



OAKLAND  
COMMUNITY  
COLLEGE

## **Program Needs Assessment Aviation Report**

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July 2002**

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**PROGRAM ASSESSMENT  
AVIATION**

**INTRODUCTION**

A request was made by the College to evaluate the need for additional Aviation Programs at OCC. An Associate in Applied Science degree in Aviation Management (AVM.AAS) is currently offered by OCC. The following programs are under consideration:

- Aviation: Flight Science Program
- Aviation: Administration and Management Program
- Aviation: Maintenance Technology Program
- Aviation: Powerplant Maintenance Technology Program

A report by OCC's Institutional Research department entitled "Airframe Mechanics Technology Needs Assessment" was completed in October of 1990. This report outlined the reasons that the airframe mechanic associate degree was being considered at that time. Some of the benefits noted included the fact that the American Christian Aviation Institute's (ACAI) program was approved by the FAA (Federal Aviation Administration). It appears that OCC was working in conjunction with this organization to develop this program. The report also noted that the airline mechanics occupations offered much growth potential in the 1990s.

**MAJOR FINDINGS**

- There is little doubt that the terrorist attacks of September 11<sup>th</sup> will affect the aviation industry and its labor market. Quantifying these issues at this point in time is somewhat difficult. In fact, the Bureau of Labor Statistics (BLS) notes that "it is impossible to know how individual occupations and industries will be affected over the next decade [by the terrorist attacks]."
- One forecast by the FAA states that one area affected by the terrorist attacks is demonstrated by the decline in the number of student pilots. The number of students fell 6.6 percent in FY 2001 and is expected to decline further in 2002 and 2003.
- Flight school owners cite that students are most interested in private and commercial piloting, as well as gaining an instrument rating.

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- In the past five years, 63% (n=10) of Detroit-area flight school owners saw an increase in flight school enrollments. However, subsequent to September 11<sup>th</sup>, only 31% (n=7) saw an increase.
- The number of student credit hours in OCC's aviation programs has declined 68% over the past 10 years and 43% over the past 5 years.
- OCC awarded a total of 67 degrees over the past 10 years or roughly 6 degrees per year. In a recent report produced by Institutional Research entitled "OCC Associate Degrees Awarded Ranked by Program Code," OCC's Aviation degrees were reviewed. For the most recent year (2000-01), the Aviation Management Option is ranked 43rd.
- In the Detroit area, employment projections forecast a decline of 2% in job openings for mechanics from 1998 to 2008.
- According to the Michigan Department of Career Development (MDCD), employment of pilots and flight engineers in the Detroit metropolitan area is projected to grow 9.6% from 1998 to 2008.

## THE AVIATION INDUSTRY

It is widely believed that the terrorist attacks of September 11, 2001 had a profound effect on the aviation industry and passenger travel. The Air Transport Association reported that the industry lost \$7 billion in 2001, even with \$5 billion in federal aid.<sup>1</sup> The FAA (Federal Aviation Administration) predicts, however, that the industry will rebound by 2003. Although the industry had experienced declines prior to September 11th due to economic slowdowns, the effects of the attacks on the industry will likely be felt until September 2002. After that time, it is projected that passenger travel will increase by 14%, and then continue to increase by an average of 4.2% a year to reach one billion passengers by 2013. Interestingly, a year ago the FAA predicted that U.S. airlines would be carrying one billion passengers by the year 2010.<sup>2</sup>

Private aviation may be faring better as a result of the attacks. While general aviation has been crippled in the short term, increased interest by businesses in owning an aircraft or traveling by chartered planes has been evident.<sup>3</sup> In addition, sales of charter trips are up 30% since September 11<sup>th</sup> and fractional ownership of business jets is up by 15%.<sup>4</sup>

According to a forecast by the FAA, there are several areas of concern facing the aviation industry in the next two years, all of which are linked to the uncertainty following September 11<sup>th</sup>. One such issue is related to student pilots. The number of student pilots fell 6.6 percent in FY 2001 and is expected to decline further in 2002 and 2003. Although the number of student pilots is expected to grow by 1% annually after 2004, it is not forecast to reach the level attained in 2000 by 2013, the end of the current forecast period.<sup>5</sup>

Another result of the terrorist attacks is evident from the change in background check procedures by the airlines and airports. Prior to September 11<sup>th</sup>, criminal background checks had only been required for airport or airline employees hired after December 2000 and for any employees hired before December 2000 who showed gaps in employment.<sup>6</sup> Since the attacks, every employee with access to secure areas of the nation's airports will be required to undergo a criminal background check. In addition,

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1 "FAA: Air Travel to Rebound Big in 2003." [www.cnn.com/2002/TRAVEL/NEWS/03/12/rec.airline.forecast.ap/index.html](http://www.cnn.com/2002/TRAVEL/NEWS/03/12/rec.airline.forecast.ap/index.html)

2 Ibid.

3 Craver, Martha Lynn. "Steady Comeback for Private Aviation." January 22, 2002.

4 Ibid.

5 "FAA Forecast Continued Drop in Air Traffic This Year, Strong Recovery in 2003." [www.faa.gov/apa/pr/pr.cfm?id=1539](http://www.faa.gov/apa/pr/pr.cfm?id=1539).

6 "FAA Orders Criminal Checks on Airport Workers." [www.cnn.com](http://www.cnn.com); October 17, 2001

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background checks of students at area flight schools emerged as the number one concern among flight school owners.<sup>7</sup>

According to Art Mueller of the Detroit Flight Standards District Office (FSDO), there have been notable effects on the aviation industry as a result of the terrorist attacks and other factors. He cites that the economy and the attacks have resulted in decreased enrollment in flight training. Foreign students are having a difficult time enrolling in flight training due to newly imposed waiting periods for training. He also stated that the current state of the economy has resulted in decreased enrollment. As an example, he noted that United Airlines lost \$1.2 billion last year.<sup>8</sup>

The Flight School and Training Center Requirements Under the Aviation and Transportation Security Act provide insight into the changes in flight school requirements since September 11<sup>th</sup>. Updated on December 17, 2001, Section Four of this act states specific instructions related to security issues. Art Mueller of the Detroit FSDO, states that the primary difference between "flight school" and "training center" is that a training center typically has other training besides flight training.<sup>9</sup> Portions of this act are cited below:

4. AVIATION AND TRANSPORTATION SECURITY ACT. As a result of the terrorist attacks of September 11, 2001, and the subsequent discovery that some of the hijackers engaged in flight training at FAA-certificated schools, portions of a public law enacted by Congress affect the requirements for schools and training centers to maintain their certification.

b. *Flight School Security – Waiting Period.*

- (1) Flight schools and training centers providing training in any aircraft . . . to an alien must notify the Attorney General that the individual has requested such training and provide identification information.
- (2) If no other direction comes from the Attorney General after 45 days, the training may begin after that interval.

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<sup>7</sup> Findings from "Flight School Survey." OCC, Office of Institutional Research, June 2002.

<sup>8</sup> Interview with Art Mueller, Detroit's Flight Standards District Office, August 19, 2002. (724) 487-7222.

<sup>9</sup> Ibid.

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(3) If the Attorney General determines that the individual poses a risk to aviation or national security, the Attorney General will advise the flight school or training center, and the training of that individual must cease upon receipt of that notification.

- c. *Interruption of Training* – If training of an alien has begun after the 45-day waiting period and the Attorney General then determines that the individual now poses a risk to aviation or national security, the Attorney General will notify the flight school or the training center, and the training of that individual must cease upon receipt of that notification.
- e. *Security Awareness Training for Employees.* Flight Schools and training centers will have to conduct security awareness for their flight school employees “to increase their awareness of suspicious circumstances.”

## REGIONAL OUTLOOK

The repercussions of the terrorist attacks can be seen in some of the region's airports as well. Specifically, the slowdown of the economy and the effects of the attacks led to nearly a 16% drop in air traffic at Oakland County International Airport in 2001.<sup>10</sup> This airport is the state's second busiest airport, behind Detroit Metro Airport.<sup>11</sup> Over the past 20 years, 11 airports have closed in southeast Michigan leaving 17 public-use airports in Wayne, Oakland, Macomb and Livingston counties.<sup>12</sup> In addition to Oakland County International Airport, there are two other airports in Oakland County: Oakland Troy Airport and Oakland Southwest Airport. In the past five years two airports have been lost to development: Troy Big Beaver and Spencer Field in Wixom. Each of the existing airports is home to about 150 planes and accommodates single-engine and light twin-engine aircraft.<sup>13</sup> These airports have seen an increase in demand of private and business jets since September 11<sup>th</sup>. At Oakland County International Airport, there are more than 200 planes on a hangar waiting list.<sup>14</sup>

Despite the reduction in traffic in 2001, plans to expand Oakland County International Airport are still underway. Oakland County will spend \$8 million to rebuild eight hangars and add another three.<sup>15</sup> There has been much resistance from the residents living near the airport as they cite the current noise and air pollution as a nuisance. However,

10 Schaller, Hank, "Air Traffic Takes Plunge at County Airport." The Oakland Press, February 19, 2002.

11 Ibid.

12 "As Demand Increases, Private Pilots Find Fewer Places to Land." The Detroit Free Press, April 7, 2002.

13 Lucas, Brian, "Other Airports Ease Flight Load." The Detroit News, January 28, 2001.

14 Tato, Sally, "Turbulence Ahead for Airport Expansion." The Detroit Free Press, March 25, 2002.

15 Chambers, Jennifer, "Oakland Airport Plans Advance Despite Foes." The Detroit News, March 28, 2002.

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the plans are moving forward. In addition to adding more hangars, details include extending a runway and building an enclosure to muffle jet engine noise on the ground. Incidentally, the FAA is giving Oakland County \$3.3 million to make runway improvements and build the engine run-up enclosure.<sup>16</sup>

**MICHIGAN AVIATION PROGRAMS (SEE APPENDIX A)**

The table shown in Appendix A lists flight schools, collegiate aviation programs and aviation maintenance schools in and around the Detroit area. Following are descriptions of the types of schools listed.

*Flight Schools*

According to data from the Michigan Department of Transportation's (MDOT) Bureau of Aeronautics, there are 63 flight schools that are licensed by the state of Michigan. As stated earlier, licensing by the state does not imply that they are FAA-approved. Of these schools, several are located in or near the Detroit area. Only two area flight schools listed are approved by the Federal Aviation Administration. All of the schools listed provide training for private piloting. Only one school (Troy Executive Aviation) does not have the ground school designation. In addition, three schools provide training for pilots to receive the airline transport pilot designation.

*Collegiate Aviation Programs*

The FAA has approved only three collegiate aviation programs: Lansing Community College, Northern Michigan University and Western Michigan University. Colleges in and around Detroit offering flight training and other aviation programs include: Eastern Michigan University (Aviation Management), Macomb Community College (Aviation Maintenance, Ground School), Schoolcraft College (Ground School) and Wayne County Community College (Flight Training, Aviation Maintenance).

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<sup>16</sup> Ibid.



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### *Aviation Maintenance Schools in Michigan*

There are eight universities and schools in Michigan that offer Aviation Maintenance training. Those facilities listed with asterisks denote that their program is certified by the FAA as of August 29, 2001.

- Andrews University\* – Berrien Springs
- Benjamin O. Davis Jr. Aerospace Tech\* – Detroit
- Jackson Community College - Jackson
- Lansing Community College\* – Lansing
- Macomb Community College - Warren
- Michigan Institute of Aeronautics\* – Belleville
- Northern Michigan University\* – Marquette
- School of Missionary Aviation Technology\* – Lowell
- Southwestern Michigan College\* – Dowagiac
- Western Michigan University College of Aviation\* – Battle Creek

### *FAA Approved Flight Schools*

Flight schools can be FAA-approved only if they meet certain criteria implemented by the FAA. There are two classifications within this criteria: (1) Part 141 – provides licensing for the training for small aircraft; and (2) Part 142 – provides licensing for the training of large aircraft. This distinction is important for those schools that are unlicensed as the legal liability in the case of death or injury is assumed by the Certified Flight Instructor (CFI). For those schools that are FAA-approved, the liability is assumed by the flight school.

Another difference between FAA approved and non-FAA approved schools is the length of training required for different certifications.<sup>17</sup> For example, to become a commercial pilot at an FAA-approved facility you need 190 hours of training, compared to non-approved FAA schools where students are required to take 250 hours of training. Also, to be approved, you must adhere to an FAA-approved curriculum. FAA-approval also impacts the structure of personnel employed by the facility, approval of such personnel and other issues. In short, there are very specific requirements.

The FAA documents that outline these differences in detail are: FAR (Federal Aviation Regulation) 61 for non-FAA approved schools and FAR 141 for FAA approved schools. These documents are not found on the FAA website; however, there is information

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<sup>17</sup> Interview with Art Mueller, Detroit's Flight Standards District Office, August 12, 2002. (724) 487-7222.

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about these regulations in the form of a "Question and Answer" document on the website: <http://av-info.faa.gov> under Designee Information.

*State-Licensed Flight Schools*

The State of Michigan outlines specific rules for flight schools to be licensed. The cost for obtaining a license is \$25 for the first license and \$10 to renew annually. When asked how licensing differs from FAA approval, Tom Krashen of Michigan's Department of Aeronautics said that licensing by the state deals more with facilities issues whereas FAA approval deals with a very specific teaching curriculum. He also states that state required background checks are becoming a major issue to flight schools since they pay a minimum of \$54 for each student. The Bureau of Aeronautics did not agree with this ruling, but this requirement was passed along with other new antiterrorism legislation.

## FLIGHT SCHOOLS SURVEY

A telephone survey was conducted with area flight schools. A copy of this survey can be found in the Appendix. The objectives of this survey were to:

- Understand the types of training that are most requested by students, along with the number of students taking each type of training annually.
- Determine trends in enrollment; since the terrorist attacks and over the past five years.
- Learn of other issues pertinent to flight schools.

A total of 24 respondents completed the survey. To increase the sample size, several flight schools were contacted outside of Wayne, Oakland and Macomb counties. The following counties were included in this analysis:

Table 2

County	Number of Respondents
Oakland	5
Wayne	5
Washtenaw	3
Macomb	2
Livingston	2
St. Clair	2
Monroe	2
Genesee	1
Lapeer	1
Huron	1

It is important to note that obtaining a current listing of flight schools in Michigan proved to be a challenge. The data listed on MDOT's website was last updated on December 28, 1999. However, after contacting the Bureau of Aeronautics, they were able to provide a more up-to-date list via fax, and admitted that their website is not current. Other sources that were also reviewed in an effort to obtain current information included:

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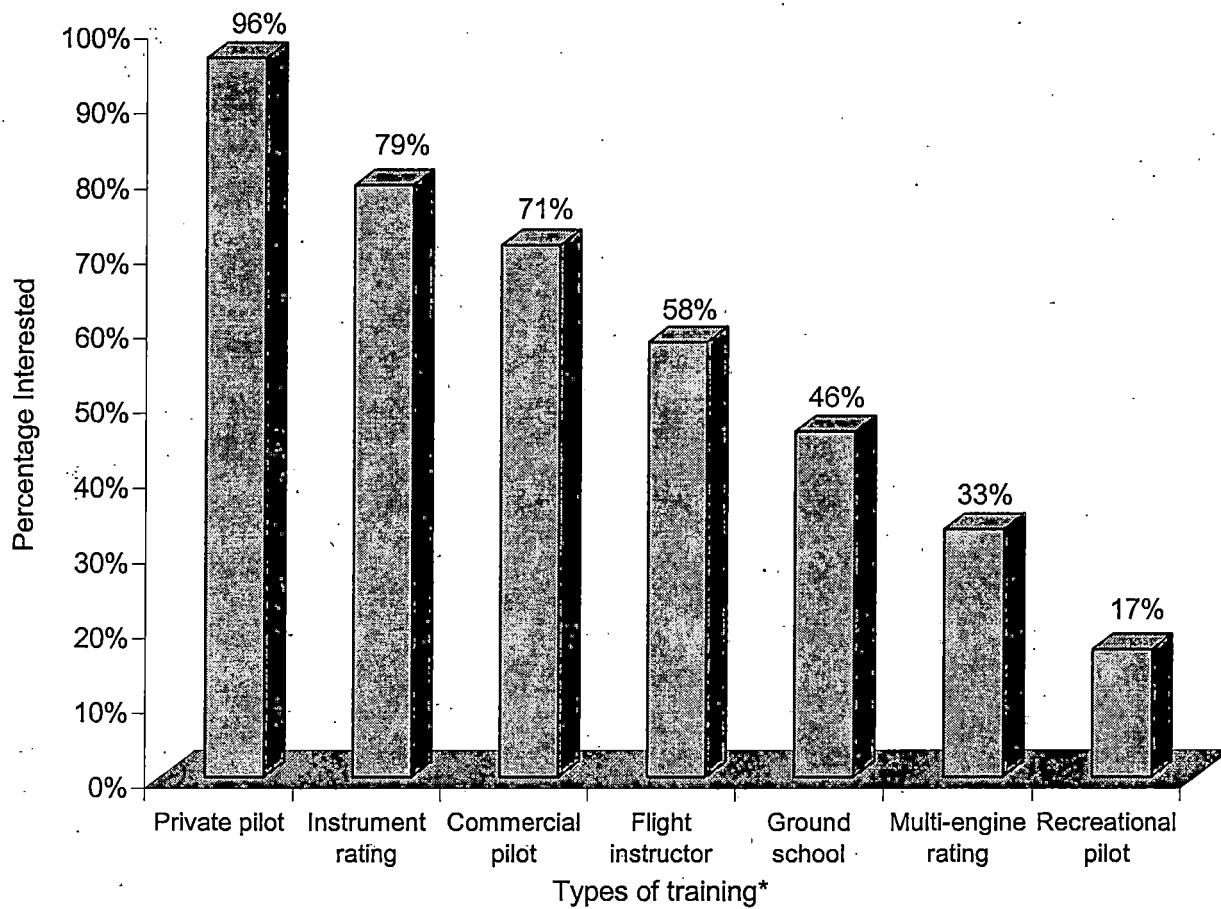
- [www.faa.gov](http://www.faa.gov) - This website provide names of only FAA-approved schools of which only two are in our immediate area: American Flight & Technology and Tradewinds Aviation.
- [www.aopa.org](http://www.aopa.org) - This website, from the Aircraft Owners and Pilots Association, provides information about many topics related to aviation.
- [Market database](#) – This database provided only nine names of flight schools within six counties in the metro Detroit area.

*Findings*

Respondents were asked about the types of training in which students are most interested. Specifically, the question asked was:

**Figure 1**

*"Thinking over the past few years, in which types of training are your students most interested?"*



As evident from this chart, students are most interested in private piloting and least interested in recreational piloting.

\*Types of training and certification<sup>18</sup>:

*Private pilot:* Usually the first certificate people receive with a minimum requirement of 40 hours of training. This license will allow you to fly anywhere in the country under Visual Flight Rules. Requires Third-Class Medical Certificate.

*Recreational pilot:* Has many of the same privileges of a private pilot, but has many limitations and restrictions that limit its utility. Requires Third-Class Medical Certificate.

*Instrument rating:* This rating is added to an existing pilot certificate; it is not an independent pilot certificate. Instrument training allows the pilot to maneuver the aircraft solely by reference to flight and navigation instrument, allowing pilots to fly under poorer weather conditions. Without this rating, a commercial pilots passenger-carrying privileges are restricted.

*Commercial pilot:* This certificate allows the pilot to fly and carry passengers for compensation or hire. Quite a bit of flight experience and/or an Airline Transport Rating is generally needed for most paying pilot positions. Requires Second-Class Medical Certificate.

*Multi-engine rating:* After completing a private pilot certificate, a multi-engine rating can be added which allows a pilot to fly an aircraft with more than one engine.

*Medical Certification:* There are three classes of certification. First Class is the most stringent and required to be an Airline Transport Pilot. Second Class is required for Commercial certificates and Third Class for Private pilots. The differences are quite small and mainly concern visual acuity.

*Student pilot:* A student pilot certificate and medical certificate must be issued prior to an individual's solo flight. It must be issued by an FAA-authorized medical examiner upon successful completion of a physical exam.

*Air transport rating:* This rating is dependant on type of aircraft. It is administered by the FAA and is used primarily when an individual becomes an airline pilot, as many airlines require this rating for insurance purposes.

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<sup>18</sup> Data taken from the Michigan Flyers website. <http://mcarr.eecs.umich.edu/umflyers/meds.htm> and [/license.htm](#).

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When asked about the number of students who complete their training annually, respondents seemed unable or unwilling to provide specific information. For this reason, the following information is provided as a general overview:

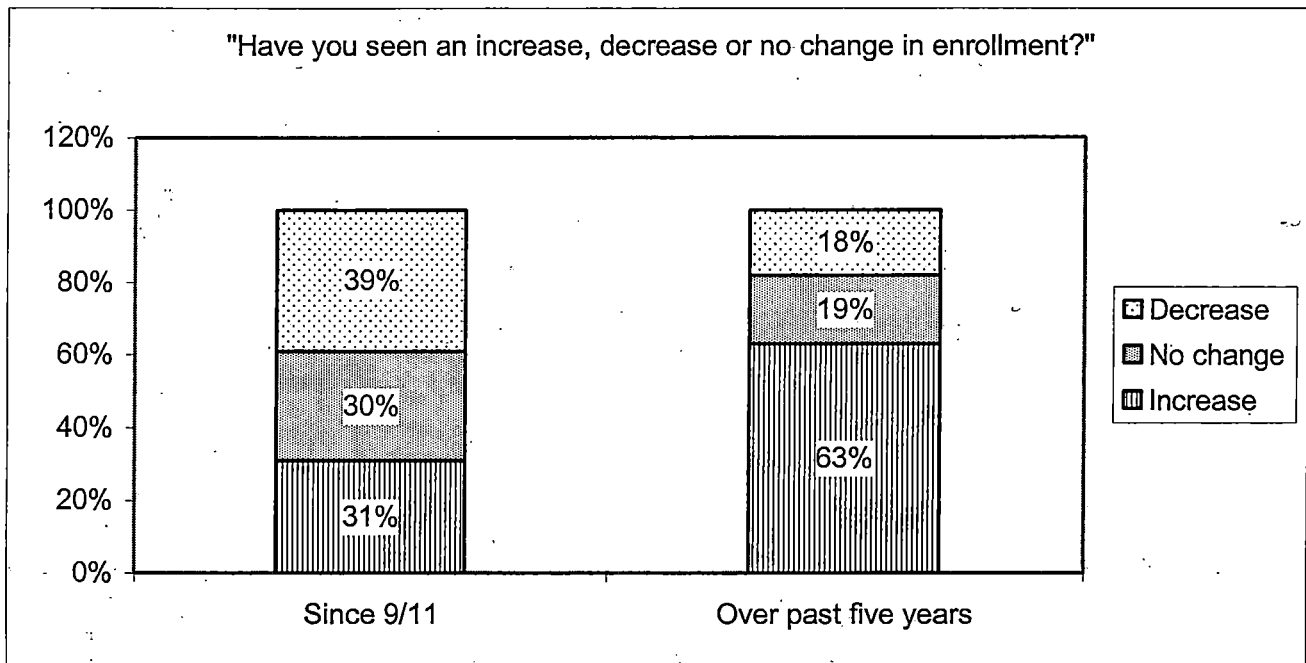
- Recreational pilot - Only two respondents answered, their responses were one and five.
- Flight instructor - There were seven responses varying from 2 to 100 (other numbers given were 3, 4, 8, 10, 20).
- Private pilot - Thirteen responses were given ranging from 5 to 150. The mean number of private pilots is 35.
- Commercial pilot - Six responses from two to six.
- Multi-engine rating - Four responses given, mean number of eight.
- Instrument rating - Of nine figures given, mean number is 19
- Ground school - The respondents cited numbers from 15 to 75, with a mean of 34.

Respondents were asked what percentage of students in the past year could be considered hobbyists. Responses ranged from 20% to 100%, with a mean of 67%.

### Enrollment Trends

Respondents were asked about enrollment trends since September 11<sup>th</sup> as well as 5-year trends before that date.

Figure 2



As illustrated in this graph, the percent citing an increase in enrollment dropped 32 percentage points since September 11<sup>th</sup>. Similarly, those citing a decrease in enrollment grew from 18% in the past 5 years to 39% after the terrorist attacks.

After answering each of these questions, respondents were asked to rate the percentage of a given increase or decrease. Most respondents were, again, unable or unwilling to give specific percentages. No more than four respondents were able to provide information about each question and its related increase or decrease. Due to this low sample size, it is impractical to provide this information as a generalization.



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### *Competitors*

When asked who they considered to be their main competitors, the answers were varied and spread throughout the Detroit and surrounding areas. Three schools cited Tradewinds Aviation in Pontiac as their major competitor. Two specific universities were cited as well: Western Michigan University in Kalamazoo and Embry Riddle University in Warren.

A key factor, as evidenced by a large number of responses given, is the fact that flight school owners see their competitors as those who are geographically close to their facility. This is particularly true for flight schools in Ann Arbor and Pontiac. When respondents did not give a specific answer, some of the general comments included:

- "Mom and Pop" schools
- All flight schools at Oakland County International Airport
- Everyone else around
- Local universities
- Schools within a 50-mile radius

### *Open End Remarks*

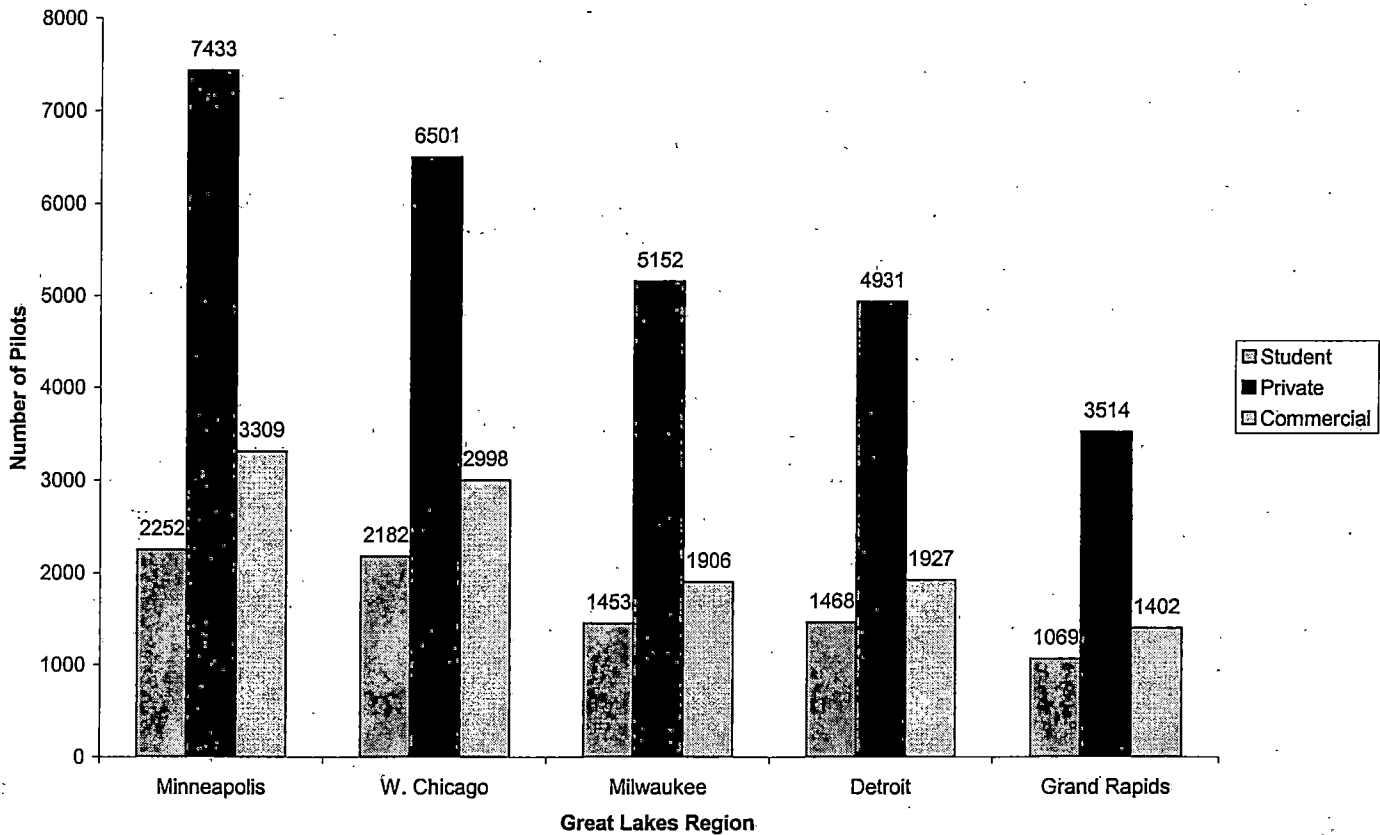
Respondents were asked the following question: "Since September 11<sup>th</sup>, are there any specific issues that you have had to address?" The majority of respondents cited background checks as the most important issue. Other issues mentioned include drug testing and security issues. A copy of these comments in their entirety can be found in Appendix B.

**CERTIFICATE TRENDS**

Figure 3 represents the number of pilots by type in the Great Lakes District, as outlined on the Federal Aviation Administration's registry.

**Figure 3**

Active Pilots - Detroit Versus Select Cities\* by Type of Pilot

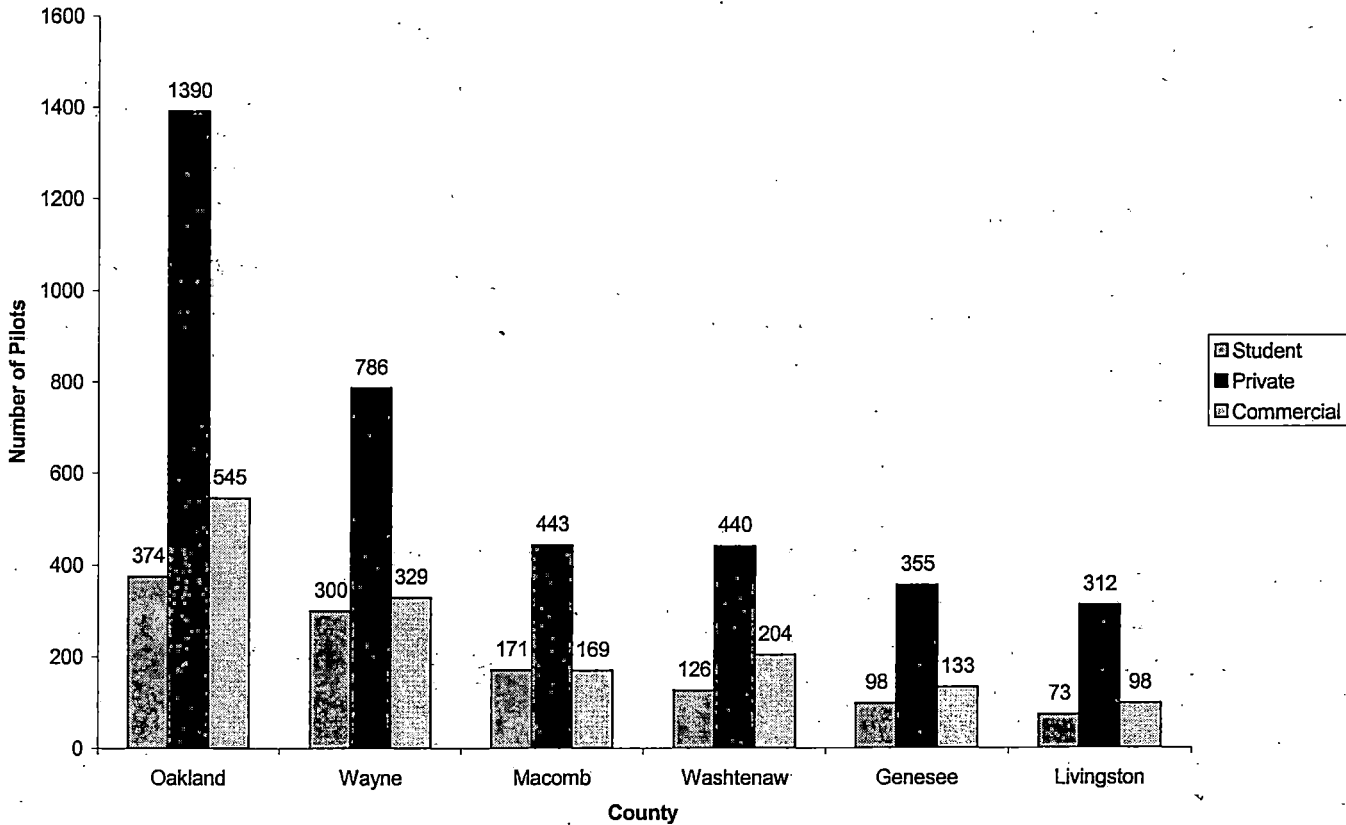


\* Partial list excerpted from table "Active Pilots Summary - Last Updated 6/1/02", Great Lakes District; [www.registry.faa.gov/](http://www.registry.faa.gov/)

This chart demonstrates that Minneapolis, West Chicago and Milwaukee each have more private pilots than Detroit. The variances are not as distinct among the numbers of student and commercial pilots.

Figure 4

Active Pilots by County and Type - SE Michigan\*

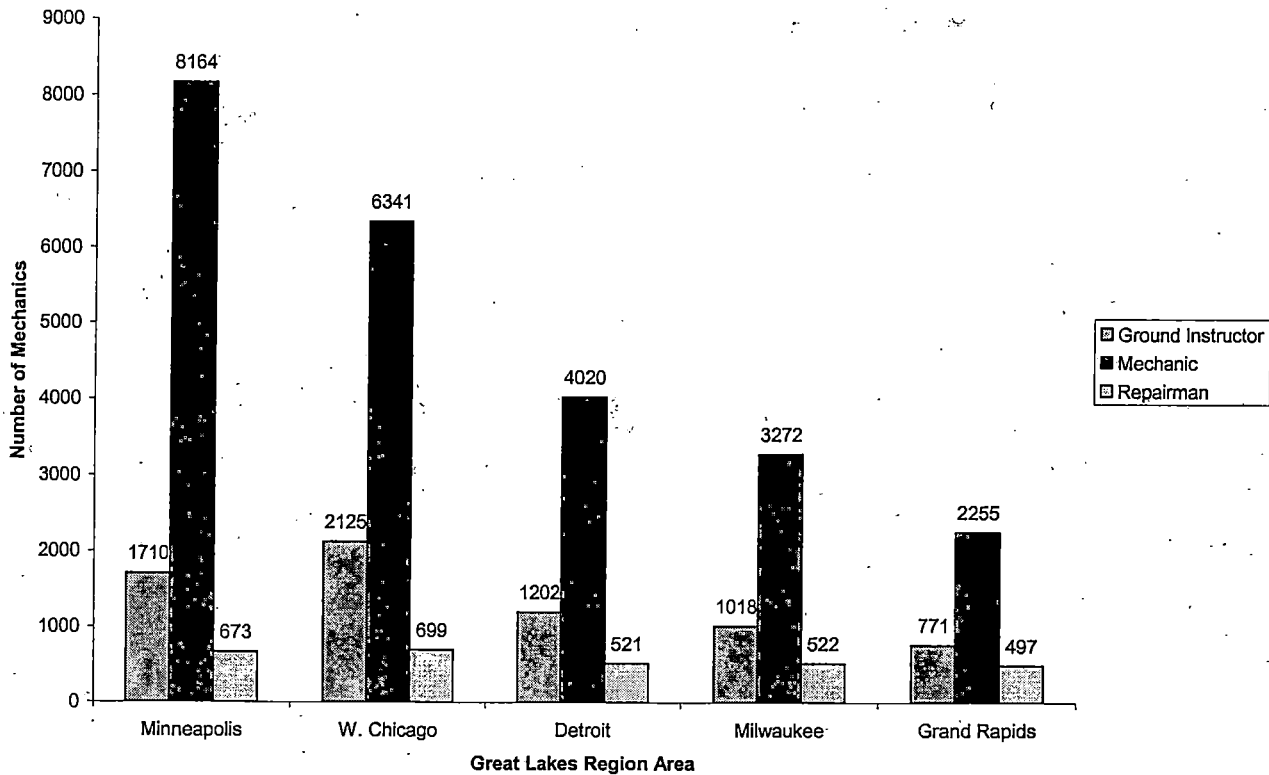


\* Partial list excerpted from table "Active Pilots by County - Last Updated 6/1/02", Great Lakes District; [www.registry.faa.gov/](http://www.registry.faa.gov/)

Figure 4 illustrates the number of pilots by county and type in Southeast Michigan. As expected, those counties with the most pilots overall are Oakland, Wayne and Macomb. Oakland County has 49% more pilots overall than Wayne County.

Figure 5

Active Nonairmen - Detroit Versus Select Cities by Type\*

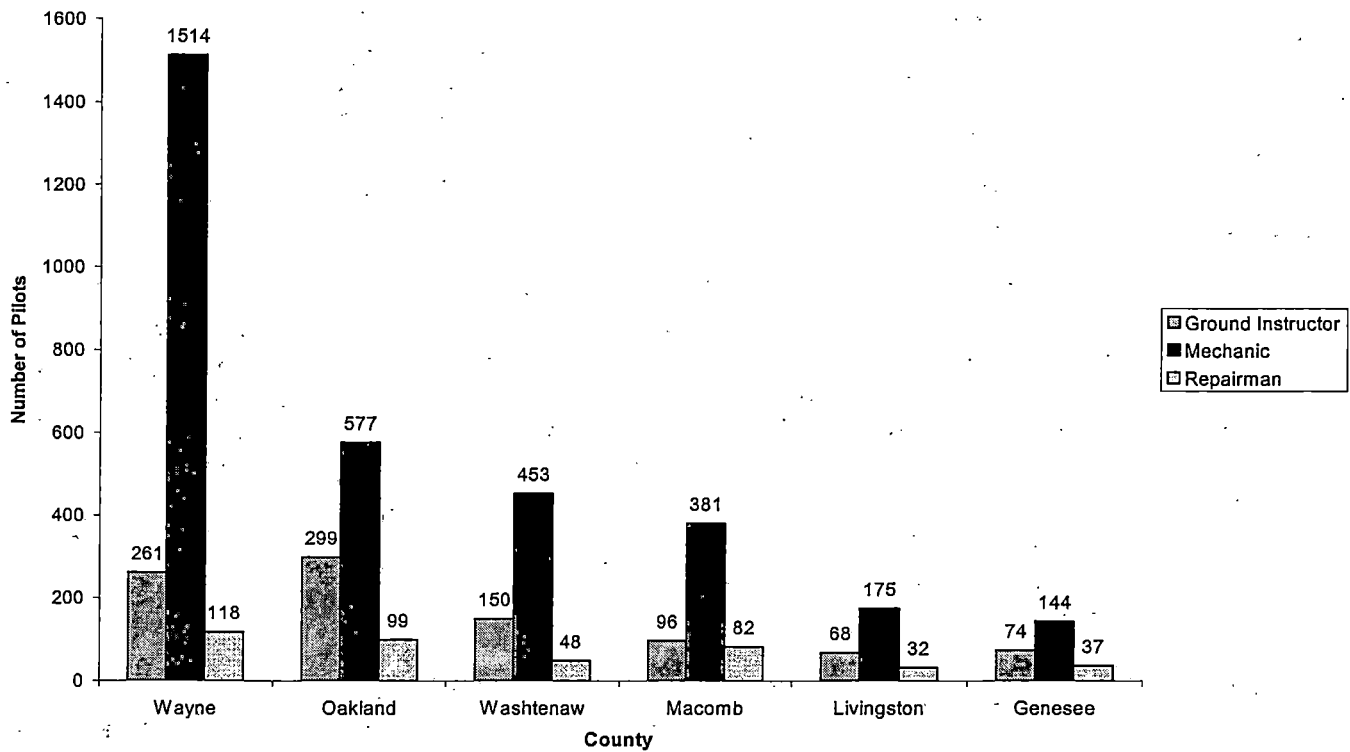


\* Partial list excerpted from table "Active Nonairmen Summary - Last Updated 6/1/02", Great Lakes District; [www.registry.faa.gov/](http://www.registry.faa.gov/)

The data represented in Figure 5 shows that there are far more airline mechanics than ground instructors and repairmen in the Great Lakes Region. This data reflects similar trends for the rest of the country. Among these cities, Minneapolis has the most active nonairmen (consisting largely of mechanics), while Grand Rapids has the least.

Figure 6

Active Nonairmen by County and Type - SE Michigan\*



\* Data taken from FAA website, www.faa.gov.

Wayne County has two and one-half times more mechanics as Oakland County, which is followed closely by Washtenaw County. Livingston and Genesee County have smaller numbers of each type of nonairmen.

Figures 7 through 12 show trends (1997, 1999, 2002) of airmen and nonairmen for Oakland, Wayne and Macomb counties. In figures 7 through 9, it is interesting to note that each county's data show somewhat steady or declining numbers for student and private pilots, while commercial pilots remained steady or saw slight increases. The trends for nonairmen provide interesting trends as well. The number of mechanics in each county saw slight or noteworthy decreases (Wayne county dropped 12% from 1999 to 2002), while ground instructor ratings stayed relatively stable. There was slight variation in numbers among repairmen.

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CERTIFICATE TRENDS OVER TIME – AIRMEN (FIGURES 7-9)

Figure 7

Oakland County Active Airmen - 1997 versus 2002

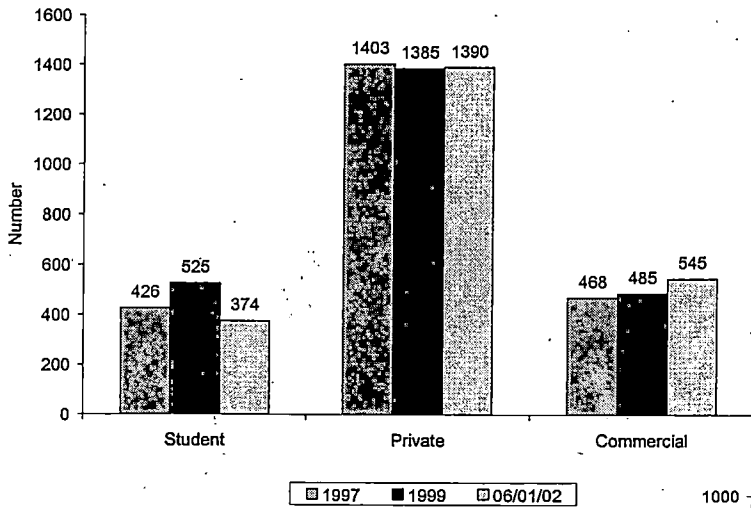


Figure 8

Wayne County Active Airmen - 1997 versus 2002

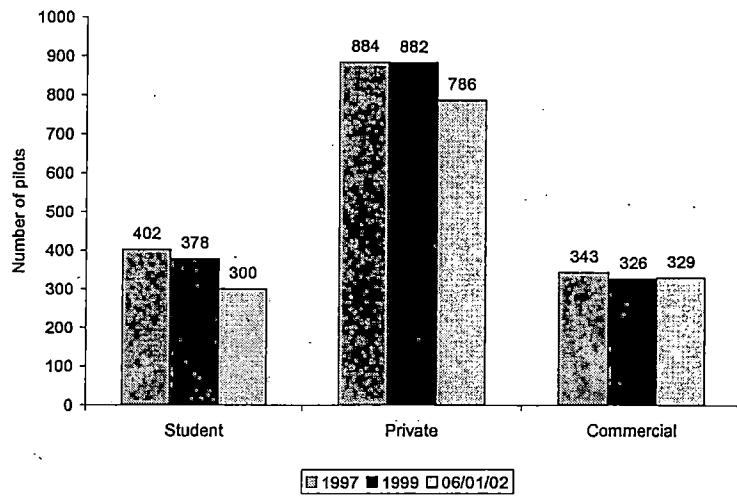
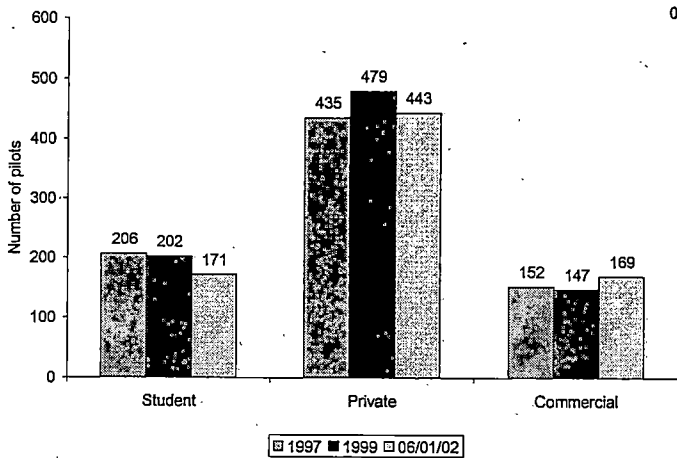


Figure 9

Macomb County Active Airmen - 1998 versus 2002



**CERTIFICATE TRENDS OVER TIME – NONAIRMEN (FIGURES 10-12)**

Figure 10

Oakland County Active Nonairmen - 1997 versus 2002

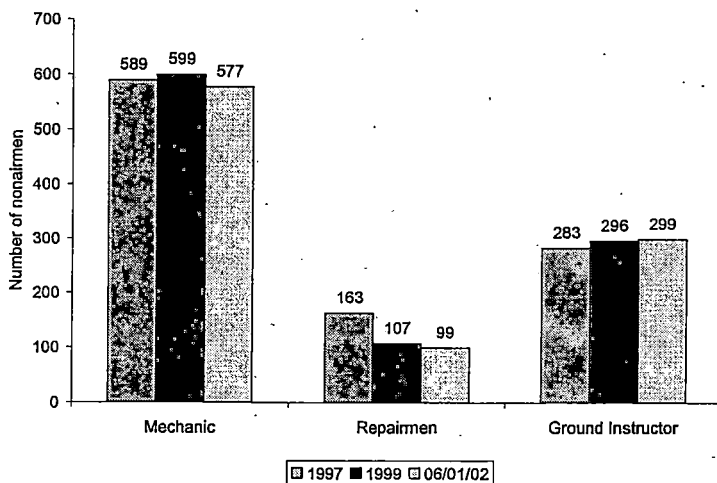


Figure 11

Wayne County Active Nonairmen - 1997 versus 2002

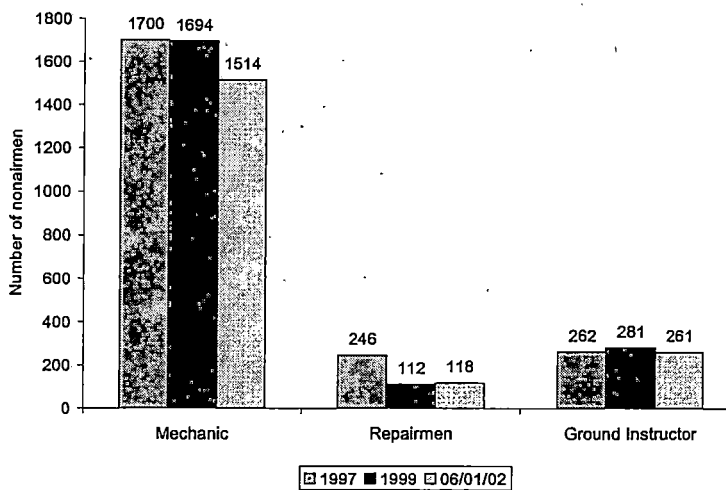
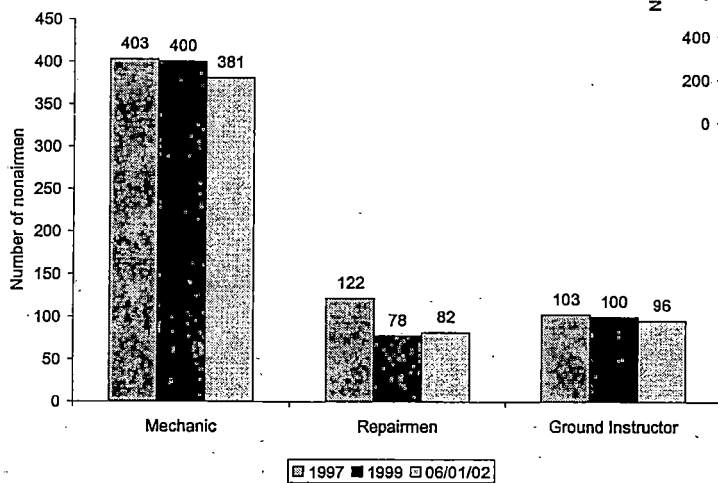


Figure 12

Macomb County Active Nonairmen - 1997 versus 2002



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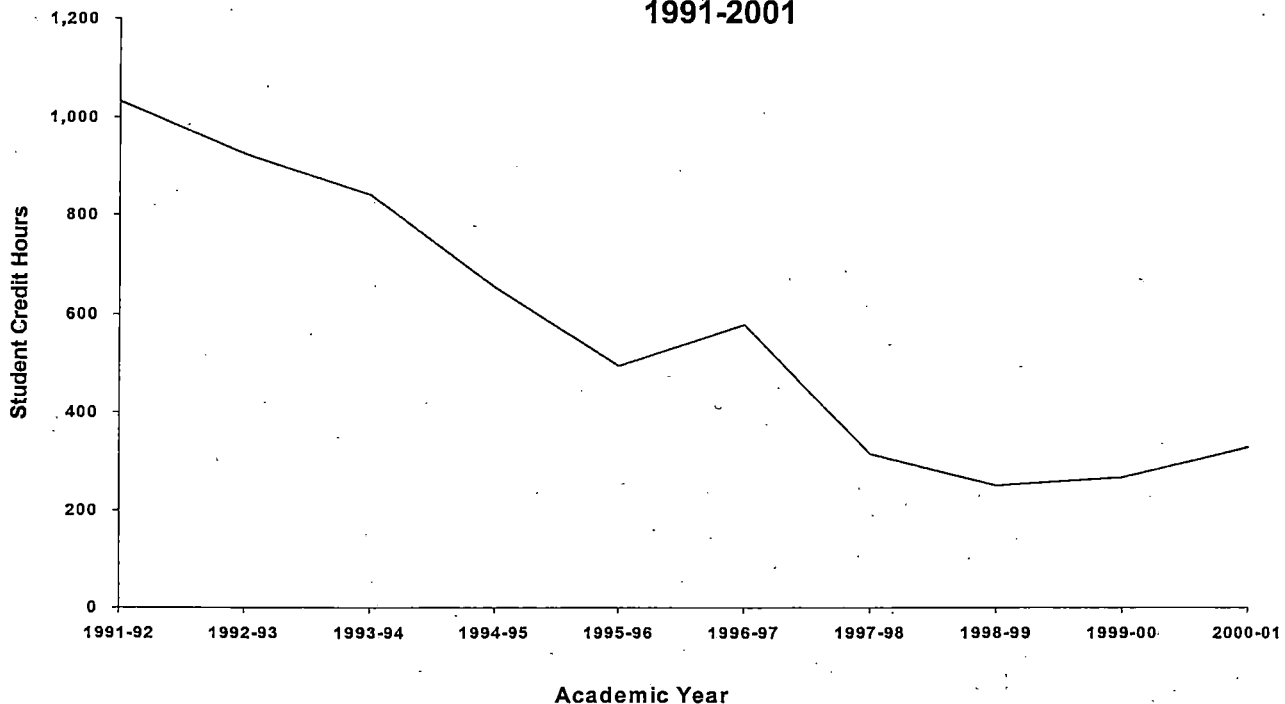
**TABLE 2 - CREDIT HOUR TRENDS - OCC**

	1991-92 SCH	1992-93 SCH	1993-94 SCH	1994-95 SCH	1995-96 SCH	1996-97 SCH	1997-98 SCH	1998-99 SCH	1999-00 SCH	2000-01 SCH
Aviation Flight Technology	1,032	923	841	653	495	578	313	251	266	328
College Wide Totals	532,100	528,686	501,553	471,593	451,159	443,471	431,421	440,448	438,997	453,054

	5-Year % Change	10-Year % Change
Aviation Flight Tech	-43.3	-68.2
College Wide Totals	2.2	-14.9

An analysis of credit hour trends at OCC for the Aviation programs over the last 10 years shows an overall decline. It is interesting to note that the latest credit hour trend (2000-01) represents a slight increase since 1998-99. The 10-year change of 68.2% shows a significant decrease in credit hours. It is difficult to predict how the terrorist attacks of September 11<sup>th</sup> will impact future enrollment for this program.

**FIGURE 13 – AVIATION STUDENT  
CREDIT HOURS  
1991-2001**





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**TABLE 3 - DEGREE TRENDS - OCC**

Academic Year	AVF – Aviation Flight Technology	AVM – Aviation Management	AVT – Aviation Maintenance Technology	AVN – Aviation Management Option
1991-92	12	0	0	2
1992-93	6	0	0	6
1993-94	6	0	0	3
1994-95	3	0	0	0
1995-96	3	0	0	3
1996-97	3	0	0	3
1997-98	2	0	1	2
1998-99	2	1	1	1
1999-00	0	2	1	0
2000-01	1	1	0	2
<b>TOTALS</b>	<b>38</b>	<b>4</b>	<b>3</b>	<b>22</b>

The total number of degrees in aviation-related programs awarded at OCC over the last ten years is 67, which averages to a little over six degrees per year. The two most active programs during that time period were Aviation Flight Technology and the Aviation Management Option.

In a recent report produced by Institutional Research entitled "OCC Associate Degrees Awarded Ranked by Program Code," OCC's Aviation degrees were reviewed. For the most recent year (2000-01), the Aviation Management Option is ranked 43rd. Programs found later in the listing are Aviation Flight Technology (52nd), Aviation Management (52nd) and Aviation Maintenance Technology (68th).

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**TABLE 4 - DEGREE TRENDS – MICHIGAN COMMUNITY COLLEGES**

<b>Number of Aviation Degrees Awarded at Michigan Community Colleges – 1998 - 2001</b>				
<b>Aviation Flight Technology – CIP Code 49.0102</b>				
	<b>2000-01</b>	<b>1999-00</b>	<b>1998-99</b>	<b>Totals</b>
<b>Jackson CC</b>	1	1	1*	3
<b>Lansing CC</b>	5	2	8	15
<b>Northwestern Michigan</b>	11	9	6	29
<b>Oakland CC</b>	1	0	2	3
<b>Aviation Maintenance/Mechanics – CIP Code 47.0607</b>				
	<b>2000-01</b>	<b>1999-00</b>	<b>1998-99</b>	<b>Totals</b>
<b>Jackson CC</b>	1	0	0	1
<b>Lansing CC</b>	4	2	0	6
<b>Macomb CC</b>	1	1	0	2
<b>Oakland CC</b>	0	0	0	0
<b>Southwestern Michigan</b>	9	5	3	17
<b>Wayne County CC</b>	2	2	0	4
<b>Aviation Management – CIP Code 47.0608</b>				
	<b>2000-01</b>	<b>1999-00</b>	<b>1998-99</b>	<b>Totals</b>
<b>Lansing CC</b>	3	2	0	5
<b>Oakland CC</b>	2	0	1	4
<b>Aviation Maintenance Tech Option – CIP Code 47.0609</b>				
	<b>2000-01</b>	<b>1999-00</b>	<b>1998-99</b>	<b>Totals</b>
<b>Lansing CC</b>	3	7	4	14
<b>Oakland CC</b>	0	1	1	2
<b>Aviation Management Option – CIP Code 49.0104</b>				
	<b>2000-01</b>	<b>1999-00</b>	<b>1998-99</b>	<b>Totals</b>
<b>Oakland CC</b>	1	2	1	4

\* Previous data reported on the MCCNet website reported that Jackson Community College graduated 105 students in the Aviation Flight Technology program in 1998-99. After further research, Jackson's Institutional Research department noted that this was reported in error; there was only one graduate that year.

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Many of the Michigan Community Colleges offer Aviation Maintenance/Mechanics programs to their students. OCC is the only college with graduates in the Aviation Management Option program at this time.

### THE LABOR MARKET

The effects of the terrorist attacks will likely effect the future labor market of the aviation industry. The Bureau of Labor Statistics (BLS) reported that following a three percent decline in October [2001], employment in the air transportation industry fell another four percent in November and employment in transportation services fell three percent in November.<sup>19</sup> Other factual data about the effects on the aviation labor market since September 11<sup>th</sup> are somewhat difficult to identify.

The BLS prefaced their latest employment projections (Winter 2001-02 and paraphrased in Spring 2002) with the following verbiage:

The BLS projections presented in this issue were completed prior to the tragic events of September 11. The events of that day had an immediate economic impact, but the nature and severity of long-term effects remain unclear . . . It is impossible to know how individual occupations and industries may be affected over the next decade. BLS will continue to review its projections and, as the long-term consequences of September 11 become clearer, will incorporate the aftereffects in later releases of the occupation and industrial outlooks.

Prior to September 11<sup>th</sup>, it was reported that the Aviation Support Services Market (airplane maintenance, airplane service, etc.) will grow significantly over the over the next 20 years. One source stated that over the next 20 years, the service market will grow from the current size of \$95 billion to over \$226 billion per year.<sup>20</sup> Nearly half of this market will be comprised of airplane maintenance, repair and overhaul (MR&O) activities, which includes airframe heavy maintenance, engine repair and overhaul and non-engine component overhaul and repair.<sup>21</sup>

### OCCUPATIONAL OUTLOOK

According to the BLS, there are two general classifications for professionals working in this field: (1) Aircraft and Avionics Equipment Mechanics and Service Technicians; and

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<sup>19</sup> BTS (Bureau of Transportation Statistics) – Fact of the Day. [www.bts.gov/FOTD/archive0201.html](http://www.bts.gov/FOTD/archive0201.html)

<sup>20</sup> "Current Market Outlook 2001 – The Forecast." [www.boeing.com](http://www.boeing.com), Internet research conducted on 3/27/02.

<sup>21</sup> Ibid.

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(2) Aircraft Pilots and Flight Engineers. It is important to note that the information from the Occupational Outlook Handbook was compiled prior to September 11, 2001.

AIRCRAFT AND AVIONICS EQUIPMENT MECHANICS AND SERVICE TECHNICIANS

*DESCRIPTION OF THE OCCUPATION*

To keep aircraft in working condition, these professionals perform scheduled maintenance, make repairs, and complete inspections required by the FAA. Aircraft mechanics are also referred to as airframe, powerplant, and avionics aviation maintenance technicians. Some mechanics work on one or many different types of aircraft, such as jets, propeller-driven airplanes, and helicopters. Others specialize in one section of a particular type of aircraft, such as the engine, hydraulics, or electrical system. Avionics are now an integral part of aircraft design. Avionics technicians repair and maintain components used in aircraft navigation and radio communications, weather radar systems, and other instruments and computers.<sup>22</sup>

*EMPLOYMENT*

Aircraft mechanics and service technicians held about 173,000 jobs in 2000, fewer than 10% were avionic technicians. About two-thirds worked for airlines or airports and flying fields, 12% worked for the Federal Government and 9% worked for aircraft assembly firms.<sup>23</sup>

*TRAINING, QUALIFICATIONS, ADVANCEMENT*

The majority of aircraft mechanics are certified by the FAA as "airframe mechanic," "powerplant mechanic," or "avionics repair specialist." The FAA requires at least 18 months of work experience for an airframe, powerplant, or avionics repairer's certificate. Although few people become mechanics through on-the-job training, most learn their job in one of 200 FAA-certified trade schools. One-third of these schools award two- and four-year degrees in avionics, aviation technology or aviation maintenance management.<sup>24</sup>

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22 Occupational Outlook Handbook 2000, Bureau of Labor Statistics, Aircraft and Avionics Equipment Mechanics and Service Technicians.

23 Occupational Outlook Handbook 2000, Bureau of Labor Statistics, Aircraft and Avionics Equipment Mechanics and Service Technicians.

24 Ibid.

AIRCRAFT AND AVIONICS EQUIPMENT MECHANICS AND SERVICE TECHNICIANS (CONTINUED)

*JOB OUTLOOK / SALARIES*

The outlook for aircraft and avionics equipment mechanics and service technicians should be favorable over the next 10 years. Employment is expected to increase about as fast as the average for all occupations through the year 2010 (10 to 20 percent). In the Detroit area, employment projections forecast a decline of 2% in job openings for mechanics from 1998 to 2008.<sup>25</sup> Nationally, median earnings for aircraft mechanics and service technicians were about \$19.50 per hour in 2000.<sup>26</sup> The median hourly rate for avionics technicians was about \$19.86. The median annual salary for aircraft mechanics in the Detroit area was \$43,620, compared to a median national salary listed by this source as \$39,726.<sup>27</sup>

AIRCRAFT PILOTS AND FLIGHT ENGINEERS

*DESCRIPTION OF THE OCCUPATION*

Pilots are highly trained professionals who fly airplanes and helicopters to carry out a wide variety of tasks. Four out of five are airline pilots, copilots and flight engineers, while one-fifth of those in this field are commercial pilots who are involved in more unusual tasks, such as dusting crops, testing aircraft, etc.<sup>28</sup>

*EMPLOYMENT*

Civilian aircraft pilots and flight engineers held about 117,000 jobs in 2000. Eighty-four percent worked as airline pilots, copilots and flight engineers. Pilots are generally concentrated in several states: CA, NY, IL, WA, MI, GA, NJ, FL, the District of Columbia, and TX, which have a higher amount of flying activity relative to their population.<sup>29</sup>

*TRAINING, QUALIFICATIONS, ADVANCEMENT*

Air pilots who are paid to transport passengers or cargo must have a commercial pilot's license with an instrument rating issued by the FAA. To qualify for this license,

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<sup>25</sup> Detroit MSA, Occupational Employment Forecasts (1998 – 2008), [www.michlmi.org/LMI/occ\\_proj/oct\\_01.htm](http://www.michlmi.org/LMI/occ_proj/oct_01.htm)

<sup>26</sup> Ibid.

<sup>27</sup> [salary.monster.com/salary\\_wizard](http://salary.monster.com/salary_wizard).

<sup>28</sup> Occupational Outlook Handbook 2000, Bureau of Labor Statistics, Aircraft Pilot and Flight Engineers.

<sup>29</sup> Ibid.

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applicants must be at least 18 years old and have at least 250 hours of flight experience. Applicants also must pass a strict physical exam and have 20/20 vision. They must pass a written test as well. Airline pilots must also have an airline transport pilot's license, which requires a minimum of 1500 hours of flying experience. Although some small airlines will hire high school graduates, most airlines require at least 2 years of college and prefer to hire college graduates. Because the number of college-educated applicants continues to increase, many employers are making a college degree a requirement.<sup>30</sup>

*JOB OUTLOOK / SALARIES*

Pilots are expected to face strong competition through the year 2010. As time passes, some pilots will fail to maintain their qualifications and the number of applicants competing for openings should decrease. However, factors affecting demand are not expected to ease the competition. Employment is expected to increase about as fast as average for pilots and flight engineers. According to the Michigan Department of Career Development (MDCD), employment of pilots and flight engineers in the Detroit metropolitan area is projected to grow 9.6% from 1998 to 2008.<sup>31</sup>

Earnings for this group depend on whether they work as airline or commercial pilots. Median earnings of these professionals working for the airlines in 2000 were \$110,940. On the contrary, commercial pilots' median earnings in 2000 were \$43,300.<sup>32</sup>

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<sup>30</sup> Occupational Outlook Handbook 2000, Bureau of Labor Statistics, Aircraft Pilot and Flight Engineers.

<sup>31</sup> Detroit MSA, Occupational Employment Forecasts (1998 - 2008), [www.michlmi.org/LMI/occ\\_proj/oct\\_01.htm](http://www.michlmi.org/LMI/occ_proj/oct_01.htm)

<sup>32</sup> Ibid.
















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**APPENDIX A  
AVIATION PROGRAMS – DETROIT AND SURROUNDING AREAS**

**(see Excel file entitled “Appendix A.xls”)**

## Aviation Programs - Detroit and Surrounding Areas

Primary Type of Aviation School	City	School	Address	City and Zip Code	Recreational Pilot	Private Pilots	Commercial Pilot	Instrument Rating	Flight Instructor	Airline Transp.	Multi-Engine Rating	Aviation Maintenance Training	Aviation Management	Flight Training	Avionics Training	Aerospace Engineer	Ground School	FAA Approved
	Ann Arbor	Bijan Air Inc.	747 Airport Drive	Ann Arbor 48108		X	X		X								X	
	Ann Arbor	Aviation Center, Inc.	719 Airport Drive	Ann Arbor 48108	X	X	X	X	X		X						X	
	Ann Arbor	University of Michigan	1105 North University	Ann Arbor 48109-1085											X	X		
	Belleville	Michigan Institute of Aeronautics	47884 D. Street	Belleville 48111								X						X
	Dearborn	Henry Ford Community College	5101 Evergreen Rd.	Dearborn 49202													X	
	Detroit	Wayne County Community College	801 Fort Street	Detroit 48226								X		X				
	Detroit	Spicer Flying Service	11201-Conner Road	Detroit 48213	X	X	X	X	X								X	
	Detroit	Eagle Flight Center LLC	839 Willow Run Expressway	Ypsilanti Township 48197		X	X	X	X		X						X	
	Detroit	Business Air LLC	9505 Groh Rd.	Grosse Ile 48138		X	X	X	X	X							X	
	Detroit	Benjamin O. Davis Jr. Aerospace Tech	10200 Erwin Avenue	Detroit 48234								X						X
	Flint	American Wings, Inc.	PO Box 351 3375 W. Bristol Road	Fenton 48430		X	X		X		X						X	
	Highland Lakes	Oakland Community College	7350 Cooley Lake Road	Waterford 48237-4187									X	X				
	Howell	Reliant Aviation Company	3570 W. Grand River	Howell 48843	X	X		X									X	
	Lansing	Lansing Community College	422 North Washington Square	Lansing 48933								X			X		X	X
	Livonia	Schoolcraft College	18600 Haggerty Road	Livonia 48152		X		X									X	

Key:



= Flight school



= College program




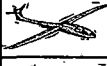












= Aviation Maintenance program



= Ground School



Primary Type of Aviation School	City	School	Address	City and Zip Code	Recreational Pilot	Private Pilots	Commercial Pilot	Instrument Rating	Flight Instructor	Airline Transp.	MultiEngine Rating	Aviation Maintenance Training	Aviation Management	Flight Training	Avionics Training	Aerospace Engineer	Ground School	FAA Approved
	Marine City	Marine City Aviation	P.O. Box 308	Marine City 48039	X	X	X	X	X		X						X	
	New Hudson	New Hudson Aero	P O Box 329	New Hudson 48165		X		X									X	
	Plymouth	Kitze Aviation	8550 N. Lilley Road	Canton 48187		X	X	X	X								X	
	Pontiac	Tradewinds Aviation	6320 Highland Road	Waterford 48327	X	X	X	X	X	X	X						X	X
	Pontiac	American Flight & Technology Center	1525 Airport Road	Waterford 48327		X	X	X	X		X						X	X
	Pontiac	Flight 101 LLC	2121 Airport Rd.	Waterford 48327	X	X	X	X	X								X	
	Pontiac	Drake Flight Training	1675 Airport Road	Waterford 48327-1304		X	X	X	X	X	X						X	
	Port Huron	St. Clair Flight Academy	295 N. Airport Drive	Kimball 48074	X	X	X	X	X								X	
	Port Huron	St. Clair Community College	323 Erie St.	Port Huron 48061-5015													X	
	Ray	The Flight School, Inc.	15340 32 Mile Road	Ray 48096	X	X	X	X	X								X	
	Troy	Mack Goodwin Flight Instruction	2345 Windemere	Birmingham 48009		X	X	X	X									
	Troy	Troy Executive Aviation	2670 Industrial Row	Troy 48084	X	X	X	X	X								X	
	Warren	Macomb Community College	14500 E. Twelve Mile Road	Warren 48093								X					X	
	Ypsilanti	Eastern Michigan University	1000 College Place	Ypsilanti 48197									X					

Key:



= Flight school



= College program



= Aviation Maintenance program



= Ground School

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**APPENDIX B**

**Aviation Program Assessment  
Flight Schools Survey**

Hello, my name is \_\_\_\_\_ and I'm calling from Oakland Community College. We are contacting area flight schools to learn about current trends in flight training. Could you or someone most knowledgeable about this matter answer a few questions for me?

1. First, thinking over the past few years, in what type(s) of flight training are your students most interested? (*read list and circle all that apply*)

<u>Yes</u>	<u>No</u>	<u>Type of Training</u>
<u>1</u>	<u>0</u>	<u>Recreational pilot</u>
<u>1</u>	<u>0</u>	<u>Flight instructor</u>
<u>1</u>	<u>0</u>	<u>Private pilot</u>
<u>1</u>	<u>0</u>	<u>Airline transport</u>
<u>1</u>	<u>0</u>	<u>Commercial pilot</u>
<u>1</u>	<u>0</u>	<u>Multi-engine rating</u>
<u>1</u>	<u>0</u>	<u>Instrument rating</u>
<u>1</u>	<u>0</u>	<u>Ground school</u>
<u>88</u>		<u>Don't know</u>

Other (please specify): \_\_\_\_\_

\_\_\_\_\_

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2. Approximately how many people complete your training program(s) annually -- by type of training?

\_\_\_\_\_ Recreational pilot

\_\_\_\_\_ Flight instructor

\_\_\_\_\_ Private pilot

\_\_\_\_\_ Airline transport.

\_\_\_\_\_ Commercial pilot

\_\_\_\_\_ Multi-engine rating

\_\_\_\_\_ Instrument rating

\_\_\_\_\_ Ground school

88 Don't know

\_\_\_\_\_ Other (please specify) \_\_\_\_\_

3. In the last year, what percentage of students do you estimate are hobbyists (i.e., taking flight instruction for pleasure only)?

\_\_\_\_\_ %

88 Don't know

4. Have you seen an increase, decrease or no change at all in the number of students enrolling in flight instruction at your facility since September 11<sup>th</sup>? (*circle only one*)

1 Decrease

2 Stay the same

3 Increase

88 Don't know

- 4a. (*If respondent says "1" or "3"*) Can you estimate the percentage of this (*enter which applicable: **increase** or **decrease***) in enrollment?

\_\_\_\_\_ %

88 Don't know

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Flight Schools Survey – Page 2

5. What has the trend in enrollment been over the past 5 years prior to September 11th -- increase, decrease or no change at all? (*circle only one*)

- 1 Decrease
- 2 Stay the same
- 3 Increase
- 88 Don't know

5a. (*If respondent says "1" or "3"*) Can you estimate the percentage of this (*enter which applicable: **increase** or **decrease***) in enrollment?  
\_\_\_\_\_ %

88 Don't know

5b. Additional comments (*please record any additional comments made by respondent*):

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6. Who do you consider to be your primary competitor(s) for the type(s) of training your facility offers? (*record all responses*)

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_

88 Don't know

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Flight Schools Survey – Page 3

7. Since September 11<sup>th</sup>, are there any specific issues that you have had to address (*if asked for clarification: i.e., background checks for prospective students*)? (*please record all comments by respondent*)

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*I have no further questions today. Thank you very much for your time.*

## APPENDIX C

### Aviation Program Assessment Flight Schools Survey Open-End Remarks

**“Since September 11<sup>th</sup>, are there specific issues that you have had to address?”**

- Michigan’s criminal background check is the worst thing that ever happened to us.
- Have to start doing background checks. Keep more records on hand concerning student progress.
- Seven-year background checks. Require professional dress for Eastern Michigan program as well as airport tags for students. Drug testing as well.
- Background checks are the newest thing.
- Closures. We are in an enhanced class B area and the Michigan statutory is a big of an aggravation. We’ll work with it though.
- Background checks are costly and not very useful. If I remember, the terrorists had a clear record.
- We have to deal with more security such as fingerprinting – the new Michigan law.
- Not had to address background checks. Had to address security-related issues and reduced walk-in traffic. We’re in a secured perimeter now behind a locked gate.
- Background [checks] is all.
- NOTAMS [Notice to Airmen – FAA system that updates and disseminates information to airmen] and background checks.
- State has for some reason decided they have the authority to enforce background checks on a federally licensed school. The law is absolutely a job; it will accomplish nothing. The form used is the same used to apply for CCW. Turned in some people to the FBI. One guy had four out-of-state licenses and only wanted to learn to take off and fly. He’d been to Germany four times in the last year on a taxi driver’s salary.
- Background checks, not really conducive to flight training. Students fill out a form with the State Police and usually they wind up releasing whatever criminal activities. CFI’s [Certified Flight Instructors] working alone don’t have to run background checks. Michigan is the strictest state.
- A whole lot. Background checks and going the extra mile with drug testing.
- Background checks.

**Aviation Program Assessment  
Flight Schools Survey  
Open-End Remarks (continued)**

**“Since September 11<sup>th</sup>, are there specific issues that you have had to address?”**

- There are some new airspace restrictions.
- Background checks are going on.
- Some security issues.
- Background checks were a knee-jerk reaction politically because none of the hijackers had a record. This may be a deterrent.
- Background checks.
- There are background checks.
- Background checks have become an issue. Security – I always make sure I have the key to the aircraft at all times. We’ve started chaining the gates. We watch for any cars lurking about. I had a person call me who wouldn’t give me a name or address.
- Background checks. Politicians are making all kinds of knee-jerk reactions and complicating things. I guess it’s thinning out the competition. There aren’t many flight schools left right now.
- Not particularly.
- We just have to do background checks now.
- Security – we require badges for everyone now.