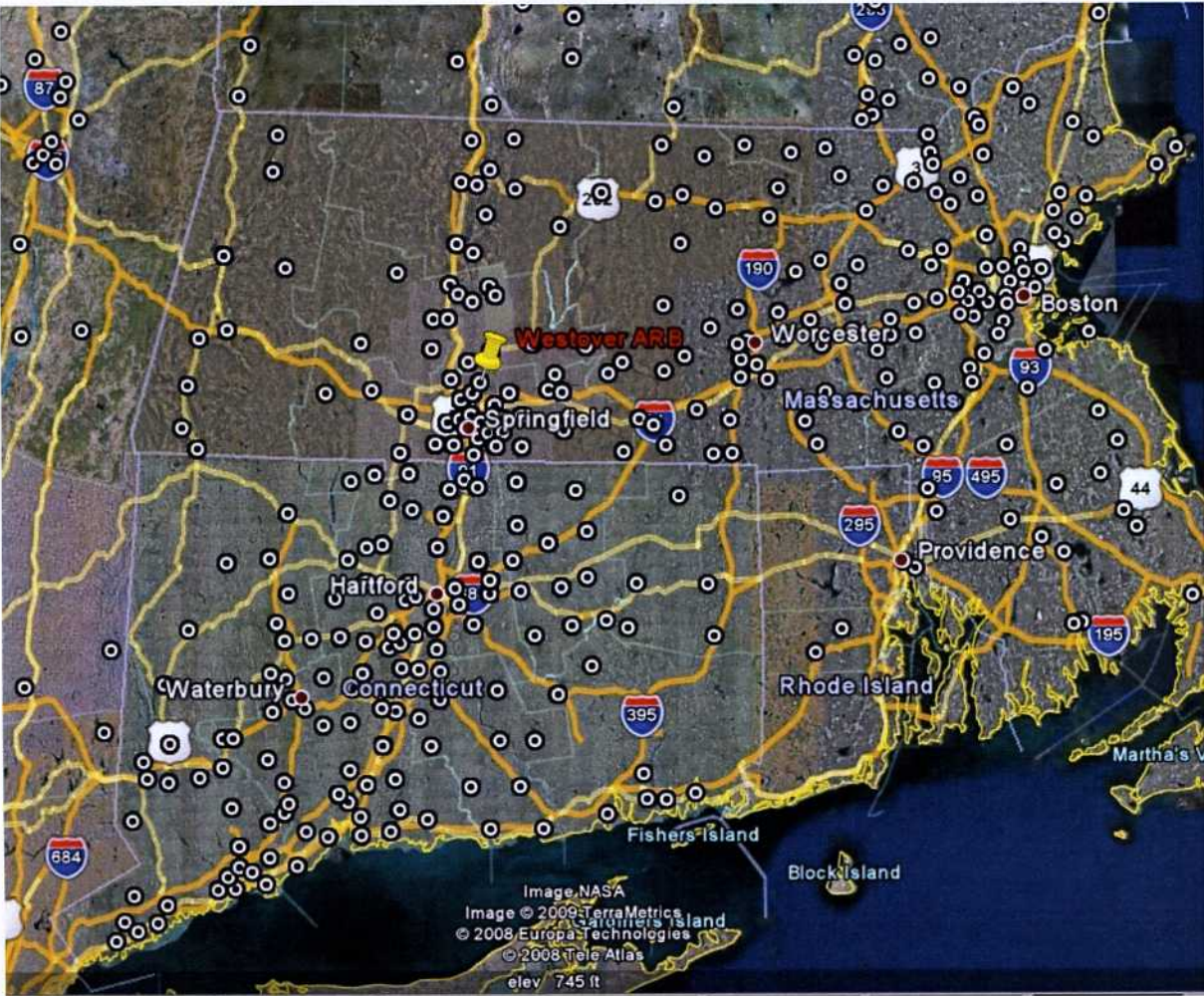
lodging of the overnight visitors could have been at a hotel/motel, campground or with friends or families.

Some of the key conclusions of the findings from this portion of the travel behavior related to GNEAS analysis of the study were:

- The GNEAS is a day trip for most of the visitors (with 45.15 miles of mean distance traveled one-way).
- Mapping of zip codes provided an examination of the event's trade market area reach, thus providing valuable information for improved marketing and communication of future efforts. The dispersion of the residential zip codes of the visitors indicates substantial draws from a market area South and East of the Westover Air Reserve Base, site of the GNEAS.
- A small portion, 11 percent of the visitors, stayed overnight in the region when attending the GNEAS and a large portion 89 percent only visited the event for one day. Potential exists to further enhance the length of stay with special promotional efforts.
- This information also provides a means for evaluating the effectiveness of marketing efforts by Greater Springfield Convention & Visitors' Bureau and The Galaxy Community Council who play important roles in organizing the event and other popular valley events in this region.
- A closer look at the event trade market area by zip codes (see Graphic 2) shows a pattern of the primary visitors being from densely populated places like Boston, Springfield and Hartford. These areas may serve as potentially strong markets for promotional efforts.



Graphic 1: Primary market areas



Graphic 2: A closer look at the market areas

Economic Impact Analysis --Visitor Spending and Value to the Economy

The primary objective of this project was to understand and gauge the economic impact of the air show on the area, so it was critical to understand the spending behavior of the event's participants. From the analysis of expenditure categories, the average spending per group was \$98. Expenditures were divided into the following main categories as suggested by economic impact researchers (Stynes, 1998; Stevens, 2008 and Bojanic, 2008): 1) refreshments; 2) food/drinks before or after the event; 3) souvenirs and or gifts; 4) clothing or accessories; 5) transportation costs; 6) local attractions; 7) overnight accommodations; and 8) "other"

expenditures. The largest overall average category expense was transportation (\$24.47 average per group) followed by refreshments at the event (\$20.53 average per group); and then food/drinks before and after the event (\$17.51 average per group). The lowest expenditure category was local attractions (\$2.10 average per group). (Please see Figure 9 for the details on average expenditures per group).

Category	Amount – Avg./Group
Refreshments	\$20.53
Food/drinks before or after the event	\$17.51
Souvenirs or gifts	\$14.80
Clothing or accessories	\$3.93
Transportation	\$24.47
Local attractions	\$2.10
Overnight accommodations	\$12.26
<u>Other</u>	<u>\$2.40</u>
<i>Total</i>	<i>\$98.00</i>

Figure 9: Average Expenditures by Category per Group for GNEAS.

Additional insights or conclusions may be reached by examining these expenditures through the other data collected here. The highest average expense category for the visitors was transportation (\$24.47 per group). The average one-way distance traveled by visitors was approximately 45 miles, so an explanation for high transportation expense can be the high gas prices during the summer when the event was organized. Average group size of visitors at the

event was about four (4) and they spent on average about 5-6 hours at the event. Spending an average of six hours in the heat led to high expenditures in the refreshments category with an average expenditure of \$20.53 per group. Due to the length of the event, most of the groups probably had breakfast or dinner on their way to the show or on their way home from the event, thus spending an average of \$17.51 on food/drinks either before or after or during both timeframes of the event. Spending on overnight accommodations was one of the lowest at \$12.26 per group. As mentioned earlier, a probable cause for this could be that a portion of the 11 percent of the visitors who stayed overnight may have stayed with friends or relatives in the area. Below is a graphic representation of the percentages of the \$98 spent by an average group visiting the show (Please see Figure 10). Summing the appropriate on-site expenditure categories, an average visitor spent an estimated \$25.99 at the show or on the show grounds.

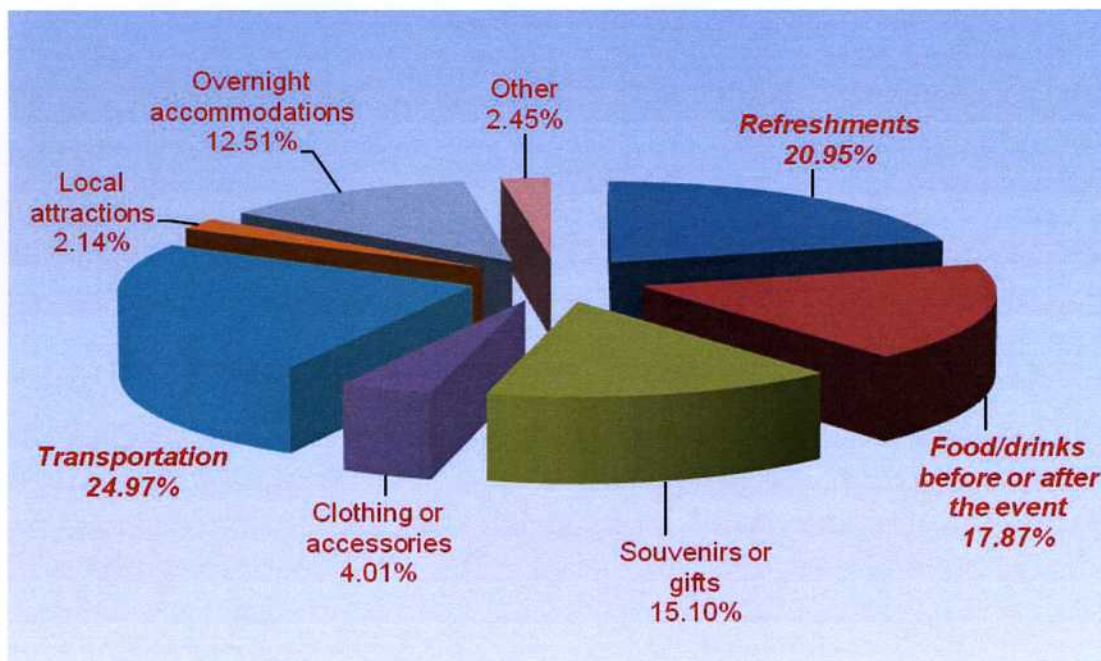


Figure 10: Average group spending by percentages for GNEAS.

Assuming that all the visitors who stayed overnight rented a room at a commercial lodging facility, the dollars generated for overnight accommodations are:

Lodging Dollars: $345,000$ (*Total population at the show*) \times $(\$12.26/3.77)$ (*Average spending on lodging per person*) = **\$1,121,936**

Direct Economic Impact. As mentioned earlier, the direct impacts are the effects resulting from the initial spending by visitors while interacting directly with the businesses. In this study, this involves the average expenditures per person made specifically for this trip. Therefore, the dollars spent are:

Direct Impact: $345,000$ (*Total population at the show*) \times $(\$98/3.77)$ (*Average spending per person*) = **\$8,968,169**

A more detailed impact by each spending category is show below (Figure 11).

Category	Direct Impact
Refreshments	$345,000 \times (\$20.53/3.77) = \$1,878,740$
Food/drinks before or after the event	$345,000 \times (\$17.51/3.77) = \$1,602,374$
Souvenirs or gifts	$345,000 \times (\$14.80/3.77) = \$1,354,377$
Clothing or accessories	$345,000 \times (\$3.93/3.77) = \$359,641$
Transportation	$345,000 \times (\$24.47/3.77) = \$2,239,297$
Local attractions	$345,000 \times (\$2.10/3.77) = \$192,175$
Overnight accommodations	$345,000 \times (\$12.26/3.77) = \$1,121,936$
<u>Other</u>	$345,000 \times (\$2.40/3.77) = \$219,628$
<i>Total</i>	$345,000 \times (\$98.00/3.77) = \$8,968,169$

Figure 11: Direct Economic Impact by Category.

If we take into account that of these 345,000 attendees at the show, only 60.87% were visitors, we can calculate the direct economic impact without local population as:

Direct Impact (Excluding local population): $210,002$ (*Total visitors at the show*) \times $(\$98/3.77)$
(*Average spending per person*) = $\$5,457,952$

Direct, Indirect and Induced Economic Impact – The Multiplier Effect. During the course of this study, various government websites for an economic multiplier for the state and for the Pioneer Valley in specific were reviewed. However, the initial review of literature search returned no results for tourism based events such as the GNEAS. Further efforts to secure a valid multiplier for the Valley led to establishing contact with Massachusetts Office of Travel and Tourism. The department officials suggested **1.5** as an economic multiplier for the area to reach an overall economic impact figure (Dagostino, 2009). Based on the above numbers the overall economic impact including direct, indirect and induced effects, can be calculated as:

Overall Economic Impact: $345,000$ (*estimated attendance at the GNEAS*) \times $(\$98/3.77)$
(*Average spending per visitor*) \times 1.5 = $\$13,452,255$

These numbers are based on the estimated attendance derived by the Westover Air Reserve Base staff during the two-day event and the measures derived and extrapolated to the entire audience. While this is an estimate, it is believed to be a very conservative look at the dollars generated through the show. Not polled in this service were show vendors and air show participants. Nevertheless, an approximate estimate of nearly \$13.5 million impacted the local economy as a result of the GNEAS. Though this number is only an approximate estimate, it does provide the first baseline measure upon which future air shows and other large-scale events can be measured.

Similar to our calculation for the direct economic impact, overall economic impact excluding the locals can be calculated as:

Overall Economic Impact (Excluding local population): 210,002 (Total visitors at the show)
x (\$98/3.77) (Average spending per visitor) x 1.5 = \$8,188,255

However, this kind of event can't easily be substituted by any other sources of entertainment. Therefore, spending of dollar amounts by locals also was taken into account to calculate the direct and overall economic impact.

These measures also provide an idea of the air show's value to the local economy and an analysis of the reach and draw of such events.

Observations and other findings noted in the course of this study:

- There was very low percentage of visitors who stayed overnight resulting in;
- Low hotel usage in the area, this in turn affected the dollars generated through room sales and thus a lower economic impact.
- The overall earnings in the area and within the businesses in the immediate and adjacent areas to the event may not have realized as much economic benefit as an event that generates longer lengths of stays or overnight visitation.
- Open-ended responses regarding satisfaction with the event also clearly noted the difficulties encountered with traffic, parking and access to the event frustrated visitors. Overcoming these problems may well lead to ways to improve and realize more positive economic impacts in the local and surrounding regions.

- Due to the nature of the event and the large portion of day-trip visits, there is likely a substantial “leakage” in the true economic impact for the region. For example: Visitors may pack a lunch, bring a cooler with refreshments, and gas up the family vehicle at home, travel to and from the event and spend little actual money on the grounds of the GNEAS or in the surrounding communities/region.
- The air show also seems to be a good source for family entertainment. This market segment should and may become an important target market focus for future event revenues.
- Potential appears to exist with this event, other events and attractions in the local area and region, to cross promote and develop more packages for extended stays or multiple venue visits while at this event or the possibility of setting the stage for return visits to other local attractions.

Visitor Profile

Attendees to the air show were classified as either ‘visitor’ or ‘resident’ based on their primary residence zip codes.

Public events like air shows bring in dollars that would have been spent elsewhere. Estimating the number of visitors as opposed to residents thus becomes vital as these visitors contribute to the real economic impact with their external monies spent here.

A “resident,” as defined by our survey tool, is a person or a member of a family group who resides in the area. The survey guided visitors to list their zip codes, and they were instructed to select ‘N/A’ if they were from the area. All of the other respondents who entered their actual zip

codes were classified as “visitors.” To better understand the background of the visitors, a series of specific questions were asked to help us create a profile of these attendees.

Gender. Analyzing the data on visitors by gender demonstrates that the air show attracts significantly more men than women (Please see Figure 12). The sample survey population was 68 percent male and 32 percent female.

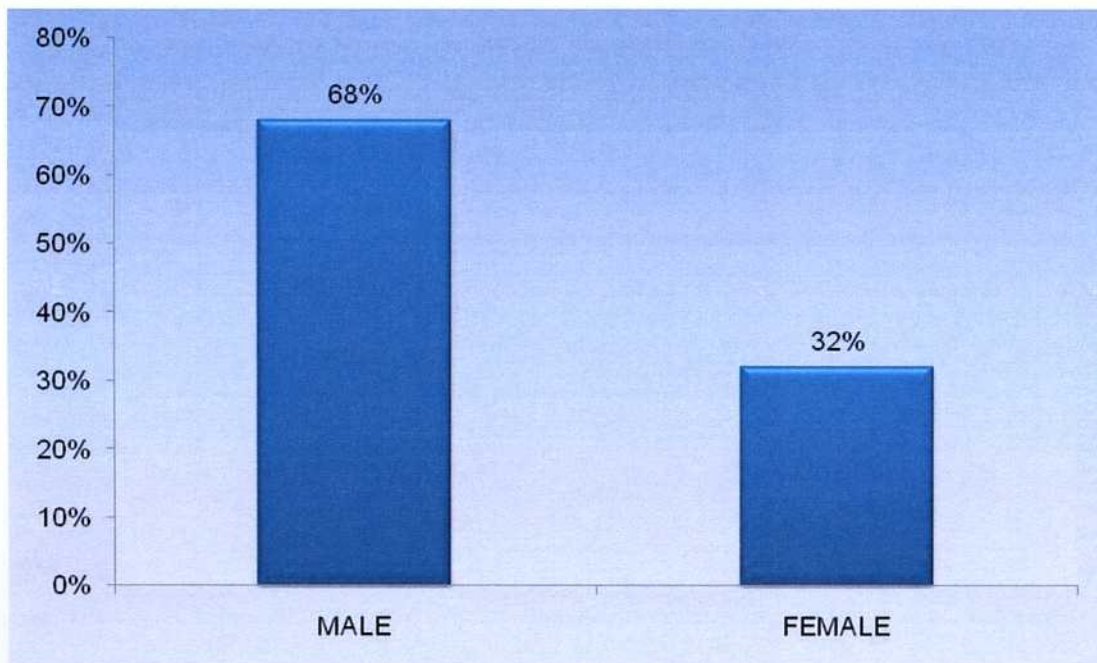


Figure 12: Visitors to GNEAS by gender.

A further comparison of interest by gender is shown below (Figure 13). Men were significantly more interested in air shows than women – 43 percent of men were extremely interested in air shows, as opposed to 27 percent of women.

		How interested are you in the subject of air shows?							Total
		Not at all Interested ¹	2	3	Somewhat Interested ⁴	5	6	Extremely Interested ⁷	
What is your gender?	MALE	2 0.26%	0 0%	11 1.45%	42 5.54%	143 18.87%	229 30.21%	331 43.67%	758 100%
	FEMALE	0 0%	6 1.64%	15 4.1%	57 15.57%	75 20.49%	114 31.15%	99 27.05%	366 100%
	Total	2 0.17%	7 0.59%	26 2.2%	113 9.54%	236 19.93%	353 29.81%	447 37.75%	100%

Figure 13: Interest in air shows by gender.

Age and Date of Birth. The participants were asked to indicate their year of birth to identify average age of the visitors responding to the survey. An interesting element of this analysis is the distribution in attendance percentage of the various age groups. Especially noteworthy was the difference in the distribution of visitors in 25-36 year old age group as compared to 37-48 year olds age group (Figure 14). This likely explains that there were more young-to-middle aged families attending this event as opposed to young adults who may or may not be married and who may not have yet started a family. These differences may also be due to a lack of appropriate marketing mediums to reach these younger age groups or even a lack of interest by these types of potential visitors.

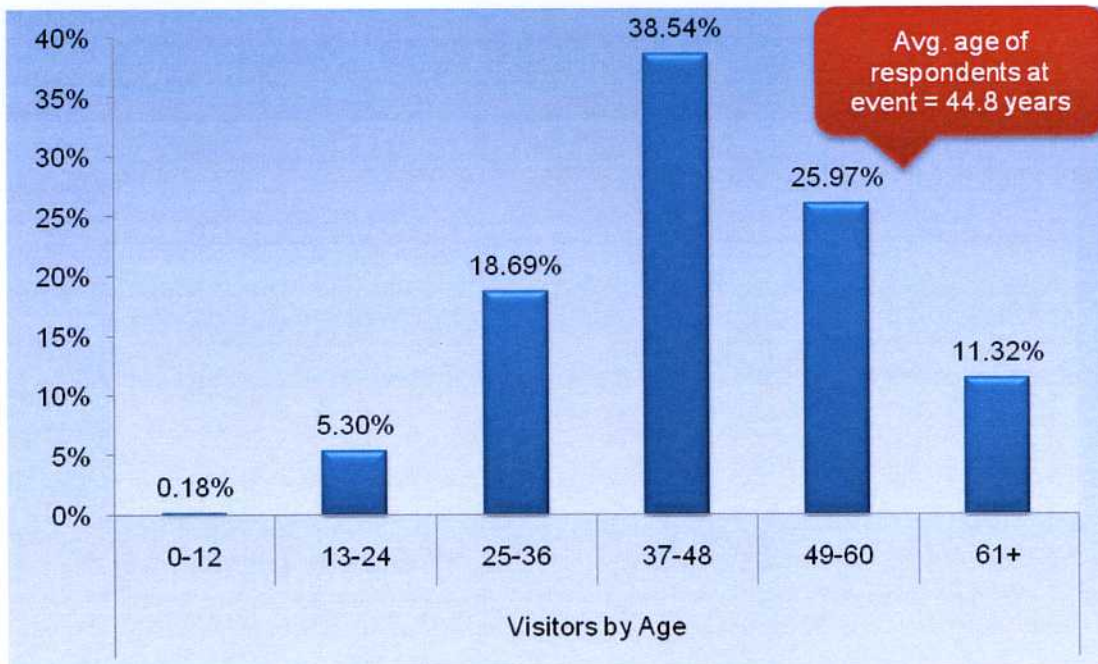


Figure 14: Distribution of respondents to GNEAS by age.

For a concluding profile of the typical visitor to this event would be that the average age of the visitor is 44.8 years old, predominantly male who attended with a small group of 3-4 people including about two children. Moreover, they are highly interested and involved in the subject of air shows. The significant portion of the visitors are repeat customers who have generally attended the air show about 4 times in the past and travel an average of 45 miles one-way to get to see and experience the show.

Further analysis of the respondents shown below (see Figures 15 and 16) reveals slightly above average level of education (48 percent hold a college degree or post graduate degree). There was also a broad distribution of income levels in the survey sample.

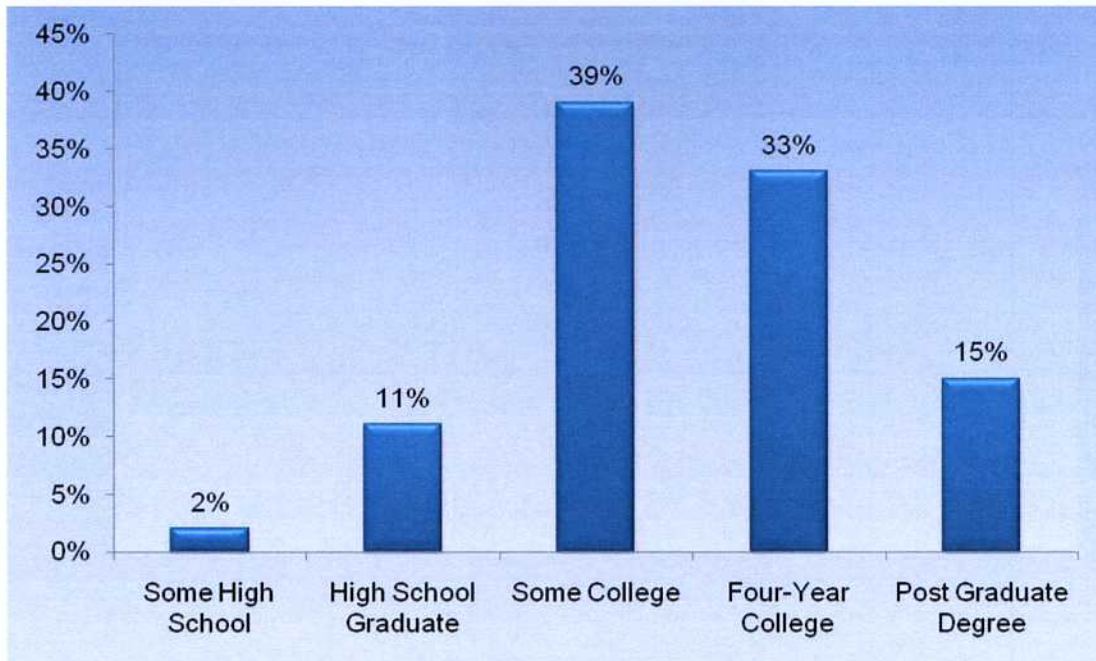


Figure 15: Distribution of participants by highest level of education attained.

Annual household income analysis of our visitors shows that 51 percent of the attendees earn less than \$75,000 a year, and 72 percent less than \$100,000 gross income before taxes.

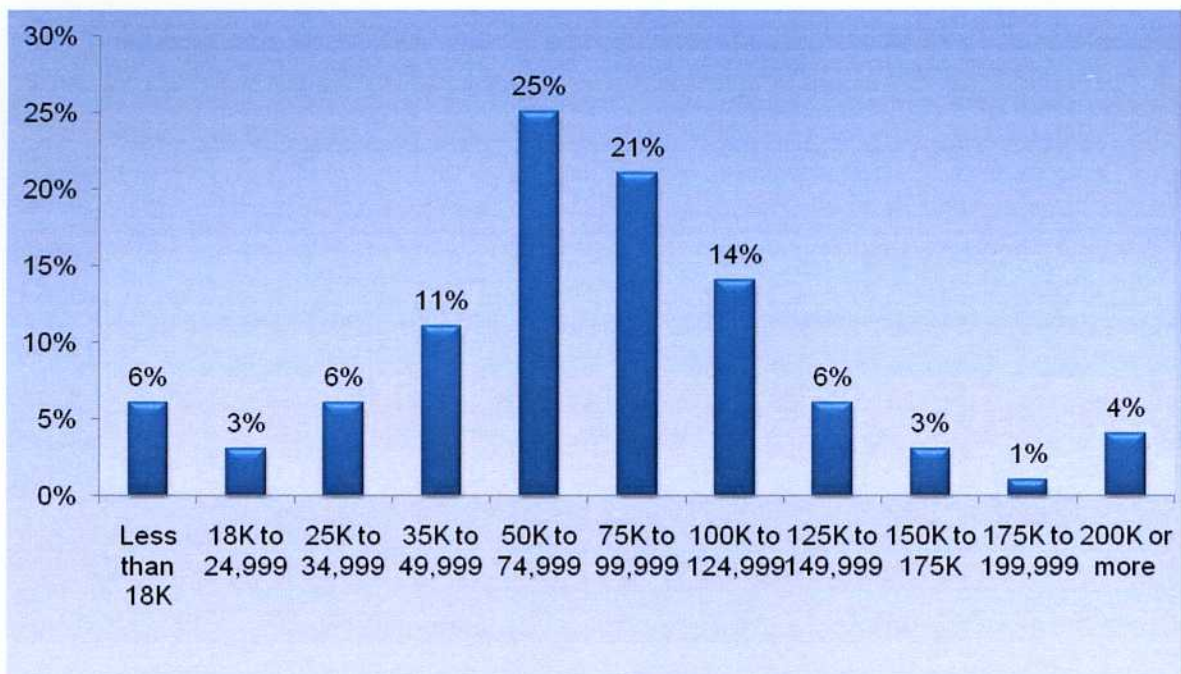


Figure 16: Approximate annual gross household income (before taxes) of participants.

Visitor Comments – Qualitative Analysis

The analysis here also showed that approximately 25 percent of the first-time visitors were not likely to return to the event. Therefore, it was necessary to try and determine the negative issues that might affect the return potential of these types of visitors. Some of the reasons for this statistic emerged and are discussed in this following section. Open-ended responses to various survey items helped to provide an added dimension of qualitative analysis to this study.

As an integral part of the study, the qualitative aspects were analyzed from the comments and feedback received from the survey participants about their overall satisfaction with the event. To gauge the satisfaction of the GNEAS, the visitors were asked to rate their satisfaction with the event on a 7-point Likert scale of 1 (*Very Dissatisfied*) to 7 (*Very Satisfied*). Overall, visitors seemed to be satisfied to very-satisfied with the show with an overall mean rating of 5.95 (Figure 17). In addition, open-ended comments about their satisfaction ratings were solicited.

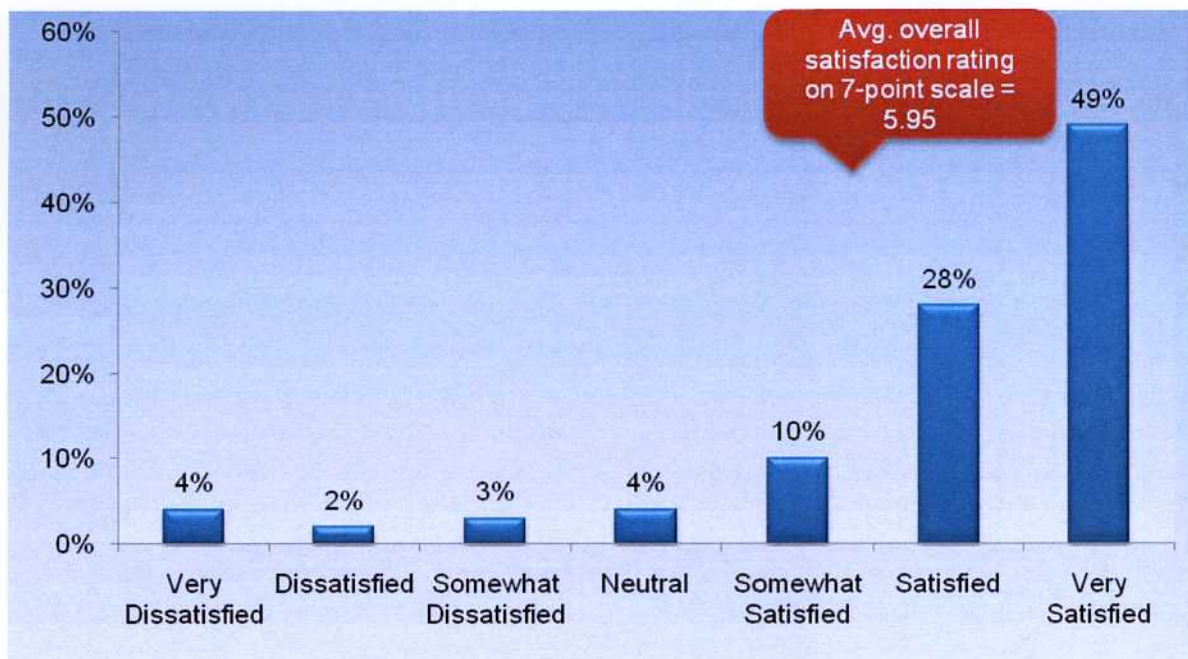


Figure 17: Overall satisfaction with GNEAS 2008.

To further express their satisfaction level, the participants had two separate opportunities to share feedback about the GNEAS 2008, in general or through specific comments. These two separate sections ensured that participants could state their opinion in the satisfaction area question specifically; but, they could also express their opinions in general at the end of the survey. The two prompts for comments were:

1. "Is there anything you would like to share about your overall satisfaction or dissatisfaction with Great New England Air Show 2008? If so, please comment below:"
2. "Is there anything else you would like to share with us about the Great New England Air Show in general or specifically? If so, please use the space below to do so:"

A detailed analysis utilizing a text mining software program called CATPAC™ provided the opportunity to create dendograms. The matrix presented by this software is a square proximity or similarities matrix whose rows and columns are the words identified by CATPAC™ and whose entries represent the similarity or degree of association between pairs of words. A dendogram describes relationships between the most commonly occurring concepts in a given set of text (a clustering effect). Different methods are used to cluster words together. Ward's method, the one used here represents clusters by their central point. This is a good approach to understand smaller concept groupings. Below are snapshots of dendogram graphs (please see Figure 18 and 19). As words are "grouped" in the dendograms they may be further reviewed for classification as positive or negative.

(4) previous visits to the show. Because of this they were also able to spot that some of the “aircraft” were missing or that they needed more “planes” displayed.

Return Visit Potential to GNEAS.

Though many people were dissatisfied with the parking and other issues in their respective comments; the findings of this study indicated that the visitors were determined to come back “next year” for the show as shown in the crosstab below (Please see Figure 20). Almost 85 percent of the respondents indicated that they would be back by indicating a rating of 5 or higher on the 7-point scale. Only 3.7 percent of the attendees indicated that they would not return.

		How are likely are you to return in the next 2 years?							Total
		Definitely Would NOT Return1	2	3	Might OR Might Not Return4	5	6	Definitely Would Return7	
Finally, please rate your satisfaction level with the Great New England Air...	Very Dissatisfied	11 25%	4 9.09%	0 0%	13 29.55%	3 6.82%	2 4.55%	11 25%	44 100%
	Dissatisfied	0 0%	5 19.23%	1 3.85%	3 11.54%	4 15.38%	2 7.69%	11 42.31%	26 100%
	Somewhat Dissatisfied	0 0%	1 3.45%	4 13.79%	8 27.59%	4 13.79%	5 17.24%	7 24.14%	29 100%
	Neutral	1 2.44%	1 2.44%	0 0%	9 21.95%	5 12.2%	11 26.83%	14 34.15%	41 100%
	Somewhat Satisfied	1 0.86%	0 0%	2 1.72%	18 15.52%	19 16.38%	20 17.24%	55 47.41%	116 100%
	Satisfied	0 0%	1 0.31%	6 1.89%	35 11.01%	43 13.52%	75 23.58%	156 49.06%	318 100%
	Very Satisfied	1 0.18%	2 0.36%	1 0.18%	43 7.8%	36 6.53%	84 15.25%	383 69.51%	551 100%
Total	14 1.25%	14 1.25%	14 1.25%	129 11.51%	114 10.17%	199 17.75%	637 56.82%	1000 100%	

Figure 20: Satisfaction vs. Likely to return Crosstab.

However, a comparison between first-time visitors (17.3 percent of all participants) and repeat visitors (82.7 percent of all participants) revealed that approximately 25 percent of the first-time visitors were unlikely to return (by indicating a rating of 4 or less on the 7-point scale on the likelihood to return item) to the GNEAS in the next two years, as shown below (Please see Figure 21).

		How are likely are you to return in the next 2 years?							Total
		Definitely Would NOT Return1	2	3	Might OR Might Not Return4	5	6	Definitely Would Return7	
Have you ever been to the Pioneer Valley before?	YES	8 0.85%	9 0.96%	9 0.96%	92 9.81%	86 9.17%	164 17.48%	558 59.49%	938 100%
	NO	6 3.06%	5 2.55%	5 2.55%	37 18.88%	28 14.29%	35 17.86%	79 40.31%	196 100%
	Total	14 1.25%	14 1.25%	14 1.25%	129 11.51%	114 10.17%	199 17.75%	637 56.82%	100%

Figure 21: Been here before vs. Likely to return

While the number of first-time visitors is a small portion of this event and the loss of 25 percent does affect the opportunity to grow the event and to reach new segments of regional markets in the area. It also affects the additional growth of visitors as negative word-of-mouth spreads about the troubling aspects of traffic, parking, and access to the event. Fortunately, the majorities of the negative aspects of the GNEAS are logistical and are not directly a part of the actual show activities. Though the negative experience does affect visitors' overall satisfaction, careful logistical and strategic planning may help to mitigate these problems in the future.

Looking Ahead

The overall perspective of the visitors' experience and potential to return to the GNEAS is highly positive. In fact, most of the attendees (77 percent) were satisfied or very satisfied with the show and 85 percent are likely to come back. This study served as a baseline or set of benchmarks for future studies and also introduces the opportunity for continuous improvement in the air show. Continuation of an event assessment, including an on-going economic impact and market analysis and the development of a continuous improvement strategy will help to attract more visitors to the air show, make the air show more profitable and will increase the economic impact to the area, thus increasing the overall positive aspects of the event while seeking to reduce some of the negative consequences.

Limitations

There were many challenges faced through the course of this study that restricted or limited the robustness of the findings of this report. It is important to mention these limitations prior to the discussion of recommendations for future improvement.

As a team of two graduate students from the University of Massachusetts Hospitality and Tourism Management Department who were engaged to complete this project according to course requirements, there were challenges to overcome compounded by a very limited time period to complete this study. According to the researchers in this field (Stynes 1997, and Stevens 2008), a typical economic impact study takes six to twelve months to be complete. This not only means more time, but also a larger budget. This study was completed within short time period and strict budget constraints. There were very limited resources to work with in

completing the study in a highly comprehensive manner. These limitations largely affected the data collection process and the comprehensiveness of measuring feedback from a broader segment of participants. Initial data collection was to conduct intercept interviews during the show at pre-determined locations and times. Surveys were to be collected through a team of volunteers trained to assist in data collection process and appropriate intercept techniques. However, due to a lack of available volunteers, the on-site data collection process was greatly compromised.

Due to the limited resources, there was poor visibility at the venue for the data collection site. From the image pictured below (Please see Graphic 3), the data collection booth was located out of reach of the event's main activities in front of Hangar 5 and away from all the other vendors' booths. In other words, "The booth was away from where all the action was!" To add to challenges of data collection, the signs on the booth were too small to be noticed from far away. After one day of attempted intercept interviews, it was quickly realized that only a few people actually walked near the booth for intercept interviews. Hereafter, an effort was made to float around the area and hand out surveys and to conduct modified intercepts. However, the interviewers also questioned the legitimacy of the effort because the volunteer interviews were not in event management uniforms. Moreover, people were more interested in experiencing the show than completing a survey even though incentives were offered. Thus, the interception data collection process created numerous obstacles that needed to be overcome and this is clearly a limitation to this study. Multiple access points and the sheer volume of visitors made this type of data collection unrealistic both within the budget and staffing constraints. Unless the event is heavily staffed with volunteers and more appropriate sampling techniques are applied, on-site intercepts are not likely to yield high response rates.



Graphic 3: GSCVB booth at GNEAS 2008

As noted earlier in the study, there was a very varied demographic at the show and some of them remained under-represented in this sample. Nearly all surveys were filled out online, thus select groups or segments of visitors were not provided an equal chance of completing the survey. Consequently, older individuals and lower income groups who might not have access to the Internet and/or email accounts were likely under-represented in the study. This means that the sample is not truly representative of the event population and also is more disproportionate to those from higher incomes and those who have access to the Internet for online survey completion. Moreover, observations at the event site also revealed that there were a substantial number of Hispanics and other minority populations at the show. The lack of a Spanish version of the questionnaire was a drawback and limitation in collection of data as well. More

comprehensive analysis in the future should include minority versions of the survey and additional demographic profile questions about ethnicity and racial backgrounds.

An additional weakness of all EIS is that of recall. This is an acknowledged shortfall in this study as well since the bulk of the survey results were collected post event. The data collection period lasted from the week after the event (actual data collection began on September 22nd, 2008) and extended through a period of approximately five weeks after the event and the data collection ended on October 20th, 2008. There was no attempt made in this study to adjust the data for recall issues nor was there an analysis to determine if the data collected during the more distant time periods of the data collection phase differed significantly from those in the more recent data collection period. This is a recognized limitation, but one that is common to all economic impact studies.

Another challenge that may need to be overcome or used in future studies is to offer better incentives for survey participation. The response rate in excess of 30 percent was excellent; but more careful planning could easily increase this overall rate. For example, when visitors who traveled from New York or Boston were approached in the intercept interviews and the incentives at the Mohegan Sun were offered, they responded by saying, "I am not going to come back all the way for that" and walked away. This meant a lower survey response rate and under-representation of visitors from far away in the intercept process. Incentives such as an iPod or a free plane ride would have been more tempting "incentive" for the visitors to participate. Because most of the visitors were airplane enthusiasts, they would have been really interested in doing whatever it took for a chance to win a free plane or chopper ride. An iPod or a GPS drawing would have been equally appealing to a younger or more geographically dispersed

crowd. It would have also been easy to mail it to them wherever the winner lived or held periodic giveaways throughout the event.

Another limitation of this study is the inclusion of local patrons in the expenditure data collected. To explicitly understand the economic impact of an event, studies typically exclude monies spent by the locals. However, the Great New England Air Show takes place once every few years, 2008 being the first in the past six years. Because this event does not occur frequently, there is not a substitute available for locals to spend their money on. Therefore, their expenditure was included in our analysis.

Recommendations

As the Galaxy Community Council and the Greater Springfield Convention and Visitors' Bureau plan the next air show, it is important to consider how the customers' preferences and opinions can help to improve the show. Based on the visitors' views, concerns, comments and suggestions a number of recommendations for a smoother air show next time are suggested here.

1. Tend to Travel, Parking, Access and Congestion Issues. As mentioned earlier in this study, some of the most important issues centered around access to the event -- traffic, route access, parking and distances from parking lots to the event location. Indicated by most of the event's participants, it took considerable time to get to and from the show. There were also reported cases of individuals who did not even make it to the GNEAS due to the heavy traffic and congestion. *Recommendation:* Needless to say, if this overall logistical issue of access was further considered, reviewed and eventually resolved, the event would be further improved for all visitors.

There were additional accounts of visitors indicating that the traffic was backed up all the way from the base entrance gate to Route 33 (Please see Graphic 4 here). As visitors to the air show, observations indicated that most of the traffic was stalled on the road leading to the air base off of U.S. Route 33 and Memorial Drive. Many of the visitors took James Street as it was the easiest way to the base. *Recommendation:* To resolve this issue, utilizing off-site, satellite, commercial parking spaces and running free shuttles in express lanes to and from the base can help to improve the traffic congestion. This may include intercept signs on major highways and interstates directing visitors to these satellite parking sites. Other considerations might include creating multiple access points with shuttle service from the parking lots to the airstrip site. Finally, another possible solution or opportunity might be to extend the event to three days to more evenly spread out the congestion and increase the opportunity for more people to attend over a three-day weekend.



Graphic 4: Rt.33 to Westover AFB.

2. Consider Alternative and Cross Marketed/Trade-out Promotions. Even though the event is not widely advertised, it still attracts a large regional audience of nearly 350,000 people. This makes the event one of New England's largest special events and perhaps one of the most highly concentrated two-day events in the region. More effective advertising of the event can only increase the inflow of customers and the total economic impact of the event. Likewise, this event makes it particularly attractive in securing sponsors, cross marketing and developing commercial trade-outs for publicity, public relations and advertising efforts as the event reaches a broad and significant cross section of the region's population. There is potential to increase the reach and penetration of new markets and to further drive up attendance; however, managing the event with the existing logistical issues may also be an important issue to consider. So, with an increase in volume of visitors, the problems will multiply exponentially. *Recommendation:* Consider an ideal visitor management goal to obtain and manage the event to this goal. Is it 300,000; 350,000; 400,000 or 500,000 visitors? This attendance goal must be realistic and manageable. This is essential in planning, managing and also marketing the event.

Opportunities appear to exist to improve market penetration in a variety of areas. Regions to focus marketing efforts upon that appear under-represented would be Southern Vermont, New Hampshire, Rhode Island, Boston and portions of New York and perhaps even northern New Jersey. Considering the population concentration in Boston and its surrounding areas, a higher number of visitors should be expected, which can be achieved with more focused and aggressive marketing and publicity efforts.

3. First-Time Visitors Program and More Family Friendly Activities and Connections to Local Attractions. Attempts should be made to convert first-time visitors into repeat customers. This will ensure an ever-expanding customer base and guaranteed revenue from them. The data

also revealed a high percentage of families present at the show. A high number of families at the show ensure higher expenditures and increased economic impact. Moreover, if targeted well, the children who are still in their teens will become a devoted fan of the show and would come for the rest of their lives. Furthermore, there exists the opportunity to cross-market other local attractions to appeal to families while in the area include such local attractions as Six Flags; the Basketball Hall of Fame; the Springfield Museums, etc.

4. Review Vendor Program and Provide More Food/Refreshment Choices at Different

Price Points. A number of visitors expressed concerns about high priced food and drinks at the show. There was limited information conveyed to this research group about the vendor system utilized at the show and per a recent post presentation review it was indicated that the show has only one major vendor. A closer and more detailed look into this matter is required prior to making further suggestions. But, a wider variety of vendor price points for the visitors especially with lower price points for families will help visitors' dollar go further and may extend the overall economic impacts. This was likely exacerbated this year due to the high fuel costs at the pump but was stated enough that considerations are in order here.

5. Repeat Visitation and Continuous Improvements. Nearly 85 percent of the visitors indicated they would be repeat customers and significant portions were past visitors to the GNEAS. This means that they are aware of the show's activities, know what to expect; and even given the hassles of getting to and from the event are more than willing to return. Due to their high levels of loyalty, they are also disappointed when certain standard feature displays, activities and programs are not available. For example, visitors stated that they noticed fewer fighter aircrafts were at this show including the new F-18s. They also missed the FedEx plane and helicopter rides. According to them, the show has always had these featured

displays/attraction except this year. If the visitors are greeted with unpleasant surprises or expectations in the future, it might affect their overall satisfaction with the air show and intentions to return to the show. Therefore, it is imperative that the show be aware of the high level of repeat visitation and these visitors' expectations and include strategies to provide a continuous improvement in displays, attractions and event activities.

6. Enhance the Working Relationship with Greater Springfield Convention and Visitors Bureau (GSCVB) and Co-Sponsors for Data Collection/Registration.

By more closely working with the Greater Springfield Convention & Visitors' Bureau (GSCVB), the Galaxy Community Council may be able to cross-market the show with other vendors and attractions. For example, a direct promotional tie-in with Mohegan Sun at the show or other members of the GSCVB, such as Six Flags may improve the opportunities for more successful intercept interviews or event registration. Mohegan Sun happened to have an ideal booth location at the air show that would have helped improve sampling, increased event registration, and even increased the event sponsor visibility. Mohegan Sun had touch-screen computers setup for visitors to feed in their contact information for a prize.

Recommendation: Consider alternative data collection and event registration processes. A similar intercept concept to the one noted here by Mohegan Sun with follow-up email or mailed surveys would have saved the cost of setting up the booth. A similar booth or a partnered booth with an attraction would have improved the on-site data collection and registration processes. Moreover, the incentives survey takers were provided from Mohegan Sun would have created even more publicity and survey results that could ultimately be shared with the casino as well.

Another approach to increase data collection would be to partner with vendors like Hyundai, Saab, Jeep and military recruiters etc. who displayed their products/services and collected

contact information from the interested visitors. It will be advantageous for both the Galaxy Community Council and the GSCVB to gather that information from the vendors and to include these individuals who registered at the other sites in the online survey. Findings from these individuals could also be packaged and returned to cooperating vendors to more accurately assess the market potential for them as well. Similar approach can be used to gain sales data from all the vendors who sold products like souvenirs, snacks and drinks at the show. Obtaining this data will help achieve more accurate statistics on the show and thus increasing validity of the study.

7. Investigate Methods to Improve Event Registration. The success of this study was directly attributed to the website registration process. This should be continued and further enhanced. Driving potential and past visitors to a registration process and also providing the opportunity to register at the event will greatly help to improve the event quality and to extend the reach of the event's markets. A limitation to this study was that the sample was confined to those individuals who registered at the GNEAS website. Additional registration processes are needed to reach a broader segment of the attending event population including those who do not have internet or e-mail access. Minority versions of the online survey such as a Spanish version would be highly recommended. Also, selected sub-populations who did not participate in the survey need to be reached. These may include vendors, vendor workers, air show participants, base personnel, and military personnel brought in from distant locales to participate in the show. The success of this show may also lead to the consideration of hosting other regional events at the Westover Air Reserve Base. *Recommendation:* Seek methods to improve and extend event registration and consider additional benefits built into the process to drive visitors to either a website or a registration booth at the event; so the appropriate follow-up can be completed in

online registration. Also seek to develop alternative versions of the survey instruments and to seek a broader cross-section of event participants in the survey.

8. Develop Programs or Incentive for Extended Stays. Through this data analysis, it was found that a large portion (89 percent) of the visitors did not spend a night in the area.

Recommendation: It is recommended that package deals be developed and promoted to enhance the outreach of the GNEAS and to extend the length of stay in the local area and region.

Package deals with local hotels, restaurants and attractions would help to increase the overall economic impact of the event. Types of packages and opportunities might include weekend tickets to the New England Air Museum with two hotel nights or tickets to the ceremony at Basketball Hall of Fame with three hotel nights at discounted prices.

9. Develop Baseline Study Data Here and Extend/Continue Study in Future. This study was a first ever attempt to obtain a comprehensive view of the event's economic impact and market analysis. Though the study did have limitations, it provides a baseline understanding of the air show's economic impact, market status and potential. Furthermore, it also suggests a number of possible improvements. *Recommendation:* Continue to conduct an economic impact and market analysis of all future events. The Galaxy Community Council and the Greater Springfield Convention & Visitors' Bureau can maximize their benefits by converting and enhancing this study into an ongoing longitudinal study to analyze effects over time and to conduct additional trend analyses of the event in the future.

CONCLUSION

The Great New England Air Show is the area's most visited two-day regional event. The visitors come from a relatively compact radius (45 miles one-way); are highly satisfied with the event; are likely to return; but do express concerns with the logistics of attending the show. The air show plays an important role in attracting air show enthusiasts and was found to be an important family weekend activity, especially for first-time visitors to the region. The event does generate a significant economic impact to the region – an estimated \$13.5 million in direct, indirect and induced economic benefits. Careful planning and strategic improvements may yield substantially more economic benefits to the region in coming years as a result of this initial baseline EIS and market analysis. The results identified strategic market opportunities for the region's attractions and the qualitative findings revealed a number of recommendations for event improvements.

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APPENDICES

Appendix A: EIS Methodology

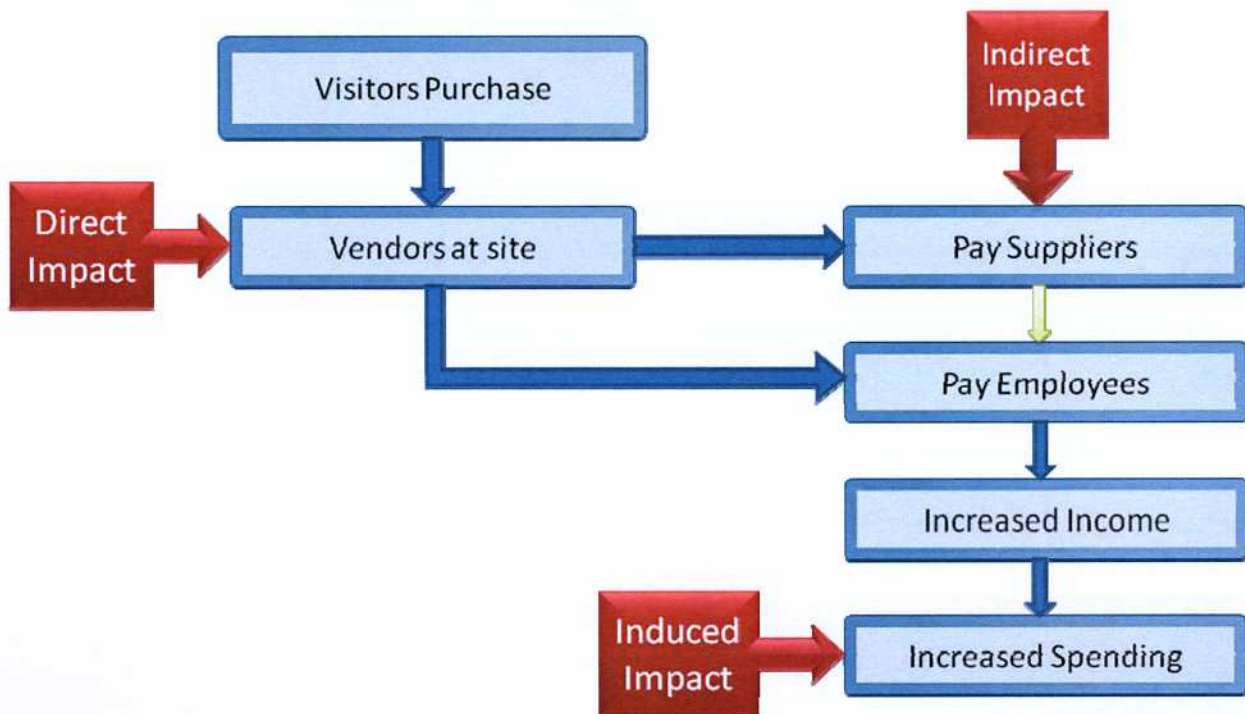


Figure 22: Different Economic Impacts

No previous study had been performed to understand the economic impact of the air show and no sets of market profile information were available. A survey tool based on a typical tourism event economic impact study (Virtue Group, 2004) was utilized as a framework to gather information from the visitors at the show. The population of visitors was obtained by polling visitors who registered at the air show's website (<http://www.greatnewenglandairshow.com/>).

Air show enthusiasts were offered incentives to register at the air show's website. Once registrations for the incentive were complete, all the e-mail addresses were compiled on a Microsoft Excel spreadsheet and then imported to the Qualtrics™ program.

Data were initially collected through an on-ground intercept interview process of approximately 80 subjects. However, due to lack of volunteer coverage and the logistics of intercept interviews, this portion of the study served as a pilot test and the survey instrument was further refined, and then administered to the online registered population. The refinement also included adding 'skip logic' to some of the questions to ensure accuracy of the data collected and appropriate flow and sequencing of the items. It also served to separate local attendees from event visitors.

The GNEAS event was held on Saturday, September 6th and Sunday, September 7th, 2008 at the Westover Air Reserve Base in Chicopee, Massachusetts. The Saturday event day experienced hot and humid weather and the event was interrupted by thunderstorms and rains. Attendance was down considerably during this day. The Sunday event day experienced pleasant weather that provided enjoyable viewing of the air show demonstrations and static aircraft displays.

The registrations were compiled over a three-week period prior to and through the event weekend. Incentives were offered through the website including the pickup of an event poster at the show. From this set of registrations, 3,078 unique, individual email addresses were obtained. The online survey was developed following web survey techniques recommended by Dillman (1999) and implemented using a modified Dillman total design technique. The initial online surveys with incentives were emailed in two batches of 153 sent on September 22nd, 2008 and a second batch of 2,925 sent on October 2nd, 2008. Reminder emails were also sent for each respective batch on October 5th, 2008 and October 14th, 2008 for the batch of 153 email addresses and October 6th, 2008 and October 14th, 2008 for the batch of 2,925 email addresses. All data collection via online survey instrument was ended on October 20th, 2008. Automatic email "Thank You's" were generated for all participants who completed the online survey during the survey period.

Of the total 3,072 registered subjects, 1,106 visitors responded (36 percent response rate). The data were collected online by utilizing Qualtrics™ survey software. The survey itself was divided into distinct sections including; 1) show awareness and motivation; 2) overall interest in air shows; 3) distance traveled and group profile (size of group); 4) expenditure details and overall satisfaction with the air show and 5) basic demographic profile. Averages were compiled for each of the economic measure and extrapolated to the estimated number of attendees. The attendance estimates were derived from the checkpoint entrances at the air show compiled by the Westover Air Reserve Base personnel. Data were also geo-coded to primary residence and mapped on Google Earth to examine the dispersion of the market for the activity.

Descriptive statistics and cross-tabs were used to perform the market analysis and to examine the relationships between variables like gender, interest in air shows, importance of the air show to the individual, days attended, and first-time and repeat attendees. Averages were calculated for other quantitative variables like hours spent at the show, age and expenditures in various categories. Qualitative variables from open-ended satisfaction survey items (visitors' comments) and open-ended general comments were analyzed using CATPAC (1998) – a text mining software program.

Appendix B: Online Survey Instrument

Please find a copy of the survey tool utilized in a separate pdf file. Different paper size, layout and sequencing and restrictive margins required the survey to be placed in a separate file.

Appendix C: Paper Survey Instrument

Please find a copy of the initial basic intercept, paper survey tool utilized in a different pdf file. Different paper size and required the survey to be placed in a separate file.

Appendix D: E-mail Samples

Survey Invite e-mails

Hello!

We, at the Greater Springfield Convention & Visitors Bureau (www.valleyvisitor.com), with the assistance of University of Massachusetts' Department of Hospitality & Tourism Management (www.isenberg.umass.edu/htm) are conducting a study to measure the economic impact of Great New England Air Show on this area.

Please help us by taking approximately 10 minutes to complete this important survey. Provide answers to the best of your knowledge and experience for the air show conducted September 6th & 7th, 2008. The information you provide will be kept strictly confidential.

Once you complete the entire survey, you will automatically be entered to win one of the three prizes from Mohegan Sun (www.mohegansun.com):

- VIP Gift Basket
- Mohegan Sun Dinner for two
- Two tickets to the Cabaret Theater

Only the participants who complete the survey will be entered into the draw for the above prizes, so make sure you don't lose your chance!

The survey will be open from now till **OCTOBER 20TH, 2008**. We will notify the three (3) lucky winners via email in the week following the closing date.

Should you have any questions, please contact the research coordinators for this survey, Deepak or Apurv at airshowresearch2008@gmail.com of the Hospitality & Tourism Management Department at UMass Amherst.

Follow this link to the Survey: `{!://SurveyLink}`

E-mails successfully sent on:

September 22nd, 2008 to the first batch of 153 e-mail addresses.

October 2nd, 2008 to the second batch of 2925 e-mail addresses.

Reminder e-mails

Just a gentle reminder, we contacted you a few days ago about the Great New England Air Show 2008 survey and we are awaiting your response.

This is a reminder requesting you to participate so that we can enter your name into a drawing for one of three (3) prizes being sponsored by the Mohegan Sun.

We, at the Greater Springfield Convention & Visitors Bureau (www.valleyvisitor.com), with the assistance of University of Massachusetts' Department of Hospitality & Tourism Management (www.isenberg.umass.edu/htm) are conducting a study to measure the economic impact of Great New England Air Show on this area.

Please help us by taking approximately 10 minutes to complete this important survey. Provide answers to the best of your knowledge and experience for the air show conducted September 6th & 7th, 2008. The information you provide will be kept strictly confidential.

Once you complete the entire survey, you will automatically be entered to win one of the three prizes from Mohegan Sun (www.mohegansun.com):

- VIP Gift Basket
- Mohegan Sun Dinner for two
- Two tickets to the Cabaret Theater

Only the participants who complete the survey will be entered into the draw for the above prizes, so make sure you don't lose your chance!

The survey will be open from now till **OCTOBER 20TH, 2008**. We will notify the three (3) lucky winners via email in the week following the closing date.

Should you have any questions, please contact the research coordinators for this survey, Deepak or Apurv at airshowresearch2008@gmail.com of the Hospitality & Tourism Management Department at UMass Amherst.

Follow this link to the Survey: `{!://SurveyLink}`

E-mails successfully sent on:

October 5th, 2008 and October 14th, 2008 to the first batch of 153 e-mail addresses.

October 6th, 2008 and October 14th, 2008 to the second batch of 2925 e-mail addresses.

Thank You e-mails

We value your feedback!

Thank you for your participation in the survey.

Your responses are completely confidential and will only be presented as part of the overall visitor profile.

Should you have any questions, please contact the research coordinators for this survey, Deepak or Apurv at airshowresearch2008@gmail.com of the Hospitality & Tourism Management Department at UMass Amherst.

Your views and insights are critical in helping us achieve our goals.
Thank you for your time!

E-mails successfully sent on:

Dates the surveys were completed by participants.

Appendix E: Data Dictionary

Below is a guide to the raw data collected in this study. The raw data are available in digital format to both the GSCVB and the Galaxy Council. The file is in a MicroSoft Excel™ format. The data dictionary below describes the placement of the data in columns for each survey item. Each row of data would represent a completed case in this setup.

Section # on the Survey	Corresponding Column on Appendix F	Description
Section 1	A	How did you first hear about the Great New England Show?
	B	If you mentioned "Other", please indicate in this space
	C	What prompted your interest in attending the Great New England Air Show?
	D	Have you ever been to the Great New England Air Show before?
	E	If "YES", how many times? - # of times
	F	How important is the Great New England Air Show to you?
	G	How interested are you in the subject of air shows?
	H	How frequently do you find yourself thinking about air shows?
Section 2	I	What was the number of people (including yourself) in your immediate traveling group... - # ADULTS
	J	What was the number of people (including yourself) in your immediate traveling group... - # CHILDREN
	K	Which days did you attend the show?
	L	How much time did you spend at the air show, per day? - HOURS PER DAY
	M	In a typical calendar year, how many air shows are you likely to attend? - # OF SHOWS PER YEAR
	N	How many nights away from your primary or current residence did you spend... - # OF NIGHTS AWAY FROM

		HOME
	O	Would you have come to the Pioneer Valley at this time of the year even if the air show had not been held?
	P	If "YES", will you have stayed longer, the same length of time or stayed a shorter length of time?
	Q	How much longer would you have stayed?- # OF NIGHTS

Section 3	R	Please indicate the estimated amount of money that you and your group spent in the area... -Refreshments purchased while at the event
	S	-Food or drinks purchased before or after the event
	T	-Souvenirs or gifts
	U	-Clothing or accessories specifically for the event
	V	-Transportation (e.g. gas, tolls, etc.)
	W	-Local attractions (e.g. Six Flags, etc.)
	X	-Overnight accommodations (e.g. hotel, motel, bed and breakfast, etc.)
	Y	-Other
	Z	Have you ever been to the Pioneer Valley before?
	AA	Purpose of your last visit
	AB	How likely are you to return in the next 2 years?
	AC	Finally, please rate your satisfaction level with the Great New England Air Show 2008
	AD	Is there anything you would like to share about your overall satisfaction or dissatisfaction with Great New England Air Show 2008?
	AE	What is the zip code of your primary or current residence from where you traveled to attend the air show?
	AF	What is your gender?
	AG	In what year were you born? (YYYY)
AH	What is your highest level of education?	
AI	What is your approximate household income (before taxes)?	

	AJ	Is there anything else you would like to share with us about the Great New England Air Show in general or specifically?
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