



**Personal Aviation
Perspective on Alternative
Aviation Gasoline**

For Stakeholders' Workshop

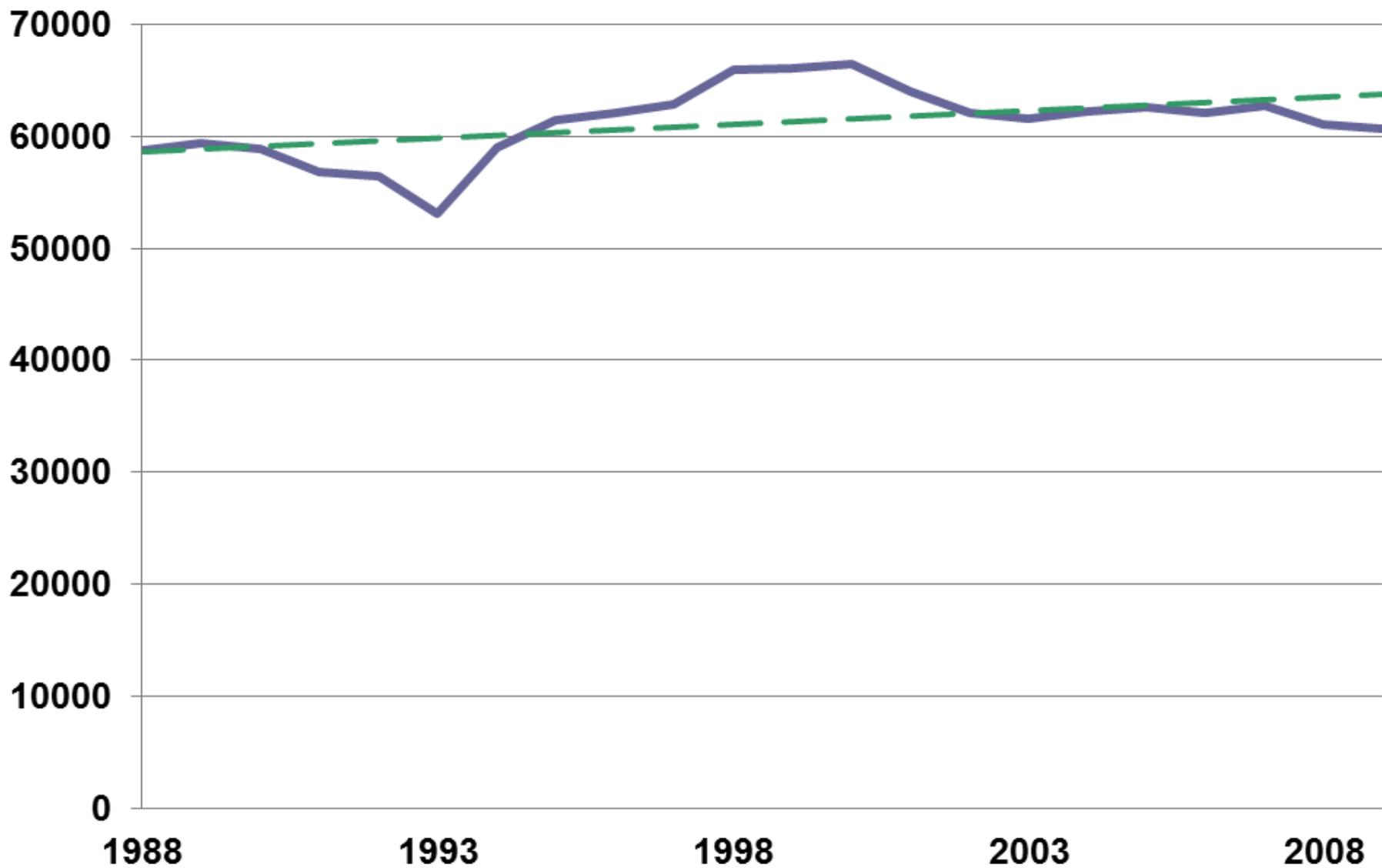
Kevin Psutka

President and CEO

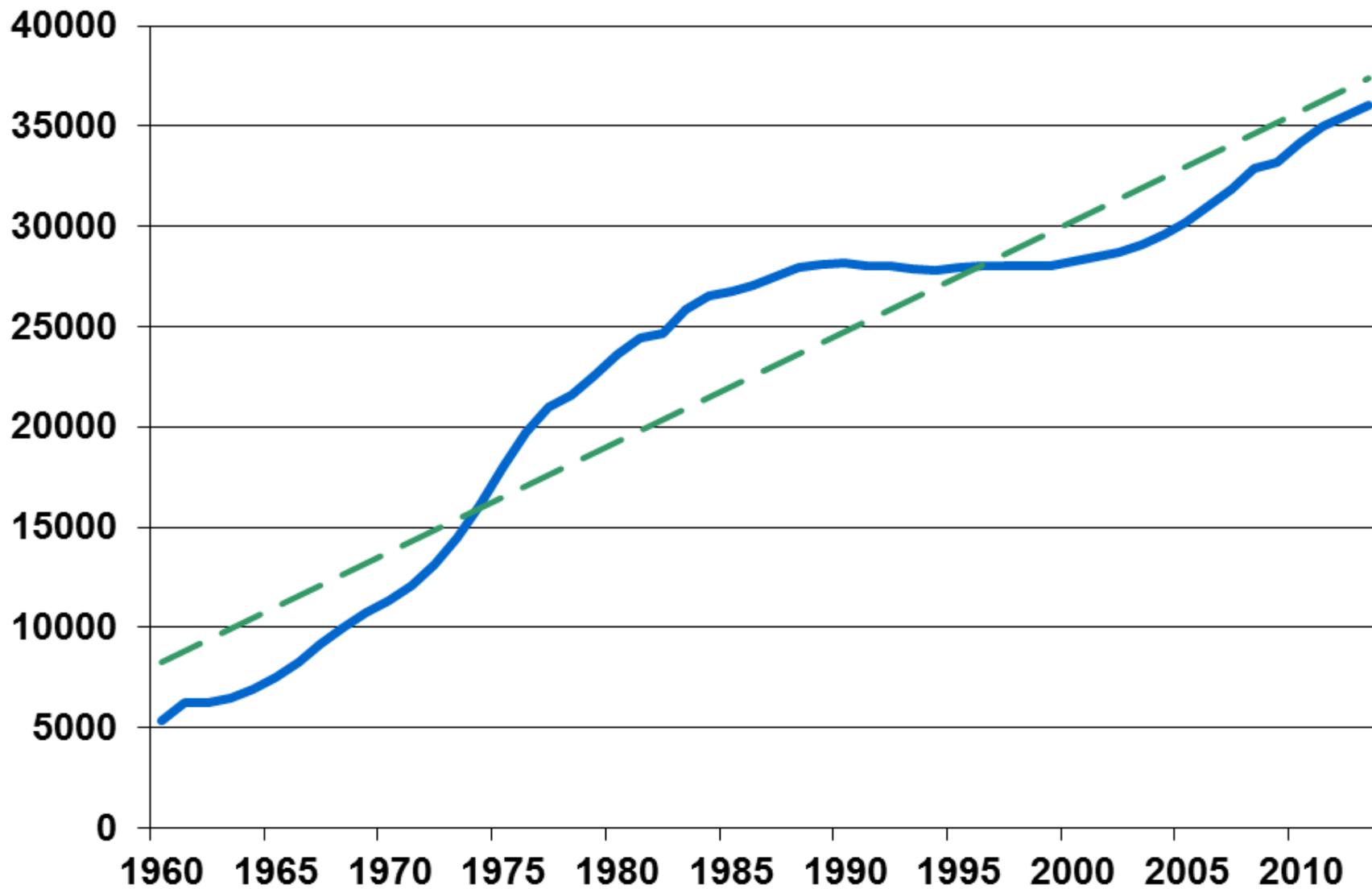
Some Definitions

- 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



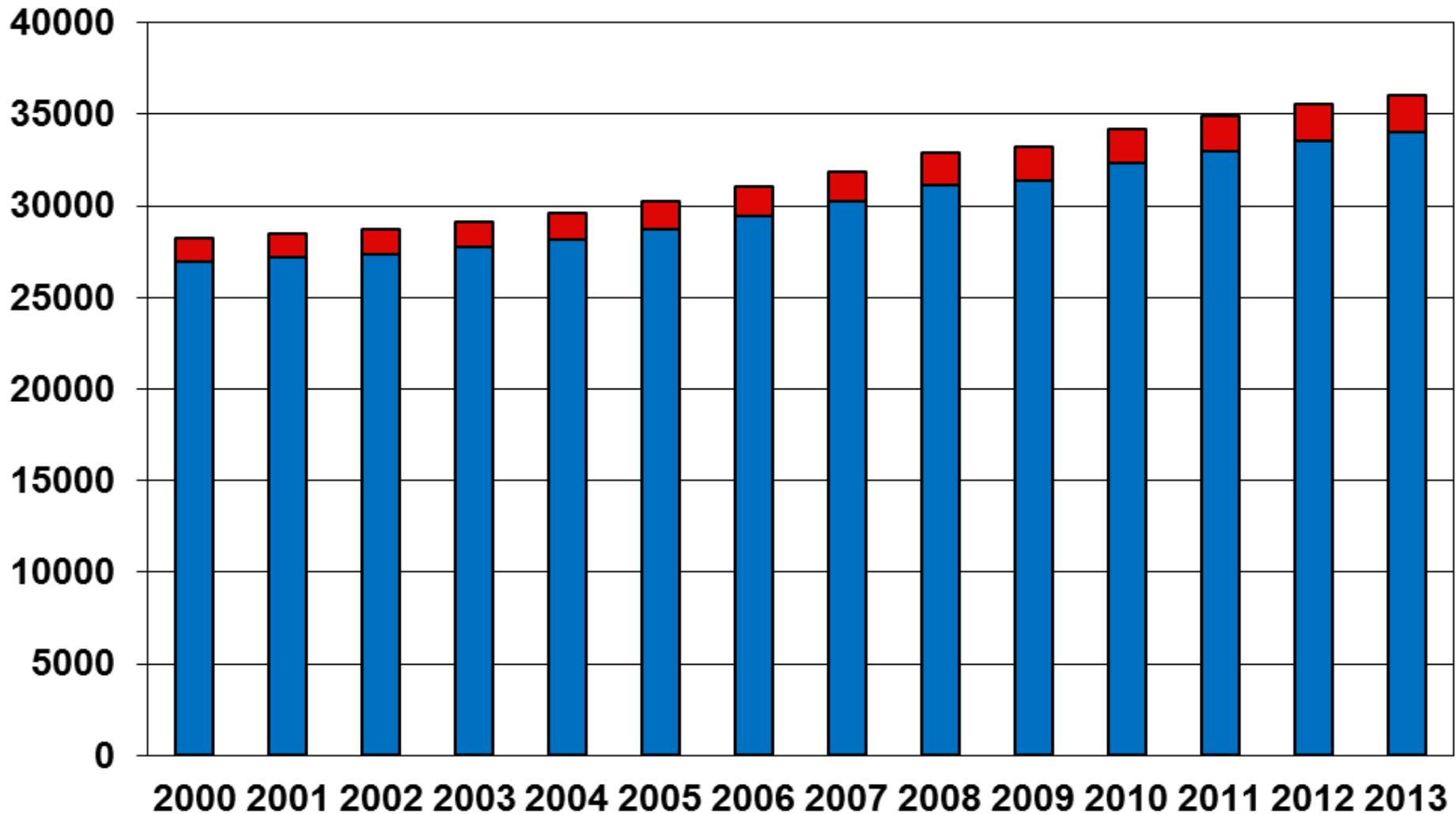
Total Aircraft 1960-2013



Large vs Small Aircraft

■ <12,500 lbs

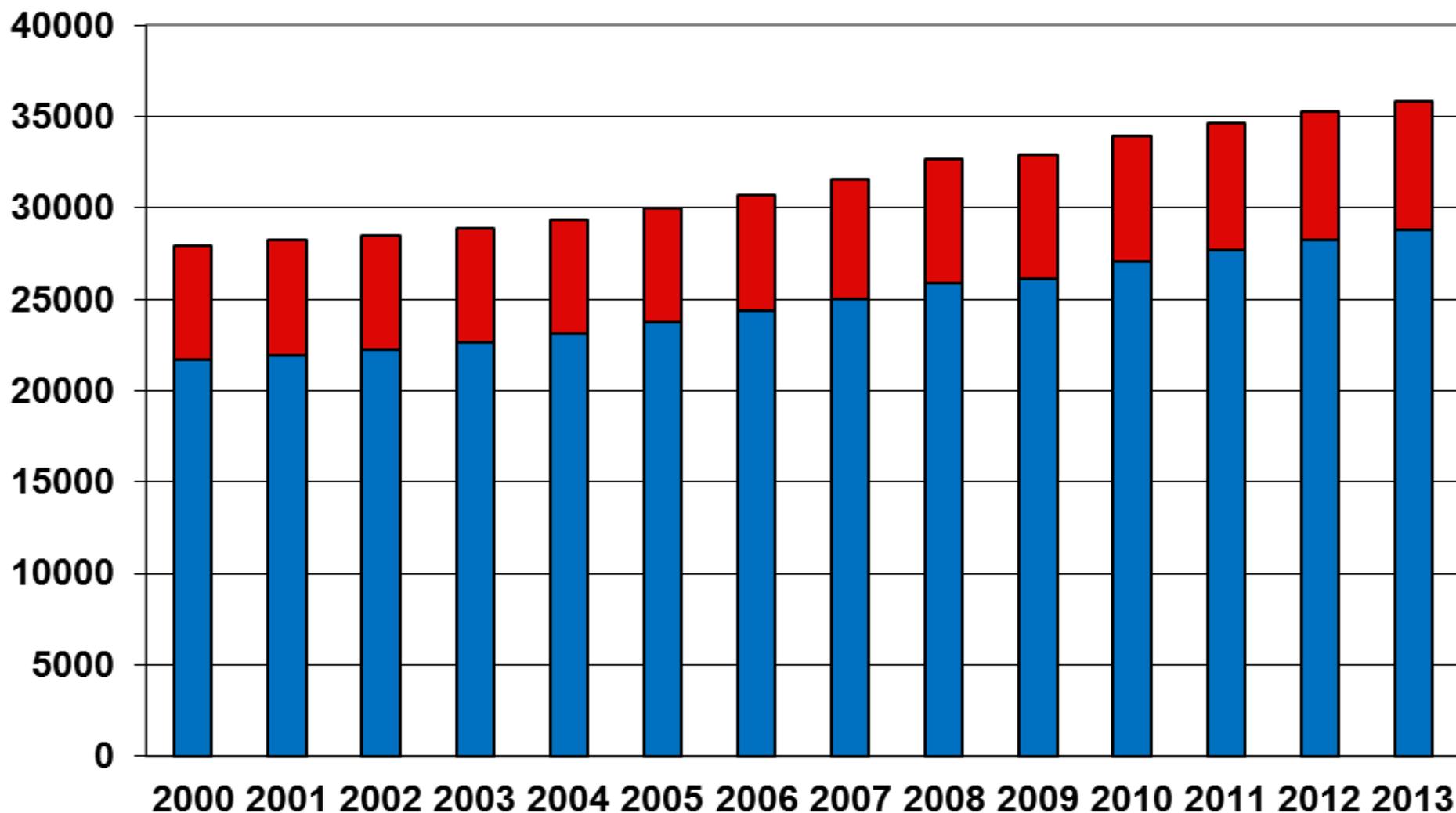
■ >12,500 lbs



Private vs Commercial Aircraft

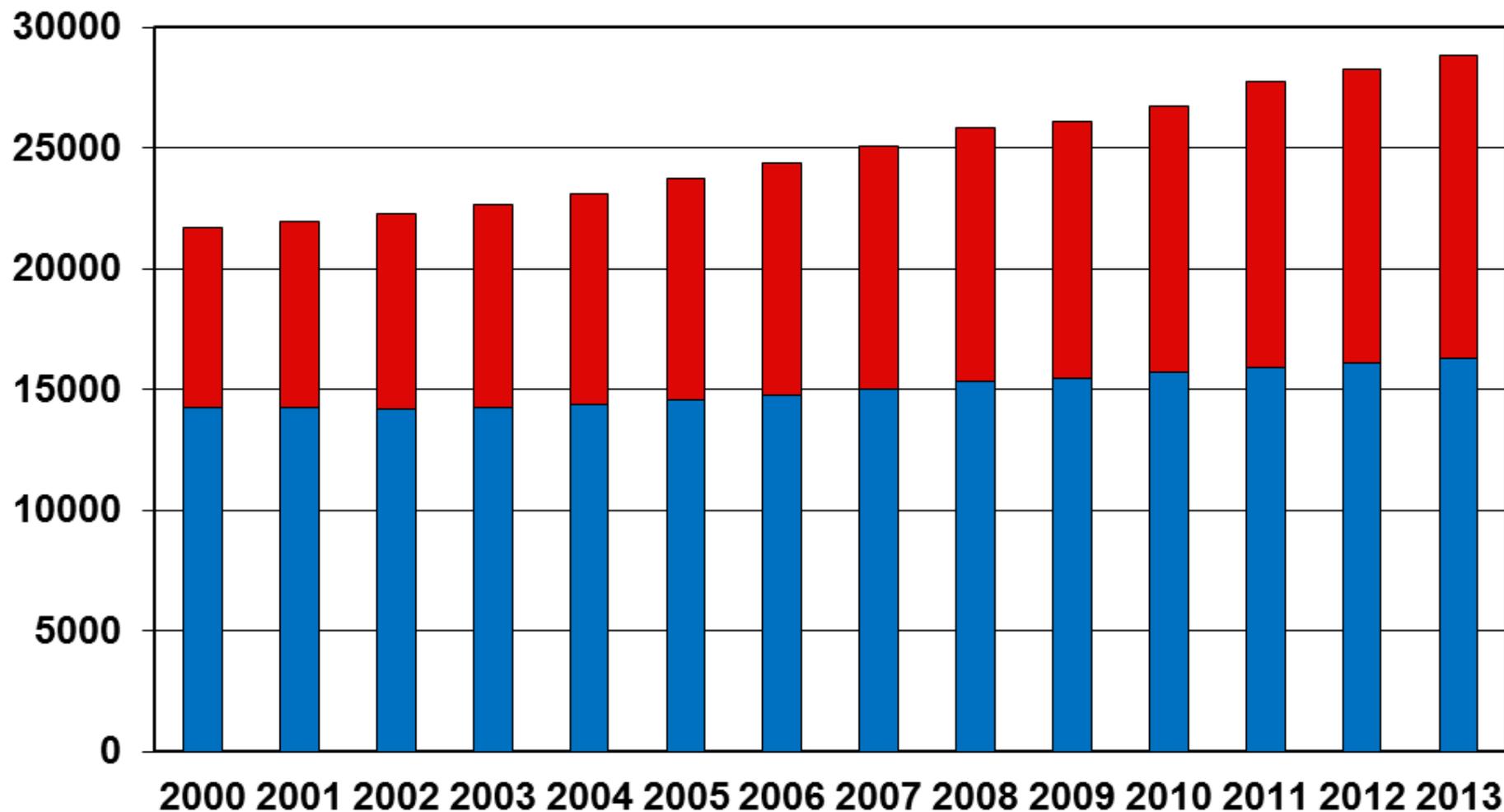
■ Private

■ Commercial



Private Aircraft

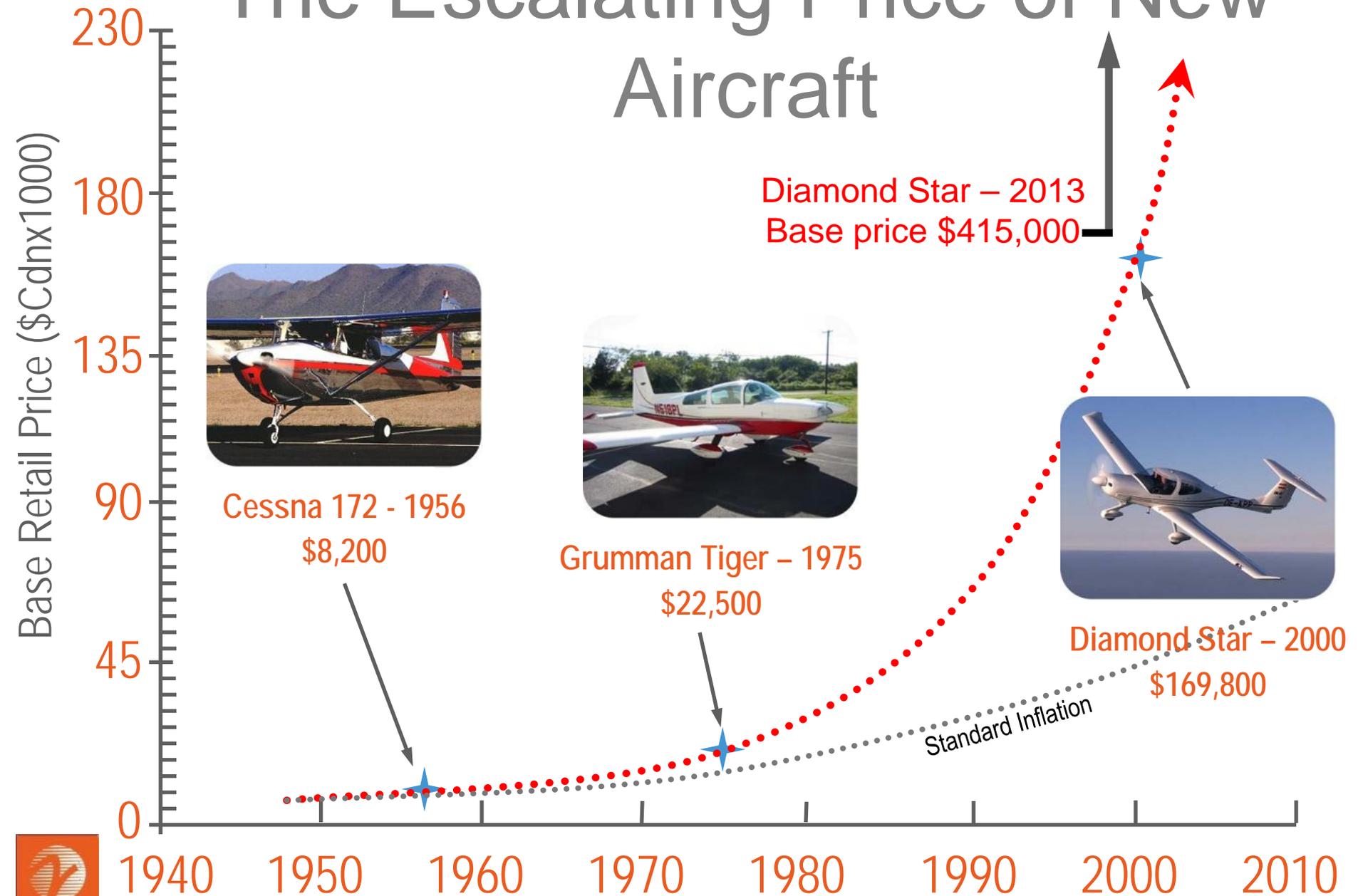
■ Certified ■ Non-certified



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

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