

*1999 AIRCRAFT OWNERS AND AVIATION USERS
MARKETING SURVEY AND REGIONAL ANALYSIS*



PREPARED FOR THE

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Survey of NY Airports Shows Continued Growth

PREFACE

This marketing survey was undertaken to suggest, identify, define and validate current and potential market opportunities and possible strategies for airport owners and managers in the New York general aviation market, and in particular, in the support supplies and services sector of that market as it relates to airport owners, operators, FBOs and aviation related businesses.

The survey has helped to quantify the general aviation marketplace in New York State and has identified areas of growth opportunity and a market expansion potential of approximately \$130 million over the next two years. Additionally, the survey will be useful in the development of strategies enabling operators of New York airports to more effectively access these growth areas aiding in their overall profitability and long term stability.

The survey was sponsored by the New York State Department of Transportation, Passenger Transportation Division, Aviation Services Bureau, with the NYS Small Business Development Center contracted for development of the survey instrument, mailing, processing and reporting of results.

Conceptually, the survey looked at characteristics of flight and spending patterns, and possible purchase decision motivators common among aircraft owners in New York State and in selected border communities of New Jersey, Pennsylvania, Connecticut, Vermont and Massachusetts.

THE SURVEY

The DOT obtained the list of registered aircraft from the Federal Aviation Administration and prepared the initial sort by state and county creating a list of 12,792 names. The SBDC refined the list through removal of undeliverable records; the results of which are summarized below.

Total Records		12,792
“Sale Reported” & “Pending” – undeliverable ¹	563	
Registered to manufacturers (inventory) and military	68	
Museum and inactive - archive and display aircraft	110	
USPS invalid address - not deliverable	790	1,531
Net available to mail		11,261
Duplicate records ² - multiple registrations, etc.,	3,024	
"Seeded" and "Control" pieces ³	45	3,069
Net deliverable and returnable		8,192
Responses received and processed		920

The mailing was prepared and delivered to the Post Office on December 28, 1998 under the SBDC bulk mail permit. Seed and control pieces began to arrive in January and continued into February. Completed surveys were received in the 3rd week of January and continued through April. A data collection closure date of June 1st was set for reporting final results. The number of surveys that may be received after this date will not have a material effect on data. As of the closure 920 responses or 11.2% of the returnable amount have been received and processed into the data set used for this report and its conclusions.

The state⁴ breakdown of responses included in this report is:

State	Number
CT	46
NJ	108
NY	684
MA	5
PA	33
VT	42

Notes

- 1) “Sale Reported” and “Pending” are record titles used by the FAA in processing registration data and are not, in general, deliverable records. USPS invalid records are addresses tested against the CASS Certified USPS Directory of Deliverable Addresses and found to not be deliverable.
- 2) Duplicate records are multiple tail numbers assigned to the same individual or corporation; generally, surveys were sent to each though many owners returned secondary and additional surveys with a note that they had already completed a survey. As such, we have elected to exclude these records from the calculation of records expected to be returned.
- 3) Seeded and control pieces are records added to the list for evaluation, control and tracking; they are addressed to specific locations and persons under program control.
- 4) The state breakdown of responses does not include 8 returns not identifiable as to source. Overall, 595 zip codes were represented among returns indicating a broad geographic base of responses; the 8 unknown source returns have been omitted from regional results.
- 5) Some general processing rules have been applied to all data and calculations:
 - a) Blank or zero answers to questions are omitted prior to calculation.
 - b) Results have been reported as literal with few exceptions; answers which are obviously misspelled or physically impossible have been corrected when practicable (e.g., a pilot having been flying for ‘100’ years, corrected to ‘10’ to eliminate the “0” typographical error).
 - c) Rounding of calculations, percentages and averages may not add to a full scale measure of 100% and some decimal values not add evenly.
 - d) Not all respondents answered all questions and, as such, individual question results may add to the total responses.

REGIONAL MARKET BREAKDOWN

The study coordinators divided the state into regions and the composition of those regions reflect the demographic and socio-economic variables that tend to create commonality. Considered also were the linkages that exist within regions that often include economic development alliances, transportation infrastructure, media representation, educational initiatives, geographic features and other factors that foster community relationships and establish intra-regional identities.

For statistical purposes, ease of reader identification and geographic consistency, SCF zip code identifiers were used to segregate to allow compilation and efficient presentation. Minor adjustments to regional boundaries were made to ensure a sufficient number of responses required for survey data to be a valid indicator of market conditions. Similarly, border communities have been aggregated into select regions.

*Region #1: **WNY** Western New York/Niagara Frontier*

Represented by SCFs 140-143 & 147, this region encompasses the major markets of Erie (Buffalo), Niagara (Niagara Falls), Cattaraugus and Chautauqua Counties (Jamestown). A total of 84 responses were received from aircraft owners in the region.

*Region #2: **RST** Rochester/Southern Tier*

Represented by SCFs 144-146 & 148-149, this region encompasses the area known as the “Ceramics Corridor” and includes the major markets of Monroe (Rochester), Steuben (Corning) and Chemung (Elmira) Counties. A total of 111 responses were received from aircraft owners in the region.

*Region #3: **CST** Central New York/Western Southern Tier -- including Pennsylvania*

Represented by the SCFs of 130,131, 132, 137, 138 and 139, this region encompasses the Interstate 81 corridor that includes the major markets of Onondaga (Syracuse), Cortland (Cortland), Tompkins (Ithaca) and Broome (Binghamton) Counties. Included are Pennsylvania counties contiguous to New York. A total of 89 responses were received from aircraft owners in the region including 33 from Pennsylvania.

*Region #4: **NCM** Northern Country/Mohawk Valley – including Vermont*

Represented by the SCFs of 133-36, 128 & 129, this region encompasses the general North Country and western Mohawk Valley regions and the major markets of Oneida (Utica), Jefferson (Watertown), Warren (Glens Falls) and Clinton County (Plattsburgh). Included are Vermont counties contiguous to New York. A total of 122 responses were received from aircraft owners in the region including 42 from Vermont.

*Region #5: **CAD** Capital District/Mid- Hudson – including Massachusetts*

Represented by the SCFs of 120-27, this region encompasses the Hudson River corridor and the major markets of the Greater Capital District (Saratoga, Albany, Schenectady & Troy), Catskill and the Mid-Hudson River Valley Regions. Included are Massachusetts counties contiguous to New York with 119 responses were received from aircraft owners in the region and 5 responses from Massachusetts.

*Region #6: **MET** Lower Hudson/Metro NYC – including New Jersey and Connecticut*

Represented by SCFs of 090-109 and 112, this region encompasses the Lower Hudson major markets of Westchester (White Plains) and Rockland Counties and the Boroughs of the Bronx, Manhattan, Brooklyn and Staten Island. Out of state responses included Connecticut and New Jersey with 234 responses from aircraft owners in the region; 46 originated from Connecticut and 108 originated from New Jersey.

*Region #7: **QLI** Queens & Long Island*

Represented by SCFs of 110-11, 113-19, this region encompasses the NYC Borough of Queens and all of Long Island. A total of 114 responses were received from aircraft owners in the region.

RESPONDENT COMMENTS

This survey instrument was designed to collect empirical and anecdotal marketing data on aircraft owners and their spending patterns. Anecdotal data was collected to provide opinion data to illustrate the context and additional understanding needed to improve the utility and applicability of the data, and, to develop market strategies. Asking respondents to share their comments and opinions is one method selected for this survey.

It is interesting to note that approximately 60% of respondents had an opinion or comment to offer, and, a high percentage of respondents included one or more forms of contact information. The comments have been sorted into thematic areas and representative comments are presented here as an aid to understanding the statistical data that follows. All comments are presented as received.

General Comments

- a) *Seeing this form is a step in the right direction. It means that we are concerned about our airports*
- b) *Develop the areas around existing airports. Make it very attractive to business so they will relocate. I would be interested.*
- c) *Don't allow money designated for airport improvements to be used for other purposes.*
- d) *GA airports are essential to us and important to everyone.*
- e) *Flying generates and accommodates a large service related industry and good quality airports with full services attract pilots who need service, which provides employment.*
- f) *I would welcome the chance to move closer to home and in NYS especially but the cost and availability of a place to keep it are very restrictive.*
- g) *We need to sell airports as a public asset.*
- h) *Encourage aviation instruction to help the industry.*
- i) *There must be a role for volunteers to play in NY aviation – runway or airport maintenance for example*

Fuel Related

- a) *Too expensive.*
- b) *I purchase fuel in NY only because it is convenient.*
- c) *Need to eliminate some fuel taxes on avgas to be competitive with PA.*
- d) *Remove road usage tax from aviation gasoline.*
- e) *I was impressed when refueling in RI...the road tax was subtracted from the fuel price.*
- f) *80 octane avgas in not readily available.*
- g) *I prefer to fly over NYS and purchase fuel elsewhere.*

General Aviation Needs

- a) *Pilots need to feel welcome when they land...availability of food, water and fuel are of paramount importance.*
- b) *Encourage large airports to be friendlier to GA*
- c) *Other states treat small GA's better than New York*
- d) *When fuel is purchased, waive landing and parking fees*
- e) *If the focus at NYS airports continues to progress in the direction of landing fees for private aircraft, you will find your North Country traffic going elsewhere (VT pilot).*
- f) *If user's fees are implemented, it will destroy general aviation.*
- g) *I believe that general aviation contributes greatly to a region's ability to attract and keep business.*
- h) *Print a New York State aeronautical chart.*

Storage and Service

- a) *There is a severe shortage of hangar space at most airports. Everywhere the waiting list is 40 people, with many others giving up!*
- b) *We need more selections for avionics purchases and repairs/pilot shops/paint shops. It is no wonder that most pilots leave the state for most services.*
- c) *Need more facilities to paint/refurbish interior and exterior. I need to have my current plane painted and nowhere locally to go.*
- i) *Would like to see a free NYS airport guide similar to PA, listing all airports, diagrams, etc.*
- j) *Should have a NYS airport facility brochure w/map like PA, Wisconsin and others have.*
- k) *It is not well known to pilots outside of NYS that the diversity of scenery make NYS a mecca to the recreational pilot. This should be promoted.*
- l) *Install ASOS systems at smaller airports.*
- m) *A need for automated weather observation system or GPS precision approaches could help small airports.*
- n) *More "direct to" clearances using GPS.*
- o) *Install more instrument approaches at NYS airports.*
- p) *Install remote clearance frequencies at smaller airports.*
- q) *NYS needs more fly-in campsites for aircraft only*
- r) *Increase the number of airstrips located within NYS parks, like Idaho has organized its airstrip program*

- s) *Courtesy cars at small airports.*
- t) *A working public telephone is essential at all airports.*
- u) *An enclosed, heated pilot lounge open 24/7 would be nice for weathered-in transient pilots.*
- v) *It is important to have something to do in the vicinity of an airport, land and get transportation to and from an attraction.*
- w) *Restaurants on or near a field draw traffic.*
- x) *Many trips have been hindered because of no fuel, no transportation, no phone etc.*
- y) *Install 24hr self-service fuel systems.*
- z) *All general aviation airports should be listed in the yellow pages*

INDUSTRY BACKGROUND

The pilot population is growing stronger. According to FAA data, the pool of pilots grew from 616,340 in 1997 to 618,298 in 1998. Additionally, the FAA issued 22% more *new* private pilot certificates for the same period – clearly indicating that more people are *completing* flight training. New instrument ratings grew by 36.6% and student starts are up, increasing by more than 15% in the first two months of 1999.

Certificates Held, Aircraft Registered and Hours Flown 1998		
Category	Total	%
Pilot Certificates Held	618,398	100.0
Student	97,736	15.8
Private	247,226	40.0
Commercial	122,053	19.7
ATP	134,612	21.8
Other	16,671	2.7
Active General Aviation Aircraft	191,562	100.0
Piston, Single-engine	138,372	72.2
Piston, Multi-engine	15,830	8.3
Turboprop	5,351	2.8
Turbojet	4,592	2.4
Rotorcraft	6,516	3.4
Experimental	16,688	8.7
Other	4,213	2.2
General Aviation Hours Flown (Millions)	26.9	

According to the General Aviation Manufacturers Association (GAMA), there was substantial growth in the production of piston-engine aircraft – in 1998 a total of 1,534 piston-aircraft were delivered, an increase of more than 55% over 1997. The bulk of that increase was in the single engine piston-aircraft category. Edward M. Bolen, President of GAMA notes that “Industry backlogs suggest that the strong demand we are seeing for new general aviation aircraft will continue at healthy levels. In many cases, existing orders are accounting for an extremely high percentage of overall production capacity. Demand for used general aviation aircraft also remains strong.” Further supporting continuing growth are statistics from the *Aircraft Bluebook*, one of the industry's leading authorities on used aircraft prices. The Bluebook notes that sales of used aircraft *increased* more than 20% in 1998 and that prices of used aircraft increased in all categories. This is a good indicator of across the board market strength in general aviation with excellent upward indications for growth in aftermarket supplies and services.

The General Aviation Manufacturers Association reports that student pilot starts have increased by nearly 12% since 1996. In 1998 alone, the number of people earning their pilot's license increased 22%. Much of this growth can be attributed to aviation organizations and manufacturers who have established innovative programs to stimulate increases in the number of pilots, subsequent aircraft ownership, and, public interest in general aviation. A few examples include:

1. The Victorinox Swiss Army Knives Fun-n' Fly Scholarship Program, organized in conjunction with Flight Training Adventure Camps, provides financial support to youths interested in the sport of flying.

2. The Experimental Aircraft Association sponsors the Young Eagles Pilot Program, a volunteer effort designed to give children ages 8 –17 a free introductory airplane ride. Over 470,000 Young Eagles have participated and the EAA has an ambitious goal of over 100,000 new registrations for 1999. The S.C. Johnson Wax Co. is the major corporate sponsor of the Young Eagles Pilot Program and other companies such as Phillips 66 are encouraging greater participation by offering a generous AvGas rebate program for volunteer pilots. The National War Plane Museum in Chemung County and Dowling College on Long Island are the two New York State participants in the Young Eagles initiative.
3. Aircraft manufacturers such as Cessna are sponsoring cooperative marketing programs with their dealer network such as the Discovery Flight program to provide an inexpensive introduction to flying an aircraft.
4. Project Pilot, a program of the national Aircraft Owners and Pilots Association, is designed to stimulate mentor relationships with student pilots. 24,000 new pilots have been mentored since 1994. AOPA’s Apple program has developed local education activities and materials to encourage career and hobby opportunities in aviation.

SURVEY RESULTS

- **How long have you been a pilot?**

The average reported is 23.9 years, with 70 the longest reported. The distribution among cohorts is depicted in the following graph and tables.

Distribution of Pilots by Years of Flying – All Respondents											
Years	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	50+
Number	111	104	93	85	100	109	124	53	41	31	69
Percentage	12.1%	11.3%	10.1%	9.2%	10.9%	11.8%	13.5%	5.8%	4.5%	3.4%	7.5%

Distribution of Pilots by Years Flying – Respondents by Region											
	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	50+
CAD	17	16	10	13	15	18	11	2	1	9	7
CST	26	30	17	16	23	29	10	5	12	5	12
MET	34	29	26	29	26	29	19	18	10	4	11
NCM	14	10	4	9	10	6	5	4	3	2	5
QLI	21	5	12	14	9	14	15	11	1	7	5
RST	15	10	10	12	16	20	11	6	4	2	5
WNY	17	9	5	3	12	11	7	5	4	2	9

Percentage Distribution of Pilots by Years Flying – Respondents by Region											
	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	50+
CAD	14.3	13.4	8.4	10.9	12.6	15.1	9.2	1.7	0.8	7.6	5.9
CST	14.1	16.2	9.2	8.6	12.4	15.7	5.4	2.7	6.5	2.7	6.5
MET	14.5	12.3	11.1	12.3	11.1	12.3	8.1	7.7	4.3	1.7	4.7
NCM	19.4	13.9	5.6	12.5	13.9	8.3	6.9	5.6	4.2	2.8	6.9
QLI	18.4	4.4	10.5	12.3	7.9	12.3	13.2	9.6	0.9	6.1	4.4
RST	13.5	9.0	9.0	10.8	14.4	18.0	9.9	5.4	3.6	1.8	4.5
WNY	20.2	10.7	6.0	3.6	14.3	13.1	8.3	6.0	4.8	2.4	10.7

Are you currently flying?

65.6% are currently flying, 604 of 920 respondents

Do you expect to purchase/lease an aircraft within the next 2 years?

194 respondents or 21.1% with an average flying time of 22.6 years indicated plans to lease or purchase an aircraft within the next 2 years.

Planned Aircraft Lease/Purchase within 2 Years by Region		
Region	Number	%
CAD	22	18.5%
CST	35	18.9%
MET	53	22.5%
NCM	15	21.1%
QLI	23	19.3%
RST	30	27.0%
WNY	16	19.0%
Total	194	21.0%

Within 3-5 years?

183 respondents or 19.9% with an average flying time of 20.3 years indicated plans to lease or purchase an aircraft within the next 3 to 5 years.

Planned Aircraft Lease/Purchase within 3-5 Years by Region		
Region	Number	%
CAD	21	17.6%
CST	27	14.6%
MET	52	22.0%
NCM	14	19.7%
QLI	21	18.4%
RST	31	27.9%
WNY	17	20.2%
Total	183	19.9%

Observations: The distribution of pilots by years flying seems to align with the ten year absence of production of general aviation aircraft and is consistent with national data supporting the resurgence of general aviation combined with standard mortality rates. The measure of those planning to buy or lease an aircraft within the next 5 years (total) is significant and is best viewed as a “consumer confidence” measure - not as a predictor of the specific number of aircraft likely to be sold. Additionally, the question did not differentiate between new or used aircraft. At 42.9% it’s a substantial number and suggests continued growth in the overall general aviation market and must include a positive outlook for growth in services and secondary product sales as aircraft prices continue to trend upward and growing numbers of new aircraft are brought on line.

Respondents to this survey were not asked the type of aircraft likely to be purchased/leased or whether that aircraft would be new or used. Assuming that a potential of 1,638 aircraft will be acquired within the next five years and that a conservative estimate (10%) of those will be new aircraft purchases/leases, \$48.8 million worth of aircraft will be acquired by pilots within the extended NYS aviation marketplace. Even a small percentage increase in new aircraft acquisitions means the introduction of valuable aviation assets into the marketplace. Estimates are based on the following average values of aircraft.

Average Unit Cost of New Aircraft (estimated)	
Aircraft Type	\$
Piston Aircraft (single-/multi-engine)	217,259
Turboprop	3,135,593
Turbojet	10,689,655

- **Where is your primary aircraft based?**

190 unique locations were cited.

Observation: Given the number of airports in the geographic area covered by the survey, this number of locations indicates a good geographic basis for the data. The New York State Department of Transportation reports that currently, there are 364 private use airports and 163 public use airports in the state. The number of aircraft based at these facilities is estimated at approximately 6,700. 90% of the facilities statewide are dedicated to general aviation.

- **How do you store your aircraft?**

Slightly more than 38% store their aircraft at a *tie-down* and 62% store in a hangar of some sort, specifically,

	Tie-down paved	Tie-down unpaved	Hangar	T-Hangar
Number	242	71	334	162
Percentage	29.7%	8.7%	41.6%	19.9%

Region	Count	Tie-Down Paved		Tie-Down Unpaved		Hangar		T-Hangar	
CAD	119	28	23.5%	17	14.3%	40	33.6%	19	16.0%
CST	185	20	10.8%	14	7.6%	80	43.2%	45	24.3%
MET	236	97	41.1%	20	8.5%	65	27.5%	29	12.3%
NCM	71	14	19.7%	10	14.1%	20	28.2%	16	22.5%
QLI	114	42	36.8%	3	2.6%	34	29.8%	15	13.2%
RST	111	22	19.8%	5	4.5%	54	48.6%	24	21.6%
WNY	84	19	22.6%	2	2.4%	41	48.8%	14	16.7%

Observation: With about one-third of respondent aircraft not in hangars, 80% indicating a preference for hangar space and comments regarding the need or desire for hangar space, there appears to be material demand for new [additional] hangar space.

- **How much do you or your firm spend on storage per year (not including maintenance)?**
The average across the entire group is \$2,094 annually.

Average of Non-Zero Responses on Storage Spending by Region		
Region	Number	\$
CAD	98	1,723
CST	151	1,787
MET	211	2,479
NCM	59	1,881
QLI	104	2,764
RST	101	1,913
WNY	73	2,005

The breakdown by current storage mode is,

Annual Storage Expense Across All Respondents			
Tie-down paved	Tie-down unpaved	Hangar	T-Hangar
\$ 1,274	\$ 716	\$ 2,375	\$ 2,411

Annual Storage Expense by Region (dollars)							
Storage Mode	Region						
	CAD	CST	MET	NCM	QLI	RST	WNY
Paved Tie Down	839.38	1,156.94	1,656.29	722.17	1,429.02	905.45	1,367.22
Unpaved Tie Down	671.63	666.92	829.59	1,550.13	560.00	546.00	288.00
Hangar	2,236.77	2,330.55	4,471.79	1,309.44	3,977.79	1,990.00	2,381.53
T- Hangar	2,661.11	1,569.22	2,718.83	3,952.08	4,267.00	2,544.79	1,873.31
No mode selected	2,574.00	1,525.88	2,097.62	1,870.00	2,717.86	2,621.43	2,803.33

Observation: The disparity in price and as such, perceived value, between cost levels of tie-down (\$558) and levels of hangar (\$36) is indicative of an opportunity for price re-definition in hangar storage, ie., raise the top prices thereby allowing raised lower prices to appear of greater value. Further, the magnitude of the cost disparity in storage modes indicates very strong perceived value attached to hangaring an aircraft.

- **What type of storage would you prefer and what would you consider a fair price?**

The following table summarizes preferred storage respondents who interestingly reported \$2,136 as fair price for storage compared to the current \$2,094 (average across the group).

	Tie-down	T-Hangar	Hangar	Unspecified
Number	60	394	350	115
%	6.5%	42.9%	38.1%	12.5%
Value	\$ 596	\$ 1,802	\$ 2,178	\$ 926
Current \$	\$ 995	\$ 2,411	\$ 2,375	n/a
+/-	\$ (399)	\$ (609)	\$ (203)	n/a

Observation: Enclosed space is by far the preferred mode of storage among aircraft owners. The discrepancy between current annual payments and perceived value notwithstanding, with only 19.9% of current owners now in a T-hangar and many saying they want it, indicates a good opportunity and demand situation for T-hangar sales/rental. We can also learn from the data that more marketing effort is required to improve the perceived value of T-hangar space and its similarities with conventional hangar space particularly on issues of privacy and access. We can observe that tie-down space in particular is perceived to be worth substantially less than the current pricing indicating a need for improved marketing and further supporting the relative “distaste” many consumer have for Tie-Down space as opposed to hangar space. Additionally, the gap between perceived value and market price is an indicator of sales resistance or difficulty, it is easier to sell a product that is thought to be worth the price; the larger the gap the more difficult the sale.

The following table represents the regional summary of preferred storage mode and perceived value levels (*n.b. the response category n/c indicates that no choice was indicated by the respondent*):

Preferred Storage Mode and Price Point by Region				
Region	Mode	Average	Count	%
CAD	Hangar	\$ 3,262.86	42	35.3%
CAD	T-Hangar	\$ 1,699.25	53	44.5%
CAD	Tie Down	\$ 686.67	9	7.6%
CAD	n/c	\$ 300.00	15	12.6%
CST	Hangar	\$ 1,833.33	78	42.2%
CST	T-Hangar	\$ 1,378.75	72	38.9%
CST	Tie Down	\$ 272.86	7	3.8%
CST	n/c	\$ 582.79	28	15.1%
MET	Hangar	\$ 2,614.75	80	34.0%
MET	T-Hangar	\$ 2,305.94	112	47.7%
MET	Tie Down	\$ 665.48	21	8.9%
MET	n/c	\$ 1,219.09	22	9.4%

Preferred Storage Mode and Price Point by Region				
Region	Mode	Average	Count	%
NCM	Hangar	\$ 1,374.00	25	35.2%
NCM	T-Hangar	\$ 1,430.94	32	45.1%
NCM	Tie Down	\$ 352.20	5	7.0%
NCM	n/c	\$ 1,160.00	9	12.7%
QLI	Hangar	\$ 2,613.16	38	33.3%
QLI	T-Hangar	\$ 2,045.00	51	44.7%
QLI	Tie Down	\$ 442.22	9	7.9%
QLI	n/c	\$ 1,006.25	16	14.0%
RST	Hangar	\$ 1,442.87	45	40.5%
RST	T-Hangar	\$ 1,667.35	49	44.1%
RST	Tie Down	\$ 1,252.00	5	4.5%
RST	n/c	\$ 1,053.33	12	10.8%
WNY	Hangar	\$ 1,777.38	42	50.0%
WNY	T-Hangar	\$ 1,235.80	25	29.8%
WNY	Tie Down	\$ 425.00	4	4.8%
WNY	n/c	\$ 1,519.85	13	15.5%

- **Do you have your aircraft serviced where it is based?**

55.3% of the respondents, 509 of 920 have service work performed at the aircraft base airport.

Observation: 55.3% is representative of most regions and indicates an opportunity for many airports to retain dollars in local spending that are currently leaving the area, in other words, there is a significant market opportunity to capture or recapture service spending.

Regionally, the numbers are fairly consistent with 6 of 7 regions falling within a 10 percentage point range indicating that there is good growth opportunity in all of the regions to capture or recapture service spending.

Region	Number	Total in Region	%	\$ of Lost Opportunity
CAD	67	119	56.3%	\$590,512.00
CST	106	185	57.3%	\$897,124.00
MET	127	236	53.8%	\$1,237,804.00
NCM	31	71	43.7%	\$454,240.00
QLI	69	114	60.5%	\$511,020.00
RST	64	111	57.7%	\$533,732.00
WNY	45	84	53.6%	\$442,884.00

- **Please identify the service location and rank the following reasons in selecting a base for service.**

The purchasing decision points and motivations behind service spending are very complex, but these tables summarizes average importance for these services as reported by aircraft owners, the purchase decision makers (*1 is most important, 10 is least, the table has been sorted in order of*

importance). The first table is ranked by overall average score across the three main service areas, the second set of tables are by specific category of service, and, the third set are the regional tabulations presented in alphabetical not numerically ranked order.

	Overall	A & P	Avionics	Finish
Other – see note B	3.14	2.89	3.48	3.06
Availability of specialized service	3.29	3.60	2.95	3.33
Schedule & timeliness	3.43	3.06	3.60	3.64
Price	3.88	3.61	4.19	3.85
Convenience to frequent routing	4.14	3.65	4.37	4.40
Recommendation	4.18	4.80	3.85	3.90
Only facility in region	5.30	5.59	4.79	5.51
Factory authorized	5.62	5.96	4.57	6.32
Dealership	6.54	7.14	5.92	6.55

Factor	A & P	Factor	Av'ncs	Factor	Finish
Other - see note B	2.89	Specialized service	2.95	Other - see note B	3.06
Schedule & timeliness	3.06	Other - see note B	3.48	Specialized service	3.33
Specialized service	3.60	Schedule & timeliness	3.60	Schedule & timeliness	3.64
Price	3.61	Recommendation	3.85	Price	3.85
Conv. to frequent routing	3.65	Price	4.19	Recommendation	3.90
Recommendation	4.80	Conv. to frequent routing	4.37	Conv. to frequent routing	4.40
Only facility in region	5.59	Factory authorized	4.57	Only facility in region	5.51
Factory authorized	5.96	Only facility in region	4.79	Factory authorized	6.32
Dealership	7.14	Dealership	5.92	Dealership	6.55

The reasons indicated in “Other” varied but some themes appear which are best summarized as individual workmanship, craftsmanship and comments reflecting the perceived emotional bond between human and hardware felt by aircraft owners. The comments include “reputation for quality”, “caring technicians”, “know what they’re doing”, “always reliable”, “best service in the state at [locator]”. It is noteworthy that quality, schedule and availability significantly outrank dealership, factory authorized service and regional exclusivity as motivators for service purchasing decisions. This information should feed specifically into the market strategy development of airport operators and service providers.

The similarity of ranking between service types indicates that operators will be able to create fairly cohesive, simplified market efforts to attract a broad range of service business with only minimal specialization in subordinated market areas.

Regionally, the data appear to be fairly consistent with full survey results though individual regional operators will be able to infer specific marketing/sales information from their specific regional results. It is important to note the significance on a regional basis of the value attributed to "Other". The comments used by respondents to describe "Other" consistently reflect themes of workmanship, craftsmanship, quality, reliability and care for the equipment being serviced.

Region	A & P	Avionics	Finish/Trim		Region	A & P	Avionics	Finish/Trim
Only facility in the region					Dealership			
CAD	2.45	1.91	1.05		CAD	2.60	1.91	1.03
CST	2.21	1.76	1.25		CST	2.18	1.35	0.86
MET	2.53	1.81	1.11		MET	2.73	2.20	1.17
NCM	2.37	1.72	1.11		NCM	2.39	1.96	1.01
QLI	2.75	2.21	1.37		QLI	3.28	1.88	1.56

RST	2.32	1.62	1.05		RST	2.39	1.83	0.59
WNY	3.11	2.29	1.30		WNY	3.02	2.45	1.44
Availability of specialized services				Convenience to frequent routing				
CAD	2.18	1.63	0.93		CAD	1.84	1.69	1.12
CST	1.52	1.17	0.76		CST	1.62	1.70	0.90
MET	1.77	1.31	0.59		MET	1.86	1.59	1.00
NCM	1.46	0.77	0.49		NCM	1.72	2.07	1.34
QLI	2.18	1.56	1.09		QLI	1.99	1.51	1.32
RST	2.10	1.56	0.61		RST	1.88	1.62	0.51
WNY	1.98	1.42	1.06		WNY	2.25	2.07	1.18
Price				Schedule & Timeliness				
CAD	2.06	1.91	0.92		CAD	1.53	1.35	0.61
CST	1.80	1.51	0.79		CST	1.37	1.32	0.77
MET	2.31	2.06	0.95		MET	1.84	1.47	0.86
NCM	1.68	1.65	0.79		NCM	1.97	1.54	0.96
QLI	2.72	2.05	1.54		QLI	2.11	1.54	1.39
RST	2.24	1.53	0.86		RST	1.68	1.52	0.41
WNY	2.00	2.06	1.12		WNY	1.87	1.79	0.94

Region	A & P	Avionics	Finish/Trim		Region	A & P	Avionics	Finish/Trim
Recommendation from friend, fellow pilot, etc.				Factory authorized service				
CAD	1.80	1.49	0.82		CAD	2.09	1.74	0.97
CST	1.89	1.20	0.67		CST	2.04	1.06	0.84
MET	2.12	1.67	0.82		MET	2.21	1.69	1.07
NCM	1.65	1.37	0.80		NCM	2.01	1.39	0.99
QLI	2.56	1.82	1.25		QLI	2.54	1.37	1.56
RST	2.24	1.50	0.85		RST	2.14	1.68	0.68
WNY	2.13	1.88	1.15		WNY	2.83	2.23	1.51
Other								
CAD	0.53	0.51	0.34					
CST	0.56	0.36	0.21					
MET	0.50	0.41	0.19					
NCM	0.39	0.41	0.20					
QLI	0.70	0.55	0.42					
RST	0.59	0.62	0.35					
WNY	0.63	0.69	0.27					

- **What do you estimate your annual service/supply expenses to be?**

The following table summarizes average annual spending by category:

Annual \$	% of Annual Spending	Item
\$ 1,233	10.9%	Supplies and consumables (oxygen, batteries, tires)
\$ 1,328	11.7%	Routine maintenance (oil changes, minor repairs, not incl annuals)
\$ 1,626	14.3%	Electronics and data (GPS, navigation cards)
\$ 2,554	22.5%	Annuals, 100 hour, overhauls, major service
\$ 4,615	40.6%	Fuel and additives
\$ 11,356	100.0%	

Observation: With 60% of annual expenses going to other than fuel, there is indication of an opportunity to capture spending in segments that may be currently underserved by local sources. The “electronics and data” is one such area. This sector has fairly low barriers to entry and start-up but it is subject to a more competitive market environment characterized by catalogue and Internet sellers. Their presence indicates commodity characteristics in the marketplace against which local business will need to provide enhanced service to remain viably competitive.

Regionally, we found significant differences in reported data which may be reflective of buying practices, competitive (or non-competitive) environment and related market factors.

Spending by Region and Service Category (\$'s)							
Service Category	CAD	CST	MET	NCM	QLI	RST	WNY
Routine Maintenance	1,561	913	1,287	476	1,377	868	905
Annuals	3,017	1,517	2,427	1,316	2,581	1,774	2,845
Supplies/Consumable	4,335	321	517	250	459	460	400
Electronics/Data	4,219	491	792	539	886	456	694
Fuel/Additives	9,697	3,071	3,744	1,648	3,243	2,455	3,183

As the above chart illustrates, in most cases, the ratio among the categories and within the regions are similar across many of the regions. The sharp disparity in the Capital District may be due in part to statistical anomaly in the particular aviation users responding and/or may be due to regional pricing, market practices and lack of a competitive environment.

Extrapolation of statistics and responses on this segment of the general aviation marketplace suggest that strong growth potential exists. Survey respondents report that the potential exists for over 1,600 aircraft to be purchased/leased within the next five years. If just 10% or 160 units of that total are new aircraft acquired and an additional 5% of the used aircraft that are currently based outside New York were relocated to New York the possible expansion of the New York aviation marketplace could amount to \$130,970,150 in new or growth spending over a two year period.

Summary of Marketplace Potential in New York General Aviation			
Units	Value	Market Value	Category
155	\$217,259	\$33,675,145	Piston Aircraft
12	\$3,135,593	\$37,627,116	Turboprop Aircraft
5	\$10,689,605	\$53,448,025	Turbojet Aircraft
172	\$2,094	\$360,168	Storage
172	\$1,233	\$636,228	Supplies and consumables
172	\$1,328	\$685,248	Routine maintenance
172	\$1,626	\$839,016	Electronics and data
172	\$2,554	\$1,317,864	Annuals, 100 hour, major service
172	\$4,615	\$2,381,340	Fuel and additives
		\$ 130,970,150	

The impact of general aviation on both regional and statewide economies is substantial and even a modest increase in the number of aircraft based or serviced in New York will have important economic implications. It is important to note that 44% of this impact is at the airport, 14% is off-airport, and, 42% is aviation related. This has strategic implications for communication with and to localities and communities when it is time to develop investment in local airports and facilities. Further, several years ago, the NYS Department of Transportation conducted a study that found general aviation airports have a \$201 million impact and are responsible for over 2,600 jobs in New York's economy.

- **Do you purchase the majority of your fuel in New York State? ...and why?**

583 or 63.4% of respondents purchase the majority of their fuel in New York State with average purchases of \$4,916 vs \$4,615 across the entire group.

Observation: 75% of the respondents are based in and operate in New York, however, only 64% buy their fuel in New York with 36% making the effort, in one form or another, to buy elsewhere and remove that spending from NY airport operators. The discrepancy between those spending *in-state* vs *out-of-state* represents market opportunity. Further, the disparity supports the numerous comments made by respondents regarding higher taxes and higher prices for fuel in NY. The strategic marketing implication of this result points to marketing campaigns targeted to correction of 'mis-impressions' or 'misperceptions' concerning NY fuel taxes and prices; to some price reduction events by NY operators; comparative advertising; government advertising; and, possibly evaluation of existing tax levies on fuel.

% of Respondents Purchasing the Majority of Fuel at Base Airport			
Region	Number	Ttl	%
CAD	95	119	79.8%
CST	121	185	65.4%
MET	114	236	48.3%
NCM	34	71	47.9%
QLI	75	114	65.8%
RST	78	111	70.3%
WNY	65	84	77.4%

There are likely several explanations for the significant disparity in percentage of aircraft owners purchasing the majority of their fuel at their base airport. Among these is the usage pattern of the aircraft; for example, an airplane with extensive cross country usage will not be a substantial fuel customer, however, regions with less than 75% should have an opportunity to recapture fuel spending currently being lost to other states, regions or fields.

- **How much fuel and what type do you purchase on average each month?**

This question seems to have been misinterpreted by some respondents. As such, we have adjusted the data in this presentation to reconcile reported fuel spending with reported consumption and have assumed that the spending reported is likely the more accurate data. *Note: select data that are immaterial (less than 1% of users) have been eliminated. These include propane, 93 octane, air and 150LL.*

Summary of Fuel Type and Monthly Usage				
Fuel Type	# Using	% Using	Gal/mo	Annual \$
Avgas 100	461	50.0	390	3,001
Mogas 80	85	9.24	312	1,006
Jet A	24	2.62	3,400	95,953
Unspecified	210	22.8	366	2,828

Average Monthly Fuel Consumption by Region (gallons)					
Region	Avgas 100	Jet A	Mogas 80	Misc (air, propane, etc.)	Unsp'd
CAD	332	3,905	147	300	178
CST	248	3,695	350	400	
MET	344	3,117	412		173
NCM	553		185		138
QLI	660	3,000	199		295
RST	245	50	295		410
WNY	446	1,650	166		

- **Rank the factors most important to you in selecting a fuel facility (as with earlier questions 1 is the most important factor, 4 is the least).**

Availability, 1.06, was ranked most important, *Price*, 1.39, was next most important, *Service* was 3rd by a slight margin at 1.78, and *Additives* were a distant 4th at 2.30 among respondents.

Observation: The high ranking given availability and price coupled with the high number of users of 100LL supports development of market and operating strategies of wider, more cost effective fuel delivery systems such as self-service credit card activated pumps, fuel purchase clubs or frequent buyer discount programs. Additionally, the more barriers to purchase that can be lowered or removed will aid in recapturing the 36% of fuel spending that is leaving the local market.

Fuel Purchase Decision Factors				
Average of Importance (1 most important, 4 least important)				
Region	Avail.	Add'ves	Service	Price
All areas	1.06	2.30	1.78	1.39
CAD	1.10	2.54	1.87	1.42
CST	1.12	2.21	1.77	1.30
MET	1.05	2.29	1.81	1.55
NCM	0.92	2.32	1.82	1.35
QLI	1.14	2.19	1.59	1.32
RST	1.03	2.59	1.94	1.44
WNY	0.98	1.92	1.55	1.19

- **Estimated number of flights and flight hours by this aircraft in the last 12 months.**

The following table summarizes responses.

Flights & Flight Hours, All Respondents			
Flights		Hours	
In NY	Out NY	In NY	Out NY
51.1	38.4	76.8	77.4

Flights & Flight Hours by Region				
REGION	Flights		Hours	
	In NY	Out NY	In NY	Out NY
CAD	38.6	20.1	59.2	46.7
CST	43.4	16.7	54.9	37.0
MET	36.2	41.5	54.3	79.6
NCM	35.7	37.1	48.7	51.3
QLI	43.1	32.2	72.0	59.3
RST	61.7	13.0	74.6	37.7
WNY	48.1	22.3	73.4	45.0

The greater number of flights within the state is somewhat expected but the lack of disparity in hours flown in-state vs. out-of-state seems to support development of strategies from a tourism or government perspective to enhance destination marketing for aviation related destinations within the state.

The purpose of the graphic presentation on flights and hours data is to depict the operational characteristics differences between the regions as these will be reflected in development of market strategies and tactics. Specifically, fuel purchase programs and such can be tailored to operators with a more even ratio of in-state vs. out of state.

- **How many minutes do you drive to the airport where your aircraft is based?**

The specific average number of minutes across the group was 23.8, which is in keeping with a median response of 20. The longest drive reported was 90 minutes and several reported “0” with a comment such as "I walk to my plane." or "I’m at a private strip." From a strategic perspective, this data supports the notion of local marketing as a significant concern for airport operators in the development of marketing plans as aircraft owners appear clustered fairly closely to airport facilities.

- **What were your three most frequent destinations in NYS during the last 12 months?**

Respondents listed 182 different destinations; the top 10 are summarized in the following tables:

Location	Name	Day trips		Location		O/N trips
44N	Randall	432		SLK	Saranac Lake	219
IBI	Hudson Columbia	425		ALB	Albany	188
FRG	Farmingdale	417		ART	Watertown	80
H43	Haverstraw (heliport)	400		HTO	East Hampton	58
POU	Poughkeepsie	332		SYR	Syracuse	45
DSV	Dansville	328		N17	Tri Cities	32
4G2	Hamburg	280		ROC	Rochester	29
FOK	Gabreski (Westhampton)	255		HPN	White Plains	28
FZY	Oswego	232		4B6	Ticonderoga	20
ALB	Albany	231		NY01	Maxson (Alexandria Bay)	20

Observation: The strategy to be developed from this portion of the data relates to defining the profile of the successful attributes of some of these airports and the role of the field as opposed to local business, attractions or other activities in developing and supporting traffic. Additional areas of investigation include defining how locales, activities, services and marketing are integrated at these fields.

- **If your aircraft is based outside of NYS, how many times did you fly over NYS airspace last year?**

The 125 non-NY respondents made 4,877 flights over NYS airspace in the previous 12 months for an average of 39 each.

Observation: The data indicate a market opportunity in that each flight by a non-NY based aircraft represents a fuel, service or tourism sale opportunity. Though seasonal data were not collected, it is safe to assume a reasonable frequency of travel with an average of 39 trips. This data has strategic implication in the development of marketing plans as the role of airports in local tourism spending is communicated. Though an obvious connection exists between airports and tourism, the true role of airports may not be fully understood by local policy decision makers and the general public.

- **What percentage of hours flown last year apply to each category?**

The following table summarizes responses across the survey.

2.04%	Public Use
3.00%	Corporate/Executive
71.02%	Personal/Recreational
9.56%	Business Transportation
6.96%	Instructional
2.18%	Aerial Application
1.06%	Aerial Observation
0.82%	External Load
0.14%	Other Work Use
0.57%	Sightseeing/Air Tours
0.30%	Commuter
0.30%	Air Taxi
2.04%	Other

Observation: 25% is business usage in transportation, instruction, applications, sightseeing, etc., 75% recreational. It is significant to note that among these respondents ¼ of usage is directly related to business activities. Airport operators may need to evaluate the role of their airport in the business and economic sector of local economies and identify their specific impact in that sector vs. tourism and or recreation. This local evaluation will have important market planning significance.

Average Percentage of Use by Category Reported by Region							
Region	CAD	CST	MET	NCM	QLI	RST	WNY
Public		50.0	20.0		10.0	50.0	
Corporate		5.0	60.0		90.0	5.0	
Personal	71.3	66.0	73.6	82.9	61.7	79.9	95.0
Business	45.0	38.0	12.0	12.5	36.0	22.0	15.0
Instruction	5.5	25.0	30.3	23.8	61.7	7.0	5.0
Aerial Appl.	27.5	10.0	35.0			12.5	
Aerial Observ.	10.0		14.5		10.0	19.0	
External Load			30.0			30.0	
Other Work			5.0			5.0	
Sightseeing	5.0	10.0	4.0		2.0	6.3	
Commuter			11.0			11.0	
Air Taxi			10.0		1.0	10.0	
Other	27.5		20.0		5.0	35.0	

Active General Aviation Aircraft Total Hours Flown By Use (000's)				
Use Category	1996	1995	1994	1993
Public	1,021	N/A	N/A	N/A
Corporate	2,718	2,869	2,486	2,653
Business	3,152	3,191	3,012	3,350
Personal	8,893	9,320	8,248	8,202
Instructional	4,425	4,106	4,382	4,626
Aerial Application	1,787	1,557	1,364	1,283
Aerial Observation	1,036	1,385	1,746	1,627
External Load	203	118	135	83
Other Work	262	268	241	180
Sight Seeing	186	206	309	325
Air Tours	70	155	N/A	N/A
Air Taxi	1,703	1,372	1,545	1,334
Other	644	1,121	622	603
Sub Total	26,100	25,667	24,092	24,455

- **How important is your aircraft to your business?**

The average score across this group of respondents was 3.42, which falls midway between *Useful* and *Occasionally Useful*.

The table following question 18 summarizes the regional responses, which are fairly consistent with the overall survey.

- **How important is a general aviation airport to your business?**

The average score across this group of respondents was 2.88 which falls between *Necessary* and *Useful*

Summary of Aircraft/Airport Importance by Region		
Region	Q17	Q18
CAD	3.36	2.84
CST	3.47	2.95
MET	3.43	2.95
NCM	3.70	3.25
QLI	3.34	2.82
RST	3.31	2.52
WNY	3.45	2.98

The National Business Aviation Association estimates that general aviation is a \$17-billion industry, generating more than \$51 billion annually in economic activity. For many regions of New York State, general aviation is the only form of air travel available to business.

Business aircraft are utilized by all types of people and companies, from individuals who often fly rented, single-engine, piston-powered airplanes, to sales or management teams from the largest multinational corporations, many of which own fleets of multi-engine, turbine-powered aircraft and employ their own flight crews, maintenance technicians and other aviation support personnel. The popularity of business aircraft has increased as more companies realize the efficiency and productivity of this powerful business tool.

The number of flight departments in the United States has grown nearly 25% from 6,747 in 1993 to 8,236 in 1998. Of the 8200 business aircraft operators in this country, most do not operate fleets of aircraft. Nearly 85% of the companies operating turbine-powered airplanes in the United

States fly only one aircraft, with only a small percentage of large multinational corporations operating what might be characterized as a fleet.

- **Optional Contact.**

356 of 920 or 38.7% of respondents listed one or more forms of additional contact information.

Observation: This is a surprisingly high percentage of respondents interested in additional contact.

Generally, this is reflective of a market population with a high degree of interest, commitment and, thus, sales growth potential.