100LL Transition

Where are we now?
Will we meet the 2030 goal?

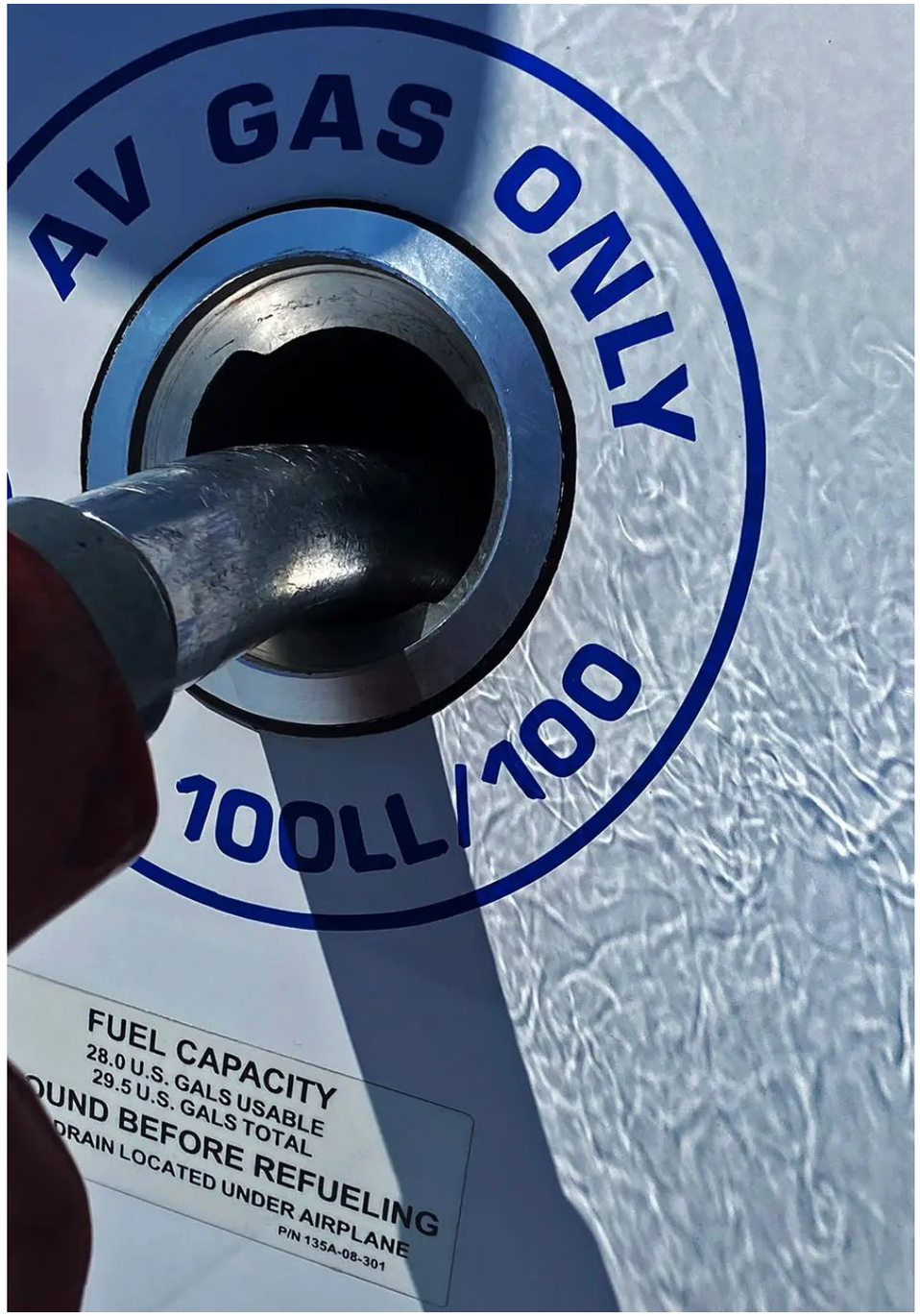
Adam White
Government Affairs

ALASKA AIRMEN'S ASSOCIATION

100LL Transition

Common ***Misconceptions***

- 2030 is a deadline.
- The EPA can ban 100LL.
- EAGLE has authority.
- FAA will pick one “winner.”
- Alaska will be exempt.
- “Direct, Drop-in Replacement”
- “It can’t be this hard!”
- “Politics have nothing to do with this.”



100LL Transition

The Current Plan

- What is an EPA Endangerment finding?
- Who has the authority to ban leaded aviation fuel?
- Where did the 2030 date come from?
- Piston Engine Aviation Fuels Initiative (PAFI-2014) vs. STC
- Will there be one fuel or many?
- We quit using leaded fuel in cars back in the ’70s. Why is this so hard?

EAGLE

Eliminate Aviation Gasoline Lead Emissions

The EAGLE initiative is a comprehensive public-private partnership consisting of the aviation and petroleum industries and U.S. government stakeholders, and a wide range of other constituents and interested parties, all working toward the transition to lead-free aviation fuels for piston-engine aircraft by the end of 2030 without compromising the safety or economic health of the general aviation industry.

flyEAGLE.org

2030

Does this affect Alaska?

- Congressional Delegation tried to help.
- 2032 is the goal now for Alaska
- What is the practicality of the extension?
- What about California’s recent legislation?

Transition to Unleaded Aviation Gasoline "Big Picture"

EAGLE Pillars (color key)

- Unleaded Fuel Evaluation & Authorization
- Research, Development & Innovation
- Supply Chain Infrastructure & Deployment
- Regulation, Policy & Programmatic Activities

LyondellBasell & VP Racing

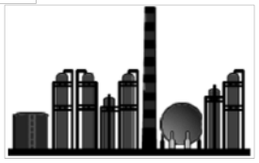
PAFI Testing Program

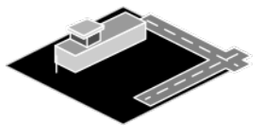
Eligible Fleet Authorization

Fleet Authorization Pathway

ASTM Production Spec.

Aircraft Modifications R&D





Licensed FAA Mechanics

Fuel Developers

Producers

Distributors

FBOs

Owners & Operators

Aircraft Level Approval Process

Approval Installation

Fuel Use Approval / Author.

Economic & Business Considerations

Clean, Dry & On Spec. Fuel • Safe Operations

Company Spec.

OR

ASTM Production Spec.

Aircraft Modifications R&D

(if needed)

NO

STC Pathway

STC Approval Process

Approved Model List (AML)-STCs

YES

GAMI

Swift

EPA Endangerment Finding

FAA / EPA Regulatory & Rulemaking Process

EPA: Environmental Protection Agency
FAA: Federal Aviation Administration
FBO: Fixed Based Operation
OEM: Original Equipment Manufacturers
PAFI: Piston Aviation Fuels Initiative
R&D: Research & Development
STC: Supplemental Type Certificate

April 2024

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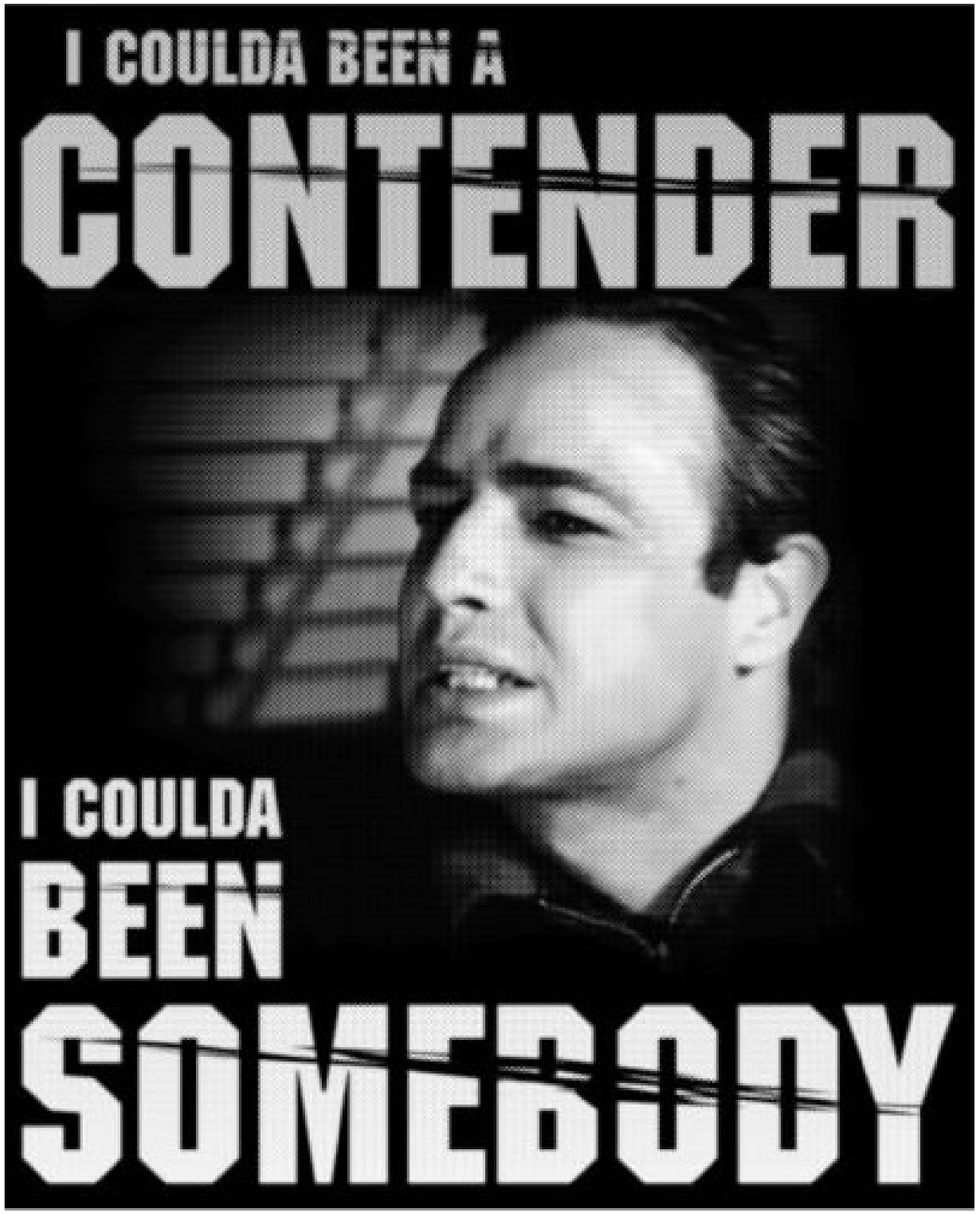
Who is still in the running?

And where they are in the process.

- **GAMI**
  - STC for all piston-power fixed-wing aircraft (Helicopter coming soon)
  - Will not participate in the ASTM process
  - Oshkosh Conspiracy
- **Swift**
  - UND valve problems with UL94
  - 100R Fuel & 172R, 172S STC
    - Going through the ASTM process
- **VP Racing**
  - UL100E
  - PAFI Route (Fleet Approval)
  - In full-scale testing
- **Lyondell Basell**
  - Dropped out of PAFI but might be back



PAFI GATE 4 – UL100E Full Scale Testing Status as of 12-Jul-2024

Detonation & Performance

6.2%

37%	Continental TSIO-520-VB
0%	*Lycoming TIO-540-J2B*
5%	Lycoming IO-540-K1A5
0%	*Continental IO-550-D*
0%	*Continental O-470-U*
0%	*P&W R-1830 S1C3-G*

Durability & Performance

(150 Hr. § 33.49 + 200 Hr. flight duty cycles)

25.0%

350 hr	Continental TSIO-550-K
0 hr	*Lycoming IO-360-C1F*
0 hr	*Air Repair W670-6N*
0 hr	*Lycoming O-360-A1A*

Aircraft Testing

(Engine Handling, Cooling Climb, Hot Fuel)

4.0%

75%	Lancair Super Legacy
0%	*Robinson R44 II*
0%	*Cirrus SR22T*
0%	*Beechcraft G36*
0%	*Cessna T206H*
0%	*Cessna 402C*
0%	*Piper PA-46-350*
0%	*Cessna 182Q*
0%	*T-6G (Harvard 4)*

Additional Testing

3.3%

10%	Propeller Vibe
0%	*Cold Starting*
0%	*Fuel Qty Sensing*

Materials Compatibility

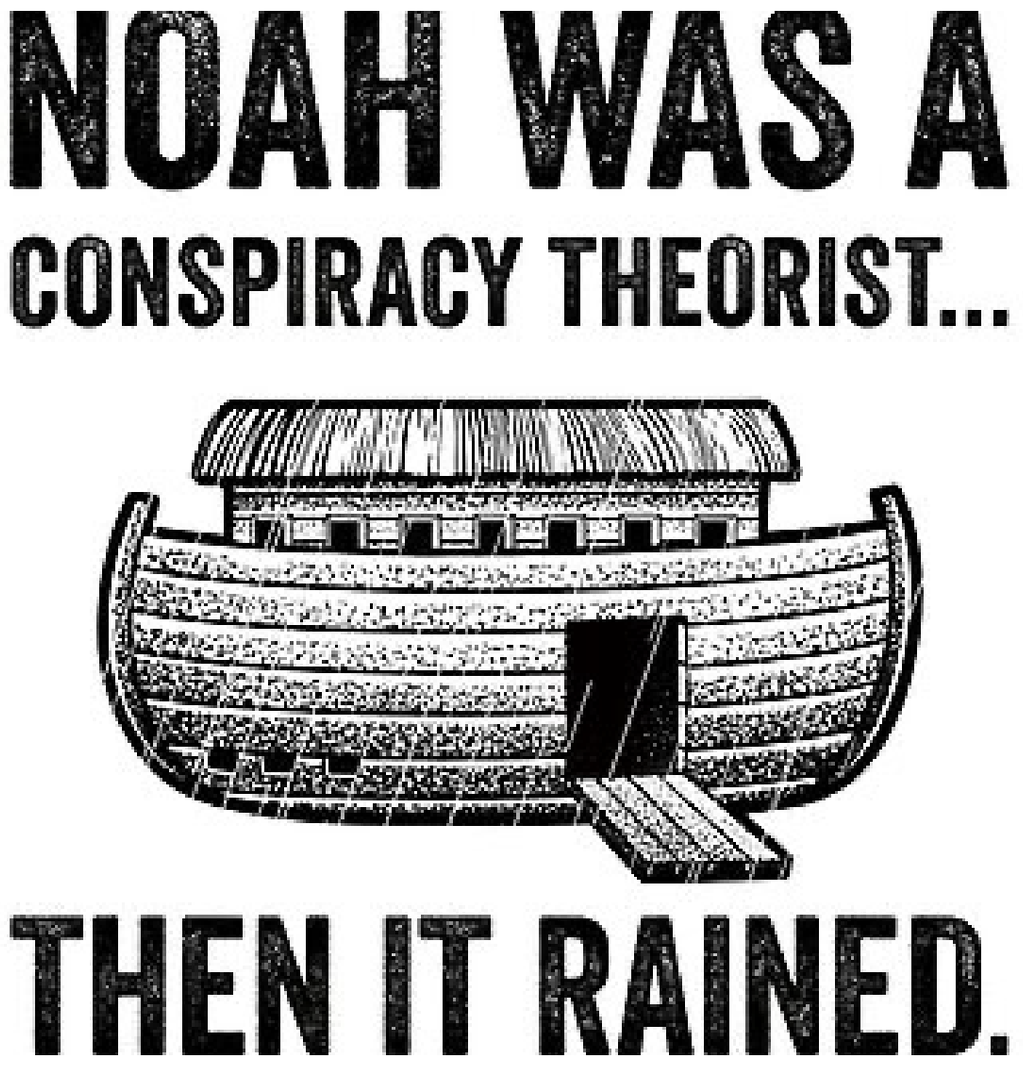
23.1%

9%	Metallics (32)
19%	Non-Metallics (26)
0%	*Finished Parts (5)*
90%	Paint Systems (10)
0%	*Fabric Systems (5)*
35%	Polysulfides (17)
100%	O-Rings (5)
20%	Aircraft Hoses (5)
0%	*Distrib. Sys. (13)*
0%	*Fuel Bladders (2)*
0%	*Comp. Resins (16)*
0%	*Composites (6 - 18)*
0%	*OEM Materials (5)*
50%	OEM Wing Test (4)

My Concerns,

Fears, Worries,
Conspiracy Theories, etc…

- Long-term Material Compatibility
- Blending Compatibility With Other Fuels
- Health and Ecological Hazards
- Supply Chain and Distribution Challenges of Alaska
- The Best Marketing Firm Wins The Race
- L48 Makes The Decision For Alaska
- Drop-in, Direct Replacement
- Tetraethyl Lead Supply



Drop-In Fuel

EAGLE's Definition

A "drop-in" fuel does not affect the airworthiness and performance of the existing aircraft and engines and typically does not require new aviation fuel-related operating limitations. An extensive qualification test program that encompasses fuel property evaluation and engine and aircraft testing would be required to determine if a new fuel is a drop-in.

Monthly Advocacy Updates

Every 3rd Tuesday at 6pm on the Airmen's YouTube channel