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County of Alameda

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9 **SUPERIOR COURT FOR THE STATE OF CALIFORNIA**

10 **FOR THE COUNTY OF ALAMEDA**

11
12 CENTER FOR ENVIRONMENTAL
13 HEALTH,

14 Plaintiff,

15 v.

16 AERODYNAMIC AVIATION, *et al.*,

17 Defendants.
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Case No. RG-11-600721

Hon. Somnath Raj Chatterjee

**DECLARATION OF JOSHUA GANG
IN SUPPORT OF DEFENDANTS'
OPPOSITION TO MOTION TO
ENFORCE AND MODIFY CONSENT
JUDGMENT**

Date: February 4, 2025

Time: 1:30 p.m.

Reservation Number: 690015831804

Complaint Filed: October 20, 2011

1 **DECLARATION OF JOSHUA GANG**

2 I, Joshua Gang, declare:

3 1. I am the Vice President, General Counsel, and Corporate Secretary of Piper
4 Aircraft, Inc. (“Piper”). I submit this declaration in support of Settling Defendants’ Opposition to
5 Plaintiff Center for Environmental Health’s (“CEH”) Motion to Enforce and Modify Consent
6 Judgment in the above-captioned matter. I have personal knowledge of the matters set forth
7 herein. If called and sworn as a witness, I could and would testify competently thereto.

8 **Background**

9 2. Piper is a manufacturer of general aviation aircraft located in Vero Beach, Florida.
10 In the aviation community, Piper is referred to as an Original Equipment Manufacturer (“OEM”).

11 3. Piper has and continues to support the transition to unleaded and sustainable
12 aviation fuels. As a member of the General Aviation Manufacturers Association (“GAMA”),
13 Piper works with other OEMs, the petroleum industry, distributors, airports, environmental
14 groups, the Federal Aviation Administration (“FAA”), and other stakeholders, through the FAA’s
15 Eliminate Aviation Gasoline Lead Emissions (“EAGLE”) program, to advance the general
16 aviation industry towards the development of an unleaded aviation fuel (“Avgas”) that will meet
17 the safety and operational needs of the entire general aviation fleet.

18 4. Piper has been manufacturing piston aircraft since 1937. Piper estimates that there
19 are currently over 75,000 Piper aircraft in use today that could theoretically use General Aviation
20 Modifications, Inc.’s (“GAMI”) G100UL Avgas (“G100UL”), the Avgas that CEH contends
21 should be the only 100-grade Avgas sold in California.

22 5. Piper has earned a reputation in the general aviation industry for producing safe
23 and reliable aircraft. Piper’s first priority is the safety of our owners, pilots, and passengers.

24 **Lack of Information to Verify G100UL’s Safety and Material Compatibility**

25 6. Over the 87 years that Piper has been manufacturing aircraft, Piper has utilized a
26 myriad of different fuel system configurations, components, and materials. It is impractical, if
27 not impossible, for Piper itself to evaluate and physically test all configurations of its aircraft for
28 compatibility with G100UL.

1 7. Unleaded Avgas may be approved in two manners. First, the FAA’s Piston
2 Engine Aviation Fuels Initiative (“PAFI”) program was established in 2014 to support the
3 evaluation of candidate-unleaded Avgas, with the goal of ultimately qualifying a fleet-wide
4 solution. Once a candidate Avgas is qualified for PAFI testing, the FAA tests it using methods
5 created through collaboration with industry. When a fuel is tested through PAFI, OEMs such as
6 Piper, as well as their engine suppliers, have access to data that allow them to verify that the fuel
7 can be used safely in their various types of aircrafts and engines.

8 8. Second, approval of an unleaded Avgas may be obtained with a supplemental type
9 certificate (“STC”). When the FAA issues a type certificate (“TC”), it approves the design of an
10 aircraft and all component parts (including propellers, engines, control stations, etc.). A TC
11 signifies that the design is in compliance with applicable airworthiness, noise, fuel, venting, and
12 exhaust emission standards. An STC is a TC that the FAA issues to the applicant (not the OEM)
13 when the applicant has received approval from the FAA to modify an aeronautical product from
14 its original design.

15 9. Unlike the PAFI process, there is no FAA guidance or established industry process
16 for a TC holder to evaluate an STC candidate fuel that will be used in the aircraft or equipment
17 for which it holds a TC. Rather, the fuel manufacturer applying for an STC works directly with
18 the FAA, without the feedback or input of OEMs and TC holders. There is no way for OEM TC
19 holders like Piper, as well as engine suppliers, to obtain technical information from the FAA
20 related to an applicant’s STC application.

21 10. To date, GAMI has refused to publicly release the technical supporting
22 information regarding its G100UL STC submission. Piper has never seen the technical
23 information GAMI submitted to the FAA in support of this submission.

24 11. GAMI has also refused to develop or release a standard through ASTM
25 International (“ASTM”) for G100UL. The FAA does not regulate the production, distribution,
26 handling, operation, and maintenance of aviation fuel before it reaches aircraft fuel tanks. As a
27 result, the FAA’s STC examination process only focuses on the fuel’s safety and compatibility
28 from the moment it is placed in the aircraft onward. An STC does not examine or establish

1 standards for every other step in the production process, including, for example, a fuel's
2 compatibility with fuel truck tanks, storage tanks, or pumping equipment, or its vapor pressure.

3 12. Industry standards like ASTM standards fill the gap between the refinery and the
4 aircraft by ensuring that Avgas meets specified standards at every step in the production process.

5 13. Without an ASTM standard and supporting technical information from GAMI,
6 Piper cannot make a reasonable determination as to the safety, airworthiness, or compatibility of
7 G100UL in any model of Piper aircraft.

8 **Engine Manufacturer's Non-Approval of G100UL**

9 14. G100UL has also not been approved by any OEM engine manufacturers, who, like
10 Piper, do not have access to information to verify that G100UL can be safely used in their
11 engines.

12 15. Piper currently uses engines from Lycoming Engines ("Lycoming") in our aircraft.
13 Lycoming has not approved G100UL for use in any of its engines. Lycoming specifically
14 instructs that the "use of any STC approved fuel constitutes modification of the engine in a
15 manner not approved by Lycoming, and the engine no longer meets its original type design."
16 Attached hereto as **Exhibit A** is a copy of Lycoming's Unleaded Fuels advisory, which is
17 available publicly at <https://www.lycoming.com/fuels>.

18 16. In the past, Piper has used engines from Continental Aerospace Technologies
19 ("Continental") in our aircraft. Continental has also not approved G100UL for use in any of its
20 engines.

21 17. As a result, G100UL has not been approved for use in any engine used in the
22 75,000-plus Piper aircraft that could theoretically use G100UL.

23 **Non-Approval of G100UL in Piper Aircraft**

24 18. Piper does not authorize the use of G100UL in any of its aircraft.

25 19. Without sufficient information about the properties of G100UL, Piper is unable to
26 evaluate the compatibility, performance characteristics, or the pilot operating handbook operating
27 envelope(s) for the many models of Piper aircraft that could use G100UL. As a result, Piper
28 cannot make a reasonable determination as to the safety, airworthiness, or compatibility of

1 G100UL in any model Piper aircraft. Piper will not authorize the use of G100UL in its aircraft
2 until it is provided sufficient information to make these determinations and does so to its
3 satisfaction. Nor will Piper authorize the use of G100UL in its aircraft absent GAMI obtaining an
4 ASTM standard for G100UL.

5 20. Further, until Lycoming and Continental approve the use of G100UL in all engines
6 used in Piper aircraft, Piper cannot and will not authorize the use of G100UL in any model Piper
7 aircraft.

8
9 I declare under penalty of perjury of the laws of the state of California that the foregoing
10 is true and correct. Executed this XXth day of January, 2025, at Vero Beach, Florida.

11
12 By: Josh Gang
13 Joshua Gang
14 PIPER AIRCRAFT, INC.

Digitally signed by Josh Gang
DN: cn=Josh Gang, gn=Josh Gang, e=US United States I+US
United States or Piper Aircraft, Inc. or Legal Dept,
o=Josh Gang@piper.com
Reason: I have reviewed this document
Location:
Date: 2025-01-07 16:20:05-00

EXHIBIT A



Learn More About Lycoming's Efforts Around Unleaded Fuels

Lycoming remains committed to finding a comprehensive fuel solution that will allow a fleet-wide transition to lead-free aviation fuels for piston-engine aircraft

TIPS

Lycoming Engines has been producing piston aviation engines for over 95 years, and we “build every engine as though we were going to fly it ourself!” Safety is an utmost priority, and we strongly support efforts to eliminate lead from aviation fuels. For this reason, Lycoming has been researching fuels for decades and is an industry leader in the Piston Aviation Fuels Initiative (PAFI) and the Eliminate Aviation Gasoline Lead Emissions (EAGLE) initiative.

As a result of these pathbreaking efforts, Lycoming has approved several unleaded fuels for use in Lycoming Engines.

Please reference our [Service Instruction 1070](#) for approved fuels for our aircraft engine models.

Through our progress, we remain committed to finding a comprehensive fuel solution that will allow a fleet-wide transition to lead-free aviation fuels for piston-engine aircraft that does not compromise the safety or economic health of the general aviation industry. We take our work seriously to keep our fleet safe, and our approvals process for new fuels follows strict FAA and industry standards and guidelines. This process includes both the evaluation of how fuels will perform in our engines and options for improving the design of our products to work with commercially available unleaded fuels.

Lycoming will continue to strive to support a future unleaded fleet while working to ensure that our products remain safe and reliable.

Q: What is PAFI?

A: The Piston Engine Aviation Fuels Initiative (PAFI) program was established in 2014 to support the evaluation of candidate-unleaded fuels to replace approved leaded gasoline, with the objective of ultimately qualifying a fleet-wide solution.

To learn more about PAFI, visit their website at www.faa.gov.

Q: *What is the EAGLE initiative?*

A: According to their website, Eliminate Aviation Gasoline Lead Emissions (EAGLE) is a broad and collaborative initiative among the Federal Aviation Administration (FAA), the general aviation (GA) community, fuel suppliers and distributors, airports, engine and aircraft manufacturers, research institutions, associations, local communities, environmental groups and other key stakeholders. EAGLE partners are committed to ensuring the GA sector can safely transition to a lead-free future by the end of 2030 (at the latest) without affecting the safe and efficient operation of the piston-engine fleet. EAGLE's initiative has four pillars: address the unleaded fuel evaluation and authorization; research, development, and innovation; supply chain infrastructure and deployment; and regulation policy and programmatic activities.

To learn more about EAGLE, visit their website at www.flyeagle.org.

Q: *How are PAFI and EAGLE different?*

A: PAFI was established in 2014 to support the evaluation of candidate-unleaded fuels to replace approved leaded gasoline, with the objective of ultimately qualifying a fleet-wide solution. Once a candidate fuel formulation is qualified for PAFI testing, the FAA tests it using methods created through collaboration with industry. In 2022, the FAA and industry groups (GAMA, AOPA, etc) recognized a need to implement a comprehensive cross-sector approach to safely eliminate leaded aviation fuel by the end of 2030 without impacting the safe and efficient operation of the piston-engine fleet. PAFI became an integral part of one of the four critical EAGLE pillars tasked with evaluation and authorization of the unleaded fuel (UL).

In addition to PAFI, EAGLE recognizes that the FAA has allowed an alternative pathway for unleaded fuels to become approved via the traditional Supplemental Type Certificate (STC) process.

Q: Why is Lycoming a proponent of PAFI versus STC?

A: Fuel manufacturers can pursue approval either via PAFI or through a traditional aftermarket STC process. As an OEM, Lycoming is committed to supporting PAFI because it provides for a holistic evaluation of the candidate fuels through the collaboration of government and industry partners. This evaluation includes material compatibility, evaluation of toxicity, engine testing for detonation, endurance, flight testing and operability; as well as review of operational concerns to determine that a fuel is fit-for-purpose. Safety is of utmost importance, and Lycoming wants to align with the collective industry expertise. Upon final testing, PAFI allows for the FAA administrator to grant fleet-wide approval for fuel.

Alternatively, Type Certificate (TC) holders like Lycoming do not typically support the STC process, and there is no FAA guidance or established industry process for a TC holder to evaluate an STC candidate fuel. Instead, a fuel manufacturer applying for a STC works directly with the FAA and without the benefit of TC holders like Lycoming. Often TC holders are not provided critical technical information that they would need to determine if the candidate fuel is safe. As a result, per 14 CFR 21.115, the STC holder is ultimately and exclusively responsible for demonstrating that its fuel meets the FAA's airworthiness requirements.

Because Lycoming believes that the flying public is best served by a transparent, collaborative, documented, and cross-industry process to ensure that each candidate fuel is safe, we urge each candidate fuel maker to pursue approval via PAFI.

Q: What is ASTM?

A: ASTM International states, "The high quality of ASTM International standards is driven by the expertise and judgment of members who represent industry, governments, academia, trade groups, small and medium size enterprises, consumers, and others. Their contributions, and the consensus process, are why ASTM international standards are known for high quality and market

relevance across many industries.” ASTM is broad reaching internationally accepted technical standards for a wide range of materials and products utilized by major industries, beyond just fuels and aviation.

When a fuel has received an ASTM specification, the industry can be assured that the specification is well conditioned, addressing the key facets of the fuel performance characteristics, compositional requirements, and that the tests for those pieces have been vetted for precision and accuracy. This is especially important for the novel ingredients of fuels offerings. Lycoming applies ASTM and other voluntary consensus specifications to identify potential fuels for approval. Learn more about ASTM at their website, www.astm.org.

Q: What fuels are approved by Lycoming Engines?

A: Approved fuels are identified in the most current revision of [Service Instruction 1070: Specified Fuels for Spark-Ignited Gasoline Aircraft Engine Models](#).

Q: How does a fuel get added to Service Instruction 1070 as an approved fuel?

A: Safety of the Lycoming engine fleet is of the utmost importance. Before it approves a fuel for use in its engines, Lycoming must first undertake a rigorous evaluation to ensure that the fuel will operate predictably within the engine’s entire operating regime. This evaluation includes a full certification plan & data package that is ultimately provided to the FAA. Once approved, the fuel becomes part of the engine’s TC and is listed in [SI 1070](#).

Q: Who decides which fuels are approved for use in Lycoming Engines?

A: After rigorous evaluation to demonstrate that the fuel will perform predictably and safely in all aspects of the engine’s operating envelope, Lycoming submits its data and certification package to the FAA for review and approval. Please reference [SI 1070](#) for the latest list of FAA approved fuels for use in Lycoming engines.

Q: Has Lycoming tested GAMI's G100UL fuel?

A: No. GAMI chose not to participate in the collaborative PAFI process and instead chose to pursue approval via a direct STC process. Because GAMI submitted its data direct to the FAA, Lycoming was not involved in the certification or testing of GAMI's G100UL fuel. In addition, because there is no method for a TC holder to obtain technical information related to an STC, Lycoming does not have the technical information necessary to make any determination as to the airworthiness of G100UL fuels when used in Lycoming engines.

Q: Why hasn't Lycoming approved GAMI's G100UL fuel?

A: Because STCs are separately approved by the FAA without TC holder involvement, holders like Lycoming do not typically separately approve them after the fact. In essence, GAMI chose to pursue an aftermarket approval instead of collaboratively working with industry partners through the PAFI process.

Notwithstanding GAMI's decision to pursue an STC, Lycoming is committed to finding an unleaded solution in any form, and we strongly encourage GAMI to resubmit its fuel for testing through the collaborative PAFI process.

In addition, Lycoming has remained willing to test any candidate fuel, including those submitted to PAFI or approved via STC (like G100UL), so long as we can ensure our testing supports the safety of the flying public. To do this, Lycoming must be provided with appropriate technical documentation so we know what we are testing, and we must be able to provide appropriate guidance to the FAA, the industry, and the flying public regarding the use of any tested fuel in our engines. To date, GAMI has advised that it will not provide Lycoming with access to any technical information related to G100UL fuel unless we agree that we will not disclose our findings. In other words, GAMI has demanded that as a condition to allowing Lycoming to test its fuel, Lycoming must agree to conditions that would limit our ability to disclosure.

To ensure the safety of the flying public and to meet its obligations as a TC holder, Lycoming has refused this "gag-restriction." If we determine that any candidate fuel creates a safety issue when used in our engines, we must be able to appropriately warn the public and the FAA. We hope that

GAMI will drop its gag-restriction and join the collaborative industry process so that G100UL can be evaluated and approved in a manner that ensures the safety of the flying public.

Q: What happens if I run GAMI's G100UL (or any fuel that is not listed in SI1070 as an approved fuel) in my Lycoming Engine?

A: G100UL has been approved via STC and not via PAFI. As a result, customers should contact GAMI as the STC holder for guidance regarding use of G100UL, including warranty coverage. Because we do not have technical information associated with the STC, Lycoming cannot provide guidance on use of G100UL.

Lycoming evaluates warranty claims on a case-by-case basis in accordance with the terms of its Limited Warranty. However, customers should be aware that Lycoming's Limited Warranty excludes damage associated with operations outside Lycoming's published specification, including the use of non-approved fuels. In addition, use of any STC approved fuel constitutes modification of the engine in a manner not approved by Lycoming, and the engine no longer meets its original type design.

Lycoming recommends customers use fuels identified in ***Service Instruction 1070***.

Stop back to this webpage for the most up-to-date information around Lycoming's unleaded fuel efforts.

Last Updated: July 18, 2024

Advanced Technology

Lycoming offers advanced technology services to learn how your engine is running including manufacturing, engine testing, diagnostics & material analysis.

Send your engine to our advanced facilities to undergo advanced testing or receive metallurgical analysis to diagnose your engine. Our flight simulators ensure a high degree of flight readiness are used to serve customers worldwide.

LEARN MORE