



**Personal Aviation  
Perspective on Alternative  
Aviation Gasoline**

**For Stakeholders' Workshop**

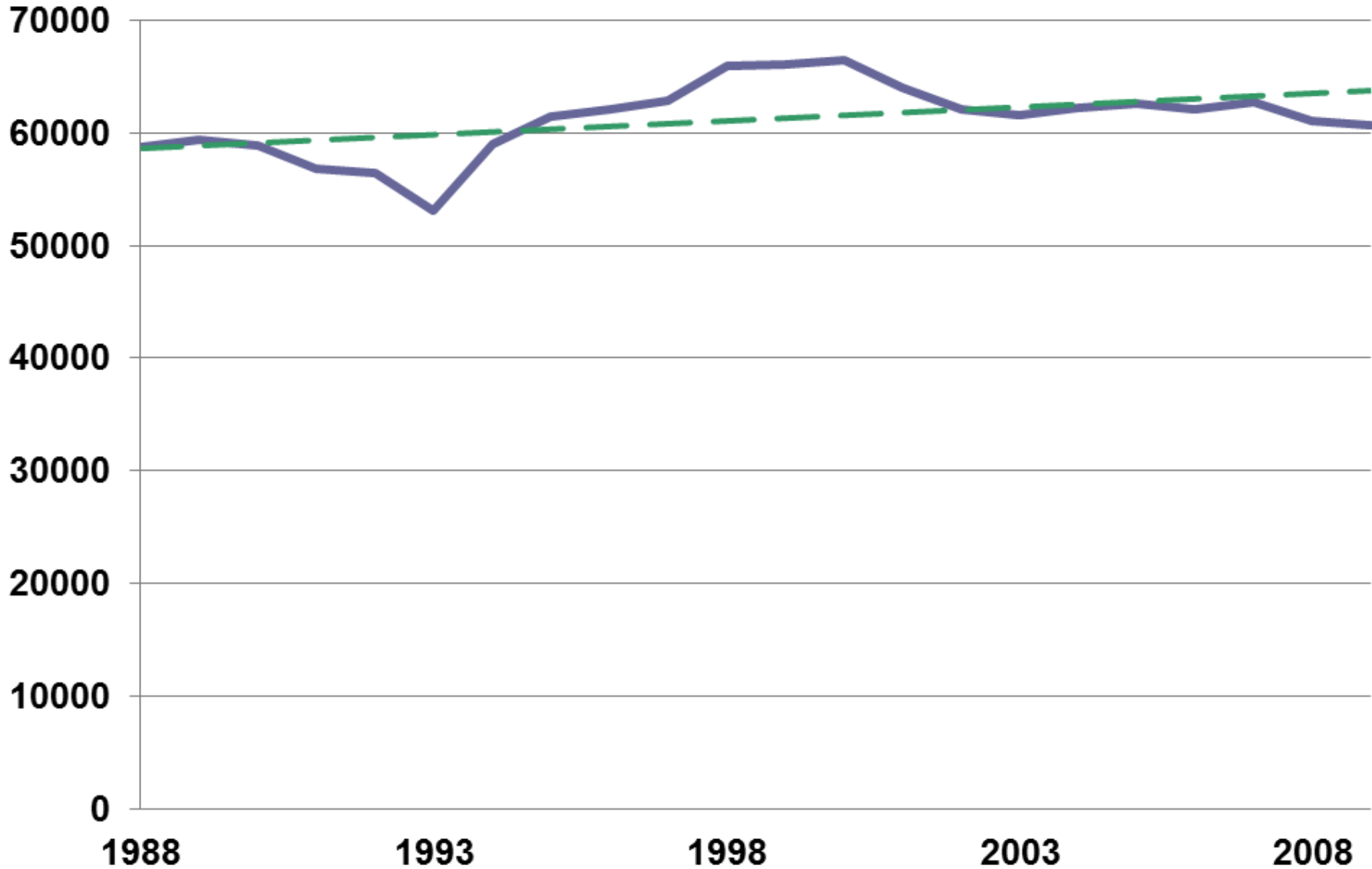
**Kevin Psutka**

**President and CEO**

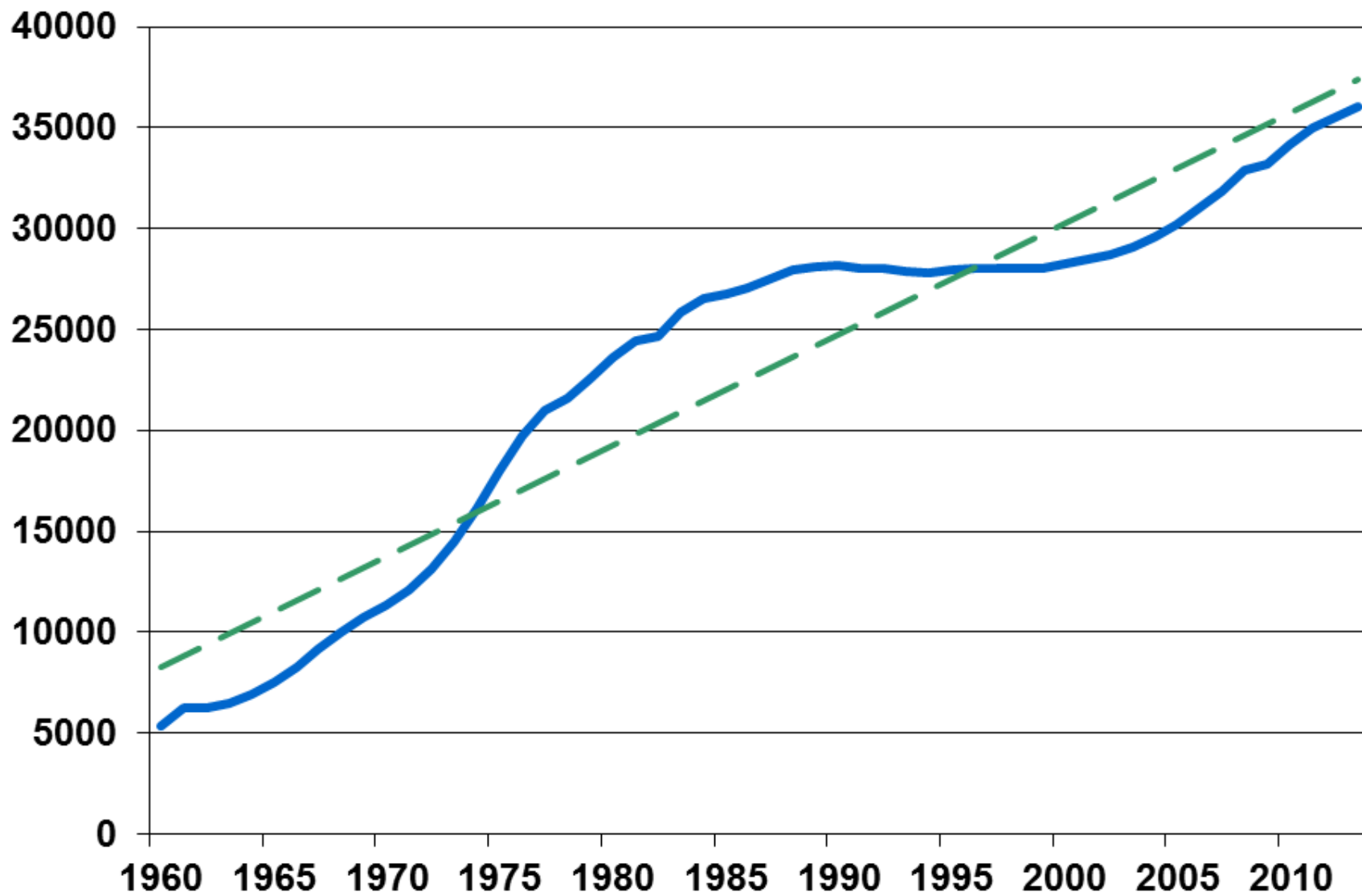
# Some Definitions

- General Aviation – everything other than airline or military.
- Personal Aviation – that sector of General Aviation where aircraft are flown for personal transportation and recreation.

# Total Pilots



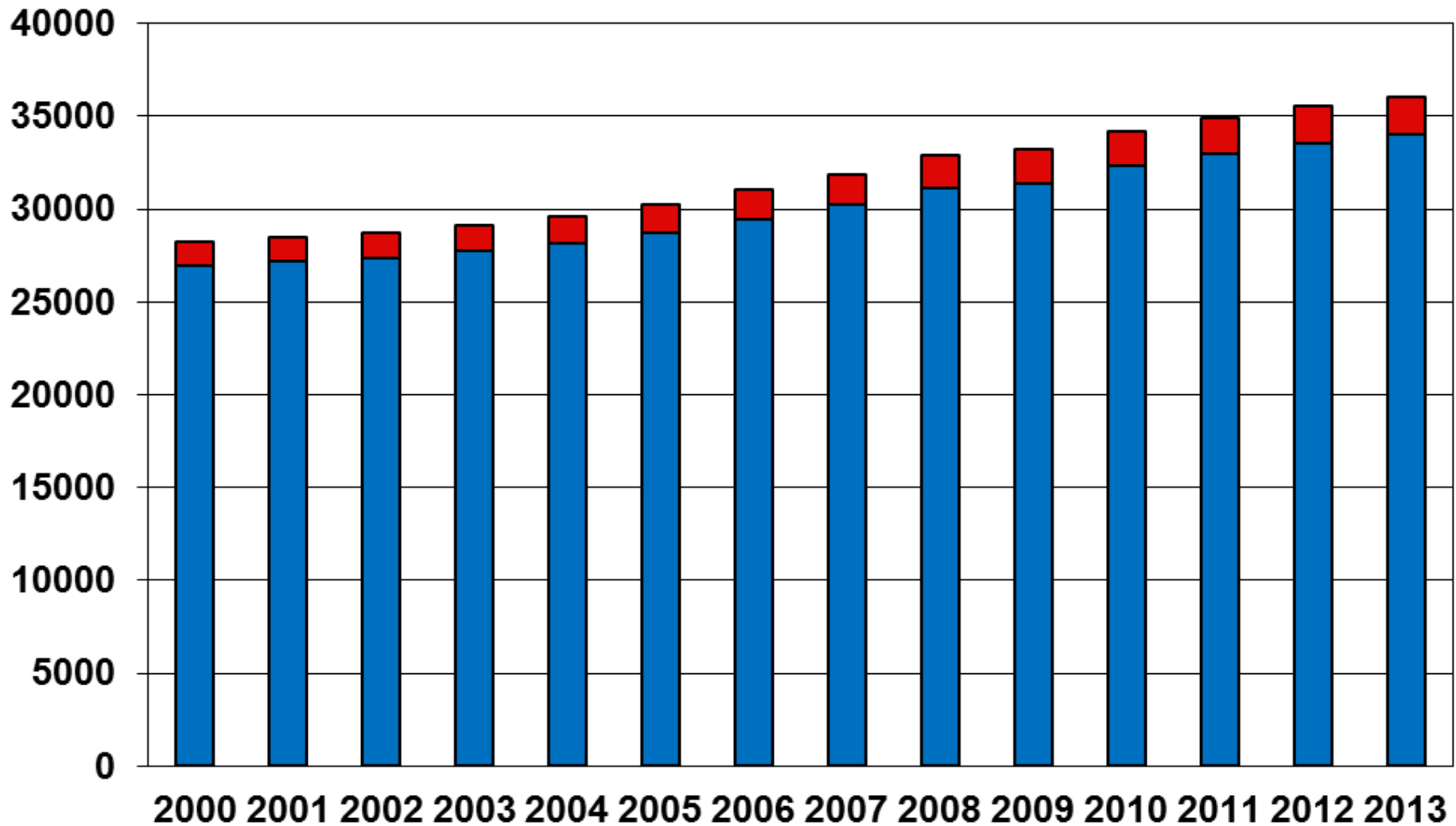
# Total Aircraft 1960-2013



# Large vs Small Aircraft

■ <12,500 lbs

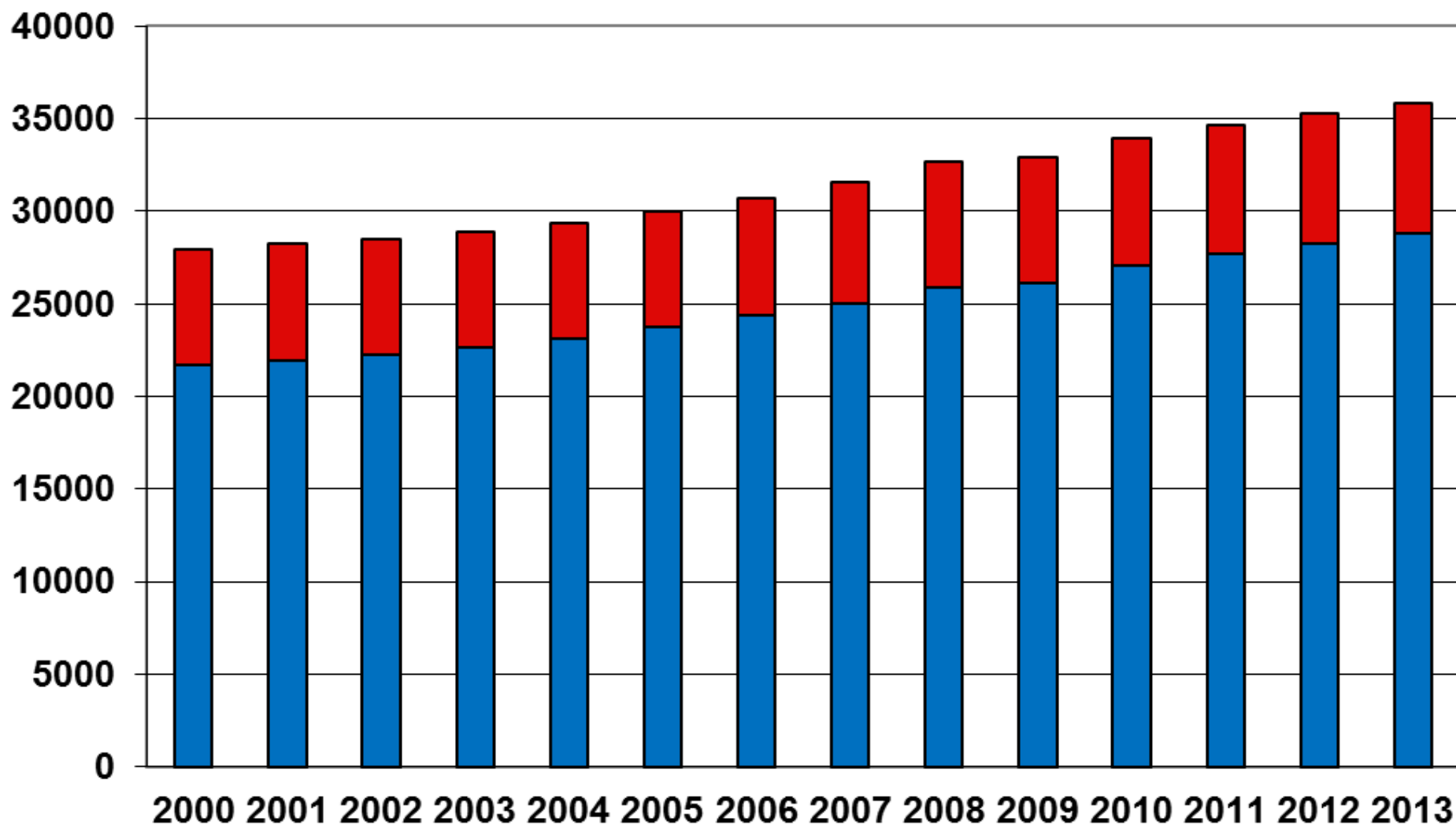
■ >12,500 lbs



# Private vs Commercial Aircraft

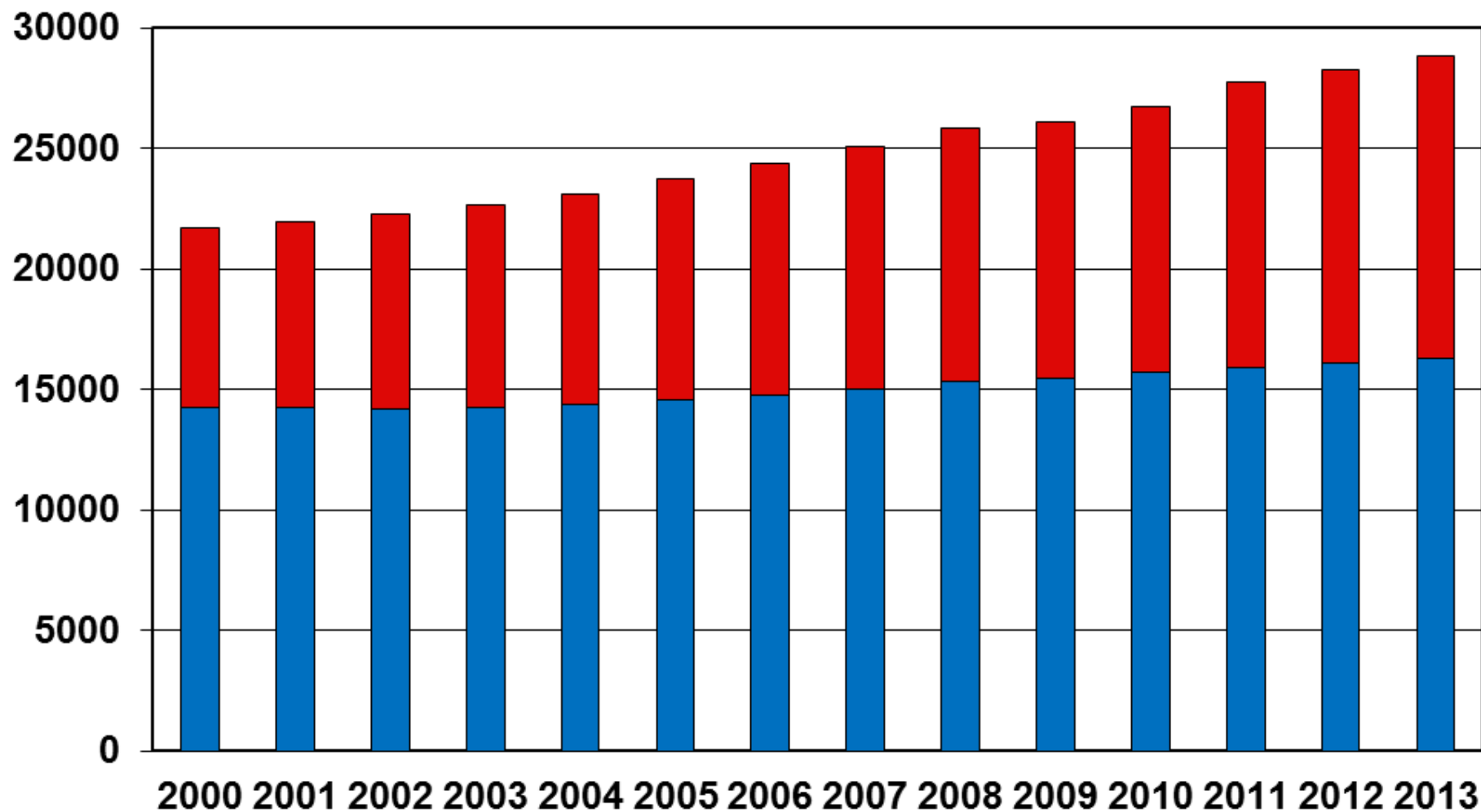
■ Private

■ Commercial



# Private Aircraft

■ Certified    ■ Non-certified

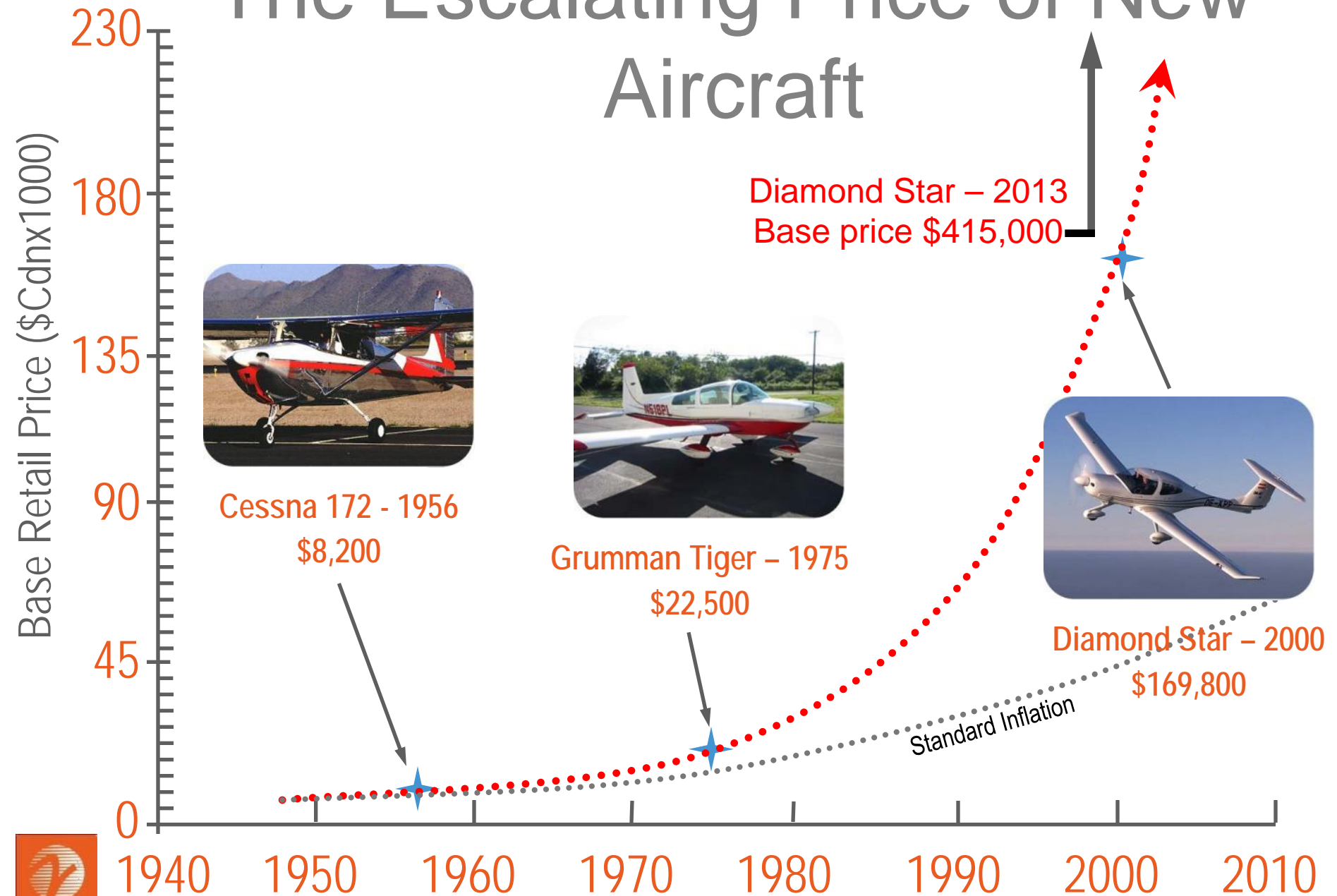


# Number of piston aircraft?

- As of December 2013 there were 36,000 records in the TC Registration database.
  - 34,050 are small (weigh less than 12,500)
  - 30,000 piston powered aircraft.
  - 28,800 privately registered.
  - 12,500 privately registered non-certified aircraft.



# The Escalating Price of New Aircraft



Cessna 172 - 1956  
\$8,200



Grumman Tiger - 1975  
\$22,500



Diamond Star - 2000  
\$169,800

Diamond Star - 2013  
Base price \$415,000



# Some conclusions

- Private aircraft are by far the largest portion to the Canadian fleet, are increasing both in numbers and as a percentage of the fleet.
- Non-certified aircraft are an increasing percentage of the fleet.
- Cost is the major driver toward non-certified aircraft.

# 100LL prices

(COPA's Places to Fly catalogue of 1200 airports)

Below is a list of the cheapest 100LL fuel prices from airports updated within past 6 months:

Airport Name	100LL Fuel Price	Date of Fuel Price
<a href="#">Camrose</a>	1.505	2014-02-13
<a href="#">Pembroke</a>	1.58	2013-11-05
<a href="#">Tillsonburg Regional</a>	1.59	2013-11-18
<a href="#">Courtenay Airpark</a>	1.64	2013-11-21
<a href="#">Edmonton/Parkland Airport</a>	1.69	2014-02-12
<a href="#">Centralia-James T. Field Memorial</a>	1.7	2013-11-26
<a href="#">Trois-Rivières</a>	1.73	2014-02-25
<a href="#">Drayton Valley Industrial</a>	1.73	2013-11-15
<a href="#">St-Georges de Beauce</a>	1.74	2014-01-18
<a href="#">Killarney Municipal</a>	1.75	2014-01-13
<a href="#">Moose Jaw Muni</a>	1.85	2013-11-06
<a href="#">Kapuskasing Airport</a>	1.86	2014-02-22
<a href="#">Grand Forks</a>	1.93	2013-12-05
<a href="#">Sioux Lookout Muninipal Airport</a>	1.93	2013-10-29
<a href="#">Earlton (Timiskaming Regional)</a>	1.95	2013-10-01
<a href="#">Whitehorse</a>	1.96	2013-10-16
<a href="#">Dryden Regional</a>	1.98	2013-10-29
<a href="#">Fort Nelson</a>	2.02	2013-10-16
<a href="#">Niagara District - See St. Catharines / Niagara District</a>	2.1	2014-02-03

# Most expensive 100LL?

(100LL.ca)

- \$3.43/L  
= \$12.96/US gal.
- Typical light twin  
burns about 22  
gals/hour.  
= \$285/hour in fuel  
alone.

<a href="#">CYXK</a>	<a href="#">Rimouski</a>	QC		2.314			2013-08-24
<a href="#">CYHY</a>	<a href="#">Hay River/Mertyn Carter</a>	NT		2.320			2013-07-02
<a href="#">CYSU</a>	<a href="#">Summerside</a>	PE		2.360			2013-08-26
<a href="#">CYXC</a>	<a href="#">Calgary Intl</a>	AB		2.370			2012-08-13
<a href="#">CYYY</a>	<a href="#">Mont-Joli</a>	QC		2.390			2013-08-26
<a href="#">CYMA</a>	<a href="#">Mayo</a>	YT		2.400			2013-06-09
<a href="#">CYQB</a>	<a href="#">Québec/Jean Lesage Intl</a>	QC		2.410			2013-08-01
<a href="#">CYPY</a>	<a href="#">Fort Chipewyan</a>	AB		2.426			2013-08-31
<a href="#">CAM3</a>	<a href="#">Duncan</a>	BC	1.620	2.430			2013-06-21
<a href="#">CYQM</a>	<a href="#">Moncton/Greater Moncton Intl</a>	NB		2.430			2013-08-07
<a href="#">CYHZ</a>	<a href="#">Halifax Stanfield Intl</a>	NS		2.430			2013-08-20
<a href="#">CZFA</a>	<a href="#">Faro</a>	YT		2.590			2012-06-01
<a href="#">CYQX</a>	<a href="#">Gander Intl</a>	NL		2.600			2013-08-20
<a href="#">CYZF</a>	<a href="#">Yellowknife</a>	NT		2.910			2013-08-31
<a href="#">CYYT</a>	<a href="#">St. John's Intl</a>	NL		3.070			2013-08-20
<a href="#">CYDF</a>	<a href="#">Deer Lake</a>	NL		3.180			2013-08-07
<a href="#">CYR</a>	<a href="#">Goose Bay</a>	NL		3.300			2013-08-20
<a href="#">CYEV</a>	<a href="#">Inuvik (Mike Zubko)</a>	NT		3.430			2013-07-01
ICAO Code	Airport	Prov	100LL Members	100LL Public	JETA	MoGas	Last Update

# Mogas usage

- A significant percentage of the privately registered aircraft, in particular the non-certified ones, are using mogas.
  - Most amateur-built and some certified aircraft are using mogas or combination mogas/avgas.
  - 2 cycle Rotax is a popular engine in ultralights (there are about 6,000 ultralights) – does not tolerate avgas.

# Mogas risks

- Quality/consistency/stability
  - shorter shelf-life compared to 100LL
- Vapour lock
- Ethanol content
- Seasonal additives
- Incompatible fuel system components

# Need for mogas continues

- The non-certified fleet continues to be the fastest growing sector.
- Potential 100LL replacement suppliers are boasting prices similar to 100LL
  - Price conscious owners will continue to be sensitive to the price differential.
  - Suppliers boasts are based on only one type of replacement fuel
    - Additional fuels would be not profitable unless price was very high but market is already reacting to current high price.

# Avgas

- Canada is a follower of the US situation:
  - EPA has committed to a solution by 2018.
  - Date for elimination of 100LL is unknown.
- Canada only has one refinery of 100LL (Edmonton)
  - Most of eastern Canada fuel comes from the US.



# Avgas

- COPA is a member of the Avgas Coalition along with AOPA and others to encourage a solution and educate everyone on the issues and realities.
- There have been hundreds of alternatives developed but there are no “drop-in” replacements for 100LL.

# Avgas

- There are plenty of reasons why personal aviation is under stress but fuel uncertainty is a major driver.
  - no schedule for 100LL replacement,
  - increasing legal challenges from opponents
  - fuel price uncertainty.
- We are seeing aircraft values decrease because of this uncertainty.



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