



# GA Avgas Coalition Briefing

## AirVenture 2010

# Members of GA Avgas Coalition

## GA Aircraft Operators

- › AOPA – Aircraft Owners and Pilots Association
- › EAA – Experimental Aircraft Association
- › NBAA – National Business Aviation Association

## GA Aircraft Manufacturers

- › GAMA – General Aviation Manufacturers Association

## Avgas Point of Sale - Fixed Based Operators

- › NATA – National Air Transportation Association

## Avgas Producers

- › API – American Petroleum Institute
- › NPRA – National Petrochemical & Refiners Association

# GA Avgas Coalition

**Purpose:** To collaborate, coordinate and provide leadership on development and implementation of **the process** by which an unleaded avgas solution will be identified

**Role:** Has the unique capacity to provide a **balanced** approach on the establishment of the process

**Result:** This **process** will provide the information necessary for the marketplace to identify the best solution which is **technically feasible** and **economically reasonable**

# Important Points

1. There is NO date set by which EPA will ban 100LL
2. The process being undertaken by the coalition will allow for ALL proposed alternatives to be equally evaluated and considered

## Important Points

3. Its more than just octane – the appropriate solution must meet other important technical parameters necessary for safety and take into account economic and availability considerations.
4. We have to get this right. The industry will be affected by the outcome of this transition for generations. We have time and must use it to ensure that every aspect is considered.

# This is Not a New Issue

20 years of R&D for a “drop-in” high-octane unleaded fuel

- ▶ A “drop-in” fuel requires NO modification or FAA approval for each aircraft
- ▶ Lab tested more than 200 unleaded blends
- ▶ FAA full-scale engine tests on 45 high-octane unleaded blends

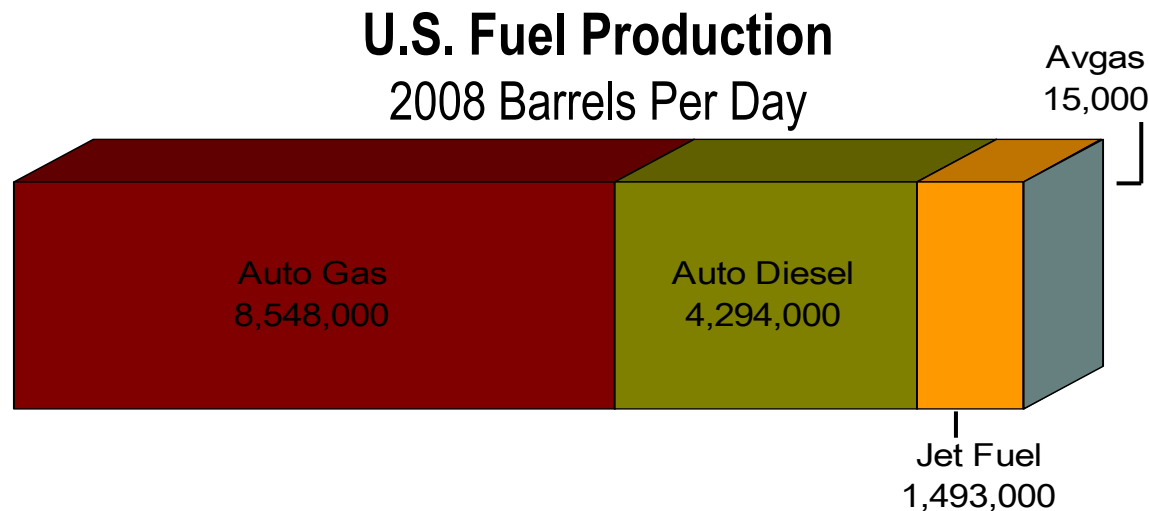
## Finding

- ▶ No “drop-in” unleaded replacement for 100LL has been identified

# Factors Affecting Long-Term Availability of 100LL Avgas

## Economic

- ▶ There is no assurance of long-term supply of leaded avgas
  - Currently a single supplier of tetra-ethyl-lead (TEL) additive
- ▶ Avgas is specialty chemical or niche fuel
  - Very low volume - accounts for 0.1% of all transportation fuel



# Factors Affecting Long-Term Availability of 100LL Avgas

## Environmental

- ▶ Significant reductions by all other sources of lead
  - Aviation is now largest source (over 45%)
- ▶ 2006 petition by *Friends of the Earth* to regulate GA lead emissions under the Clean Air Act
- ▶ EPA regulatory actions on lead

Source Sectors of Lead Emissions in the U.S.

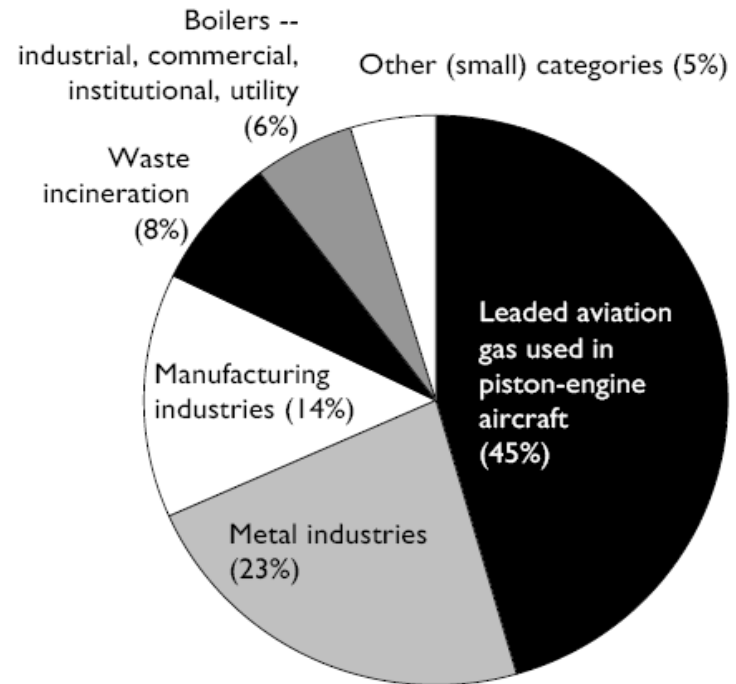


Chart based on EPA's 2002 National Emission Inventory (NEI) with modifications documented in Tom Pace's 05/01/08 memorandum and Marion Hoyer's 05/12/08 and 05/14/08 memoranda to the docket.

# EPA Regulatory Actions on Lead

## Near-Term: National Ambient Air Quality Standards (NAAQS) for Lead

- ▶ 10-fold reduction in allowable limit
- ▶ Requires monitoring near major sources and populated areas
- ▶ States must meet new NAAQS for lead by 2017
  - **This is not a ban on 100LL**

## Long-Term: Endangerment Finding on Lead from GA

- ▶ ANPR marked the beginning of the “endangerment finding process”
- ▶ **A finding itself does not ban 100LL**
  - Additional rulemaking would be required

# Avgas Coalition Plan

Establish a process to identify the most viable unleaded solution to replace 100LL by taking into account:

- ▶ Aviation safety
- ▶ Environmental improvements
- ▶ Technical feasibility/aircraft operations
- ▶ Economic impact
- ▶ Fuel production, distribution and cost

Two separate strategies will address near-term and long-term EPA regulatory actions

- ▶ **Near-term** strategy will support compliance with NAAQS
- ▶ **Long-term** strategy will address endangerment finding and identify a replacement for 100LL

## Near-Term Strategy

Provide near-term reduction of lead emissions from GA

- ▶ Evaluating a drop-in 100 ultra-low-lead (ULL) to replace 100LL
- ▶ Envisioned to require no actions from manufacturers or operators
- ▶ The use of 100ULL would lower total lead emissions in airport areas where monitoring may determine the current NAAQS standard is not being met

# Long-Term Strategy

## 5 phases to the development and transition to an unleaded avgas

### Phase 1 Establish FAA-led public-private partnership

- ▶ Develop and implement an integrated FAA program to provide the information necessary for the marketplace to identify the best unleaded solution which is technically feasible and economically reasonable.

### Phase 2 Identify viable unleaded avgas specification

- ▶ Evaluate current D910 fuel specification to determine which parameters can be adjusted
- ▶ Identify and support research needs for development of an unleaded avgas specification
- ▶ Define all criteria for a viable unleaded avgas
- ▶ Assessment of candidate fuels to the defined criteria
- ▶ Develop engine and aircraft certification process to transition existing fleet to a new fuel

## Long-Term Strategy (continued)

### Phase 3 Develop and approve an ASTM fuel specification

### Phase 4 Certify new production aircraft to new fuel specification

- ▶ Only affects new production engines and aircraft
- ▶ Would require dual certification for unleaded and 100LL Avgas

### Phase 5 EPA/FAA regulate transition to unleaded avgas

- ▶ Transition timeline dependent upon level of impact
  - FAA approvals and certifications necessary for safety
  - Avgas production and distribution infrastructure
- ▶ Regulation may need to consider special provisions if there are portions of the fleet that cannot transition within the timeline

# Core Principles of Coalition Plan to Unleaded Fuel

1. Assure Safety
2. Minimize Impact on Existing Fleet
3. Ensure Sustainability and Growth of GA

# Core Principles of Coalition Plan to Unleaded Fuel

## 1. Assure Safety

- ▶ The FAA is the U.S. agency responsible for aviation safety. Their leadership in this process is critical
- ▶ Like 100LL, the most viable alternative must meet many performance requirements necessary for safety
  - Fuel performance
    - ◆ Octane, vapor pressure, distillation curve (cold/hot/altitude start), freeze point, water separation, stability, etc.
  - Aircraft performance
    - ◆ Rated power (climb, single engine, high altitude, etc.), range, materials compatibility (tanks, bladders, seals, etc.)

# Core Principles of Coalition Plan to Unleaded Fuel

## 1. Assure Safety (continued)

- ▶ The process for identifying and transitioning to the most viable fuel is complex and work-intensive
- ▶ Must develop FAA certification process to transition the existing fleet to a new fuel
  - Unprecedented effort to recertify entire fleet

# Core Principles of Coalition Plan to Unleaded Fuel

## 2. Minimize Impact on Existing Fleet

- ▶ The coalition is managing all current regulatory actions in an effort to ensure the continued availability of 100LL until an alternative is identified, certified and transitioned to
- ▶ The process to identify the best unleaded fuel solution will take into account the entire fleet and the impact upon all types of aircraft and operators
  - Will provide the information necessary for the marketplace to determine the best fuel at the best price

# Core Principles of Coalition Plan to Unleaded Fuel

## 3. Ensure Sustainability and Growth of GA

- ▶ The coalition is working to minimize the impact of the transition to an unleaded avgas
- ▶ The coalition will work to ensure that the unleaded fuel will be available at a sustainable price for decades to come

# Coalition Activities

## ▸ Relationship with EPA

- Years of educating the agency on complexity of issue, safety concerns, economic impacts, etc.
- Granted an extension to ANPR comment period. Coalition to submit comments that will:
  - ◆ Emphasize need for FAA leadership, address questions, highlight the need for more data and analysis, provide more information on safety and economic impacts, present a plan for transition

## ▸ Partnership with FAA

- Direct dialogue with Administrator and senior staff
- Continue to stress need for FAA leadership and attention to the issue
  - Certification hurdles, funding, staffing, etc.
- R&D support through FAA tech center activity

# Coalition Activities (continued)

## ▸ Congressional Activity

- Briefings to legislators and their staff have resulted in
  - ◆ Support for extension of the ANPR comment period
  - ◆ Congressional interest in FAA reauthorization and appropriations activities related to identifying an alternative avgas
  - ◆ Appropriation of an additional \$2M in the FAA's 2011 research and development budget specifically intended for avgas and support for increased FAA role

# Summary

- ▶ This is a very complex issue that will take a number of years to resolve
- ▶ Coalition is calling for FAA leadership and the formation of a public-private partnership
- ▶ The result will lead to one of the most significant and sweeping changes that our industry has ever experienced
- ▶ Until an alternative fuel is identified, the GA Avgas Coalition will work to ensure that 100LL remains readily available



# GA Avgas Coalition Briefing

## AirVenture 2010