MINUTES
REGULAR COMMISSION MEETING
THE PORT OF PORTLAND
November 13, 2024

Following due notice to the public, the regular meeting of the Board of Commissioners of the Port of Portland was held at 9:30 a.m. in the Chinook conference room of the Port's administrative offices, located at 7200 NE Airport Way, and virtually for those Commissioners, members of the public, presenters and staff unable to attend in person. The meeting was streamed live on the Port's website and YouTube channel.

A recording was made of these proceedings. The recording, and the full Commission agenda, is available on the Port's website: www.portofportland.com. The following written minutes constitute a summary of the proceedings.

QUORUM

Commissioners present were: Katy Coba, President, presiding; Rukaiyah Adams; Mike DeVaughn; Sam Johnson; Richelle Luther; Meg Niemi; Ketan Sampat and Stuart Strader. Also present were Curtis Robinhold, Executive Director, and participating staff members.

LEAVE OF ABSENCE

Commissioner Coba called for a motion to grant a leave of absence to Commissioner Lam, who was out of town. Commissioner Sampat moved to grant the leave of absence. Commissioner Luther seconded the motion, which was put to a voice vote. Commissioners Adams, Coba, DeVaughn, Johnson, Luther and Strader voted in favor of the motion. Commissioners Niemi and Strader were not present for the vote.

MINUTES

Commissioner Coba called for a motion to approve the minutes of the Regular Commission Meeting of October 9, 2024. Commissioner DeVaughn moved to approve the minutes. Commissioner Johnson seconded the motion, which was put to a roll call vote. Commissioners Adams, Coba, DeVaughn, Johnson, Luther and Strader voted in favor of the motion. Commissioners Niemi and Strader were not present for the vote.

EXECUTIVE DIRECTOR'S REPORT

Curtis Robinhold addressed the Commission and audience; his comments covered the following general topics:

- Welcomed the new Port employees in the audience;
- Acknowledged the Port's monthly safety champions and asked T J Simoneau, Manager of Baggage Handling System maintenance and TCORE Construction Maintenance Liaison, for this month's safety message;
- Noted the recent trade mission to South Korea and Japan to meet with a few of our regional partners to strengthen our connections with key trade partners abroad and affirm that Portland and Oregon are good places to do business. He thanked Commissioner Sampat for leading the delegation;

- Noted Senators Wyden and Merkley recently announced $3 million in Bipartisan Infrastructure Law funding for PDX through the FAA's Airport Terminal Program, which will help us renovate the 30-year-old entrance to PDX. Senators Wyden and Merkley also announced a federal investment of $2.77 million in Clean Marine funding to further our work to decarbonize and improve natural disaster resilience;

- Said over the past month our teams have worked with partners on a number of new features that make travel at PDX easier and more inclusive for everyone. More of PDX is now on GoodMaps, a free audio-visual guidance application that helps travelers who are blind, low-vision, deaf or hard of hearing. The entire airport is mapped, including the new main terminal, as well as outdoor pedestrian areas. With the help of AARP and Travel Oregon, we installed a series of hearing loops systems in baggage claim, making it easier for passengers with hearing aids or cochlear implants to communicate with our staff by delivering clean, amplified sound in a busy area of the airport. And, with the help from our friends at Alaska Airlines, we added a partial plane replica to our Sensory Room, which offers a space where neurodivergent or anxious travelers can get familiar with the look and feel of airplane seats before boarding; and

- Noted the sad news that Bob Sallinger, Executive Director of Willamette Riverkeeper, passed away. Bob spent the better part of 30 years at Portland Audubon, now called the Bird Alliance of Oregon, where he championed the protection of wildlife and urban greenspaces. Bob advocated passionately and effectively for the conservation and future of West Hayden Island, was heavily involved with PDX Airport Futures and was a thought partner on dredged material placement and the Portland Harbor Superfund.

Commissioner Coba called for a motion to approve the Executive Director's Report. Commissioner Luther moved to approve the Executive Director's Report. Commissioner Sampat seconded the motion, which was put to a voice vote. Commissioners Adams, Coba, DeVaughn, Johnson, Luther, Niemi, Sampat and Strader voted in favor of the motion.

PUBLIC COMMENTS

Written comments were received from Elena Byrgazova regarding aircraft noise over her home.

Jim Lubischer, a resident of Hillsboro, addressed the Commission regarding leaded aviation fuel at Hillsboro Airport and its effects on children. His written statement is attached to the minutes.

Miki Barnes, a resident of Banks, addressed the Commission regarding leaded fuel emissions at various Oregon airports and their rankings based on a 2017 Environmental Protection Agency National Emissions Inventory. Her written statement is attached to the minutes.

GENERAL DISCUSSION

Native American Heritage Month

Nikoyia Phillips, Director of Community Engagement and Outreach, provided a brief presentation for Native American History Month and read a land acknowledgement.

Annual Audit Presentation

Bob Burket, Controller, presented an overview of the Fiscal Year 2024 results, focusing on the Port's two major financial components: PDX and the General Fund.

Ashley Osten, Partner, and David Levitskiy, Manager, from Moss Adams LLP, summarized the results of the audit and briefly reviewed the required communications.

Following the presentation there were questions from the Commission.

CONSENT ITEMS

No presentation was made for the following agenda items, which were brought before the Commission as the Consent Agenda.

Agenda Item No. 1

READOPTION OF COMMISSION POLICY NO. 6.1.2 – INVESTMENTS

> BE IT RESOLVED, That Port of Portland Commission Policy No. 6.1.2, *Investments*, dated November 13, 2024, is hereby readopted; and
>
> BE IT FURTHER RESOLVED, That a copy of Port of Portland Commission Policy No. 6.1.2, *Investments*, shall be attached to the minutes of this meeting.

Agenda Item No. 2

HILLSBORO ENTERPRISE ZONE BOUNDARY AMENDMENT

> BE IT RESOLVED, That the Port of Portland Commission consents to the boundary amendment to the Hillsboro Enterprise Zone, located within Port of Portland boundaries, to provide an incentive to encourage existing or new companies to invest and create jobs within the zone; and
>
> BE IT FURTHER RESOLVED, That the Executive Director or his designee is authorized to execute the necessary documents on behalf of the Port of Portland Commission in a form approved by counsel.

Following the reading of the titles of the consent items by Commissioner Coba, Commissioner Strader moved to approve the recommendations. Commissioner Luther seconded the motion, which was put to a voice vote. Commissioners Adams, Coba, DeVaughn, Johnson, Luther, Niemi, Sampat and Strader voted in favor of the motion.

ACTION ITEMS

Agenda Item No. 3

ADOPTION OF FISCAL YEAR 2024-2025 EXECUTIVE DIRECTOR PERFORMANCE OBJECTIVES

This agenda item recommended that the Commission review and establish Fiscal Year 2024-2025 Executive Director Performance Objectives.

Commissioner Coba presented the recommendation as follows:

> BE IT RESOLVED, That the Port of Portland Commission adopt the Executive Director Performance Objectives to be used for Fiscal Year 2024-2025.

Commissioner Coba called for a motion to approve the recommendations. Commissioner DeVaughn moved to approve the recommendations. Commissioner Strader seconded the motion, which was put to a voice vote. Commissioners Adams, Coba, DeVaughn, Johnson, Luther, Niemi, Sampat and Strader voted in favor of the motion.

Agenda Item No. 4

CONVENIENCE RETAIL CONCESSION LEASES – PORTLAND INTERNATIONAL AIRPORT

This agenda item requested approval to enter into concession lease agreements with the successful proposers to the 2024 Convenience Retail Concessions Solicitation at Portland International Airport, Marshall Retail Group, LLC and Paradies Lagardere @ PDX, LLC.

Machelle Campbell presented the Executive Director's recommendations as follows:

> BE IT RESOLVED, That approval is given to enter into a concession lease agreement with each of Marshall Retail Group, LLC and Paradies Lagardere @ PDX, LLC from the 2024 Convenience Retail Concession Solicitation at Portland International Airport, consistent with the terms presented to the Commission; and
>
> BE IT FURTHER RESOLVED, That the Executive Director or his designee is authorized to execute the necessary documents on behalf of the Port of Portland Commission in a form approved by counsel.

Following the presentation there was a question from Commissioner Johnson.

Commissioner Coba called for a motion to approve the recommendations. Commissioner Luther moved to approve the recommendations. Commissioner Niemi seconded the motion, which was put to a voice vote. Commissioners Adams, Coba, DeVaughn, Johnson, Luther, Niemi, Sampat and Strader voted in favor of the motion.

Agenda Item No. 5

PERSONAL SERVICES CONTRACT AMENDMENT – TERMINAL CORE REDEVELOPMENT PROJECT – PORTLAND INTERNATIONAL AIRPORT

This agenda item requested approval of two contract actions related to the Terminal Core Redevelopment project at Portland International Airport:

- Design Contract Amendment. Amend the existing personal services contract with ZGF Architects LLP, in the amount of $15,000,000 to provide primarily for construction administration services from December 2024 until December 2025.
- Commissioning Contract Amendment. Amend the existing personal services contract with Burns & McDonnell Engineering Company, Inc., in the amount of $2,389,516 to provide for commissioning services from December 2024 until the end of the project.

George Seaman presented the Executive Director's recommendations as follows:

> BE IT RESOLVED, That approval is given to amend the existing personal services contract with ZGF Architects LLP for the Terminal Core Redevelopment project at Portland International Airport, consistent with the terms presented to the Commission; and
>
> BE IT FURTHER RESOLVED, That approval is given to amend the existing personal services contract with Burns & McDonnell Engineering Company, Inc. for the Terminal Core Redevelopment project at Portland International Airport, consistent with the terms presented to the Commission; and
>
> BE IT FURTHER RESOLVED, That the Executive Director or his designee is authorized to execute the necessary documents on behalf of the Port of Portland Commission in a form approved by counsel.

Following the presentation there were questions from the Commission.

Commissioner Coba called for a motion to approve the recommendations. Commissioner Sampat moved to approve the recommendations. Commissioner Strader seconded the motion, which was put to a voice vote. Commissioners Adams, Coba, DeVaughn, Johnson, Luther, Niemi, Sampat and Strader voted in favor of the motion.

The meeting adjourned at 11:12 a.m.

_____
President

_____
Assistant Secretary

_____
Date Signed

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Submission to the *Port of Portland Commissioners*

For Meeting of 11-13-24

Transitioning to Unleaded Fuel (G100UL) at HIO

Respectfully submitted by
James T. Lubischer, MD (Retired Pediatrician)

Contents

Lubischer Summary:

The *Port of Portland's* airport in Hillsboro is one of the **10 top emitters of Lead** in the U.S.

Studies have concluded that **blood lead levels are higher the closer children live near airports** where 100LL Avgas is used.

The CDC has concluded that **there is no known safe blood lead level**.

Studies have concluded that **lead causes childhood brain damage** (reduced grey matter in regions of the brain known to govern executive judgment which can lead to impulsivity, poor mood regulation), which has been associated with ADHD, speech difficulties, behavioral problems, failure to complete high school, lowered IQ, pregnancy and aggression as a teen, criminal behavior as a young adult...

On 6-14-23 at the Port's Commission Meeting at minute 40:08 the Port stated: " *We are one of only six airports nationwide participating in the FAA's EAGLE initiative ... Our work with EAGLE will insure that* ***once universal unleaded fuel is available, the infrastructure and policies are in place, to insure transition and adoption***."

A "universal" fuel "G100UL" is available for all fixed-wing aircraft and all rotary-craft engines. (G100UL is also *FAA* approved for 98% of rotary airframes to date.) Pursuant to Title 49, USC Section 47107(a)(22) the Port may prohibit 100LL fuel sales at HIO. Because G100UL is fungible (can be mixed) with Avgas 100LL so current infrastructure can be used.

While a statewide transition to G100UL is laudable, that should not delay the prohibition of Avgas 100LL at the Port of Portland's airport in Hillsboro! The Port is responsible for their airports' lead pollution, not for the rest of Oregon's airports.

> In 1969
> **Environmentalist Rene Dubos Warned**:
> "...the [lead] problem is so well-defined, so neatly packaged, with both causes and cures known that if we don't eliminate this social crime, our society deserves all the disasters that have been forecast for it".

Transitioning to Unleaded Fuel (G100UL) at HIO
(Transcription of Port Commissioners Meeting of 10-9-24, with "*Lubischer Comments*".

(15:55) Miki Barnes: I'd like to enter into the record two articles. The first is entitled "*Airlines, Fertility and Pollution*". The authors of this article found elevated levels of PM 2.5 and lead beneath overhead flightpaths during the cruise phase of flights. Quote: "*Our findings suggest that even minimal exposure to PM 2.5 and lead from airplane emissions can have significant health impacts evidenced by lower birthrates and reduced fertility rates. Combined with the growing body of evidence on the high cost of air pollution this paper underscores the need for policies to mitigate aviation related pollution*." Unquote. Oregon where annual deaths now outnumber births ranked fifth among all states in fertility rate declines. In this regard, it is noteworthy that birth rate data for the two primary zip codes in Oregon, 97124 and 97123, experienced a 16% decline in births between 2010 and 2022. Surrounding Washington County Zip Codes that are also subject to frequent flight training and pilot activity in Forest Grove , Cornelius and Banks have also experienced significant birth count declines.

(16:35) **The second item for the record is an October 2024 *Aviation Consumer* article entitled "*High Octane Unleaded, Where Are We*" by Rick Durden. It talks about the disinformation campaign being waged by the FAA EAGLE program to block GAMI's FAA approved, rigorously tested G100UL from being distributed to airports in this country. It also talks about the 10 year history of the FAA's *Piston* ~~Engine~~ [*Aviation*] *Fuel Initiative* to replace leaded aviation gas. In Durden's words, PAFI has failed after more than 40 million in taxpayer dollars, it delivered nothing. I just want to remind you that GAMI fuel is available. There are a million gallons ready for distribution and it's being blocked by EAGLE and by distributors. So you do not have to continue poisoning these communities with lead.**

You're making a choice to. (17:45)

-----END of Miki Barnes' Testimony -----

Lubischer Comment 11-12-24

Rick Durden's analysis is a must read. Mr. Durden's article sums up by saying: *"GIOOUL has demonstrated its viability. As an aircraft owner, we're ready for the benefits of a high-octane, unleaded avgas—we want more BTUs per gallon, longer oil change intervals and TBOs and no longer having to deal with fouled plugs. In our opinion, there's no excuse for any more delivery delay*." [**See copy of Rick Durden's article at end of this transcript**. **Everyone** should read Mr. Durden's assessment regarding transitioning to unleaded fuel.]

(18:05) Jim Lubischer: Good Morning. I'm a pediatrician and I'm here because of Leticia. I ask you to please see my written testimony and to have it placed into today's minutes. I'm here because children that live or go to school near the *Hillsboro Airport* breath air containing lead, every day. Today I'm optimistic that this lead pollution can cease within the next 1-2 months. I'm optimistic because **there are a million gallons of lead-free fuel sitting in a tank in Louisiana**.

G100UL, is the only FAA approved unleaded fuel for all fixed wing aircraft engines and airframes, and for all helicopter engines.

I'm optimistic because, **pursuant to the *FAA Reauthorization Ac*t, the Port can now prohibit lead containing fuel at HIO as soon as the Port provides G100UL to HIO.**

I know **the *PAFI/EAGLE Initiative* currently have no candidates** remaining that their working on...for an unleaded fuel..

Lubischer Comment 11-12-24

Regarding the 2 most recent PAFI / EAGLE candidates:
Afton/ Phillips66's 100 octane unleaded fuels "paused" testing of 100M after a "*major test failure*"
Lyondell/VP Racing's UL100E has been *"temporarily suspended"*. Later says its *"impossible"* See:
https://thepilotsplace.com/forum/index.php?threads/unleaded-replacement-for-100-ll-is-not-possible-

The cost of G100UL is offset by reduced maintenance costs.

Lubischer Comment 11-12-24

Reed-Hillview Airport in California now has **G100UL**. [See page 8 at bottom.]
Cost = $6.99 per gallon

At HIO **100LL** cost: =$7.65 (AEROAIR) (As of 11-11-24)
=$7.55 (Hillsboro Aviation)
Hillsboro Aero Academy cost: $????

G100UL can be mixed with current leaded fuel.

Distribution of this fuel can be done by current distributors or by *Vitol Aviation* which produces the fuel.

Mr. George Braly has offered to set up a 3-way conversation with the Port, with the third participant, would be Vitol Aviation. I strongly, strongly encourage this.

I am unaware if the Port has contacted Mr. Braly / *Vitol Aviation* Lubischer Comment 11-12-24

Perhaps the Port can be the first in the nation to stop polluting our air with lead from aircraft. In closing, I mentioned that I was here because of Leticia. Leticia was a 2 year-old patient of mine who's blood tested positive for lead. We talked about possible reasons. When I asked her if she lived near the Airport her mother said yes. She asked what could she do? I told her that she could move. She said she couldn't because she was on Welfare. Thank you. (20:10) [END of Lubischer comments.]

(26:40) Tylor Hall: **Yes, my name is Tylor Hall, I'm your field service manager for GAMI [the developer of] the G100UL unleaded Avgas. My job would be to come to Port of Portland when the product is available, to instruct the pilots and the FBOs the proper operation of their aircraft on our new fuel. I'll defer my time to Mr. Tim Roehl**... .

(27:35) Tim Roehl: Good morning. My name's Tim Roehl, I'm president of GAMI, which is *General Aviation Modification, Inc*., in Ada, Oklahoma. **And we are the developer of the G100UL high octane unleaded aviation gasoline. I'm here to provide support and affirm that we have a fuel that works for all general aviation piston aircraft.** After 14 years in certification a small private business has managed to break through the politically entangled technical consideration of how do we get rid of the lead in the aviation gasoline we use today. This has been an independent effort by our company in recognition of the challenges that exist in both the development and certification as well as in the deployment. **We are fortunate now to have this FAA certification on a broad basis. It's done under what is called *Supplemental Type Certificate* and these STCs are available** for purchase and we're encouraged by the Port of Portland's interest in ceasing the sale of the 100 low-lead fuel and offering our

G100UL. We were fortunate to have visitors from the Port of Portland earlier this year, both Kama Simonds and Nathan Hart [Lubischer: ???Tim might have meant to say Nathan **Grimes**. See: *Port of Portland - Hillsboro Airport* ???] visited our facility to learn more about the fuel and its deployment and **we stand ready, along with *Vitol Aviation*, which has produced in excess of a million gallons that is currently available and will soon be flowing to various communities, mostly on the west coast**. And, we appreciate the interest and we're here to support it. Thank you. (29:28)

(29:28) **.....**

(32:56) With that, I will call on Dan Pippenger to update us and Steve Nagy to present an overview regarding the Hillsboro Airport.

(33:17) Mr. Pippenger: ...I think, since we're out in Hillsboro we thought it would be a good time to give kind of a general overview of the Port's facility here in Hillsboro, the Hillsboro Airport. (33:20) **Steve Nagy the director of airport operations** is going to give the presentation and I'll stay up here with him, (33:37) and if you have any questions we'll entertain them of course. (33:40) What's important I think to note about the Hillsboro Airport is we think about it as part of a system of airports. It doesn't really stand on its own. It's a very important airport in regard to PDX and Steve will explain that in a little bit. And, of course, it's one of the three airports in the Port's portfolio along with PDX, Portland International Airport and Troutdale Airport. (34:00) It also is the second busiest airport in the State of Oregon...

(34:22) Mr. Steve Nagy: ...Good morning Commissioners... HIO is 900 acres in size... wholly incorporated within Hillsboro... 3 runways, 2 parallel and a cross-wind runway... about 20 on airport businesses... about 50 based business jets... about 300 aircraft in general... We are the second busiest airport in the state... a little over 180,000 take offs and landings in 2023 [at HIO]... (35:22) **We have 3 Fixed Based Operators**...all local... rooted in the community here... **there is flight training...** (36:45) tax revenue to Oregon : $7 million...

(40:20) Mr. Steve Nagy: As we talked about, and as community members have talked about, and I know we've talked about to the Commission, Dan and I, **unleaded aviation fuel is the future. We are continuing with our efforts on that. As Tim from GAMI and George Braly, who was mentioned here, our teams have actually gone to visit that manufacturer, I don't know how many other airports have gone, (40:40) we sent our teams to Oklahoma to visit with them, to understand the product that their developing and have developed. We went as they were going into production for that. They do have that material, that is absolutely right.**

(40:57) There's another company that is producing unleaded aviation fuels, *Swift Fuels* out of Indiana. We went, and our teams went to visit them as well (41:04) to understand the product that they are producing. They, Swift ... just announced last week, just got certification for their unleaded 100 octane avgas as well that would serve certain market (41:22) segments. Specifically around the Cessna aircraft, a lot of which are used in flight training.

Our efforts have switched now (41:30) from understanding the product and what is available. (41:33) We are engaged with our tenants. We don't, obviously, as we've said before, the Port does not purchase aviation fuel, the Port does not retail aviation fuel (41:45) but our tenants do and they are the users of that.

Lubischer Comment 11-12-24

----- At the 6-14-23 Port Commissioner's Meeting at minute (38:13) the Port stated: "Under current regulations the Port cannot prohibit the sale of FAA approved fuel, even fuel containing lead..."

That has changed. Pursuant to the *FAA Reauthorization Ac*t - see Title 49, USC Section 47107(a)(22) - **the Port can now prohibit leaded fuel at HIO as soon as the Port provides G100UL to HIO.**

----- At the 10-9-24 Port Commissioner's Meeting at minute (41:33) the Port stated: "We are engaged with our tenants. We don't, obviously, as we've said before, the Port does not purchase aviation fuel, the Port does not retail aviation fuel (41:45) but our tenants do and they are the users of that."

The specific language of Title 49, USC Section 47107(a)(22) includes: "*...or (B) the date on which* ***the airport*** *or any retail fuel seller at such airport makes available an unleaded aviation gasoline...*" **specifically includes the word "*airport*"** which allows the Port to purchase and make available unleaded aviation gasoline. It is my understanding that the Port considers the language "*ambiguous*" and has contacted the FAA for their interpretation. This question was raised with a Port attorney 7-16-24, some 4 months ago...

The Port has a tank ready for unleaded fuel: On, or about, 2-27-23, "The Port of Portland responded to a FOX 12's request for comment by saying ...*It has a fuel tank ready for unleaded fuel as soon as it goes on the market*." See: **https://www.kptv.com/2023/02/27/hillsboro-resident-wants-citys-industrial-growth-replace-airport/**

G100UL is "***on the market*** ". Also, on 6-14-23 at the Port Commissioner's Meeting the Port stated at minute (39:45): "*In 2015 the Port commissioned a study about the potential use of unleaded automobile fuel for aircraft. Some aircraft could use this fuel* ***so we upgraded a storage tank for FBOs use****. Ultimately the Transportation Research Board concluded that there were some safety concerns and we've seen that pilots prefer to wait until new fuels are proven safe and effective*". --- Pursuant to the *FAA Reauthorization Ac*t (see Title 49, USC Section 47107(a)(22), The Port could purchase G100UL today, have it delivered to the tank HIO the Port refers to (see above), and then prohibit future purchases/deliveries of 100LL AvGas to HIO. (That said, waiting a month or two before that purchase of G100UL by the Port is reasonable; to allow time for the purchase and application of STC placards. To get an STC it just takes a mechanic 20-30 minutes to review the owner's completed Form 337 and then sign off.)

(41:48) Our efforts now are focused on securing one of those users, one of those tenants in being the first customer to provide that. So we're looking now, we have developed and are working on a draft aviation transition plan. We have held two community meetings. We have a third one scheduled for next month, in November, where we will share this draft transition plan (42:10) which is around enticing one of our airport or more than one of our airport tenants and businesses to adopt this type of fuel and get it into use.

Getting it here is one thing, getting it used and into use and actually being...in reducing emissions is the bigger, **is the biggest thing and that's the challenge that we face right now in front of us. (42:32). And again, that meeting is to occur next month in November.** Our community outreach team is actually outreaching with some members of the community right now to actually pick the best date so that we insure that. (42:45) The'll be an online option available for that meeting as well. So we're very excited to share our transition plan for that next month. (42:54). Noise, as was mentioned here,..

(42:56) Mr. Pippenger: Can I? I just wanted to add on the last bullet there. **I've asked Steve who sits on the Board of the *Oregon State Aviation Board*, to really engage with the *Oregon Department of Aviation*, not just getting it used at the facility here but really getting a broad transition plan for the state, I think, is the way to go, because we do know that people will fly to go get gas somewhere else**

as well. It's not a one, it's not a single airport solution. Obviously we're focused on our airports, (43:29) but I think we've really tried to engage at a state level, to try to get the awareness up at the state and **have the state maybe lead the transition, in terms of all the other airports, so that when we do it, we just don't have just one gas station that's providing unleaded fuel, we're getting everybody there as well. And so, I think, not just looking at our airport, we're trying to look at the whole ecosystem** and try to make that much more effective because, in the end, that's where we all want to be. So I just wanted to highlight that before we pass on. (44:00)

Lubischer Comment 11-12-24: The Port is working on a "*draft aviation transition plan*" (42:10) *"which is around **enticing one** ... **or more than one of our airport tenants and businesses to adopt this type of fuel and get it into use**."* However, at (42:56) the Port outlines also seeking statewide transitioning to unleaded fuel. Having legislation that secures statewide transitioning to unleaded fuel is laudable but should not delay HIO's FBOs and Hillsboro Aero Academy's (and other flight school's) transition to G100UL, be that voluntarily or pursuant to USC Section 47107(a)(22) which, as previously noted, provides the Port authority to prohibit leaded fuel use at HIO. Hillsboro's children that live or go to school near HIO should not have to wait until a statewide transition is made. Insuring that HIO aircraft (particularly the flight schools) use only G100UL must be a priority!

(44:00) Mr. Nagy: Thank you Dan, I forgot to mention that. Yes, **we are working with the state authorization board and also the *Oregon Association of Airport Managers* which is the umbrella organization that represents all of our other airports in the state. (44:11) And we've had these conversations with our other commercial service partners**, Eugene, Medford, Redmond, about this as well **and seeing if they were on board with this initiative to bring unleaded avgas kind of more uniformly to the state** as opposed to like Dan said. And, and people are on board with that and so **there's positive change in that direction as well**. (44:32)

1:00:44 ??? Commissioner ???: I have a question. Back to the aviation fuels which, I know has, been a challenging issue to address. Two pieces to the question, **you mentioned that currently now the barriers to adoption really is reaching out to the vendors, and if you could just kind of just share with us the nature of some of those barriers from a vendor perspective,** number one. Just so that we have a better appreciation of what those conversations look like. **And then you also mentioned (1:01:11), you know, enticements of those, and I would just wonder what does enticement look like and help us understand that a little bit better.**

(1:01:20) Mr. Nagy: Sure, so in reaching out, we're reaching out now to, as I mentioned three fixed based operators and flight schools, to see the interest level in adoption of this fuel. We've also, I didn't mention it, but our teams have also had outreach to other airports, to other large users of this, **certain large flight schools that are attached with universities having made the transition**. **Some have had no problems; some have had adoption problems and have backed away a little bit from it**.

So we're trying to learn from that and pass that information on to our private businesses as they try to make these decisions themselves as to whether or not they're going to transition to it. There's information on both sides right now, there's people, or there's information that it does improve the overall maintenance health, you know, of aircraft. (1:02:13) **There are some that have experienced maintenance problems associated with it. They're not certain if it's related to the fuel but they have pushed the pause button on fully transitioning.**

Lubischer Comment 11-12-24
I'm pretty sure that there is no flight school yet using G100UL, nor any other airport with the exception of *Reed-Hillview* which just received a shipment of G100UL this month.

So we're trying to help our businesses through that understanding it, as well as ourselves, to get them over that kind of hesitancy to adoption so that when we do bring a product here it is fully integrated and fully adopted and utilized. (1:02:39) That's where our outreach has been, with our

fixed base operators and with our flight schools right now. (1:02:45) **And then, also as Dan mentioned, with the other airports in the state, and with the *State Department of Aviation* on that. (1:02:52) On the incentive program, we've looked at specifically ourselves, what would the cost difference be between, say, the retail price of a gallon of fuel**? **Would that be where we would want to incentivize? That's a potential. This is what we are going to talk about in our draft transition plan that we share with the community next month. Would we,** (1:03:12) **there's distribution costs, so in tanks, in trucks. Would we share in that potential cost?**

At (1:03:12) Mr. Nagy: "*there's distribution costs, so in tanks, in trucks. Would we share in that potential cost*?"

Lubischer Comment 11-12-24: I believe the same trucks and other equipment can be used as G100UL is fungible (can be mixed with) with 100LL.

(1:03:18) There are certifications, because right now even though they are absolutely correct, and the community is correct. There are fuels available and they are able to be used across a wide spectrum but not all spectrum of aircraft. They still require certification, so you have to get the *Supplemental Type Certificate*, or the STC. That is a few hundred dollars, that requires visiting a mechanic, that requires, and so is that where we lean in? And so those are the things we are looking at right now is to that. In our discussions with the state, and the incentives at that level, other states have looked at, just as we've requested funds from the Federal Government recently that resiliency be eligible for federal grants. States have looked at this and said: should infrastructure for this transition be eligible for state grant money as well? So we've talked with *Oregon Department of Aviation* about would this be a type of thing that the State should go down so far as an incentive program? So those are the areas we're leaning when we talk about incentives.

Lubischer Comment 11-12-24

1) Regarding the statement "*There are fuels available and they are able to be used across a wide spectrum but not all spectrum of aircraft*." It is my understanding that G100UL has received FAA approval for G100UL avgas with every spark ignition piston engine and every airframe using a spark ignition piston engine in the FAA's Type Certificate database.
2) Regarding "*visiting a mechanic",* **what is the expected cost for a mechanic**? (Per Mr. Braly, it just takes a mechanic 20-30 minutes to review the owner's completed Form 337 and then sign off.)
3) Regarding "*should infrastructure for this transition be eligible for state grant money"*, **what costs are expected for infrastructure**? (G100UL is fungible with 100LL so there should be no costs related to infrastructure.)

(1:04:22) Mr. Pippenger: And I will just add, I think this is, gets to the point of having a broad lift of everyone moving to unleaded Avgas, because, if only one does it are we stuck in an **incentive program** forever? And then are people actually using it? I just, **we're trying to think of the big picture** besides just our airport and all the things Steve mentioned, you know, we're willing to step into that breach, but we also have to be thoughtful about how long we are in that, how much it is and are we the only ones doing that? So, I think that is one of our challenges moving forward and that is why doing that we're trying really, I guess, connect at a State level to say let's all step forward on this together and share that lift? (1:05:02)

Lubischer Comment 11-12-24

1) Hopefully aircraft owners will not require monetary "*incentives*" to transition to unleaded fuel G100UL, especially when by transitioning to G100UL maintenance costs are expected to be lower. (i.e., less oil changes, less frequent TBOs – *Time Between Overhauls*).

2) In addition, perhaps the "*big picture*" should include the welfare of those children that live and go to school around HIO? Please see: **https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5338738/** "***Costs of IQ Loss from Leaded Aviation Gasoline Emissions***", especially see the map (Figure 1) in the *Results Section*". Note that yellow squares indicate highest air lead concentrations and note the yellow square in the area of HIO! (Be sure to enlarge the picture...!)

3) And also consider that studies have concluded that **lead causes childhood brain damage** (reduced grey matter in regions of the brain known to govern executive judgment which can lead to impulsivity, poor mood regulation), which has been associated with ADHD, Speech difficulties, Behavioral problems, Failure to Complete High School, Lowered IQ, Pregnancy and Aggression as a Teen, Criminal Behavior as a Young Adult...

4) Perhaps the Port should also include consideration of possible costs the Port might incur should transitioning HIO to unleaded fuel be delayed while waiting for the whole state to transition to an unleaded fuel. (As noted previously, pursuant to the *FAA Reauthorization Act*, Title 49, USC Section 47107(a)(22) allows the Port to prohibit the sale of leaded fuels once the Port provides an unleaded fuel.)

(1:10:11) Commissioner Sampat: Going back to our previous discussion, early transition to lead free fuel is important. So, as you talk to the suppliers of these fuels and look at other airports, are there any examples that stand out in terms of transition or?, like....training school or training academy and, you know, what can we learn in terms of incentives, regulatory changes? And you may not have an answer right now, that's ok, but it would be good to hear what we know so far and then maybe come back as to, you know, is there something that we can follow in the future?...

(1:10:57) Nagy: I think the number one thing is, **we can talk about incentives and those type of things like that, and we can come back and talk about that.** The number one thing has been finding a level of adoption at that facility or with that community, that airport community that sustains that use. So if you have high volume users of this type of fuel, to get that on board. Because that will drive that incentive. So, you know, if you have someone that is a high user of that, like a flight school or a fixed-base operator. If you can sustain that and get that involvement, that's the number one thing for success, so that's kind of where we're leaning, so that's some of the things we've learned from talking with other airports and **looking, our team has looked at talked with the other airports, yes.**

(1:11:40) Commissioner Sampat: Is there an airport that stands out today in having done that transition? Nationally? Mr. Nagy: No one that really, I'm looking at Kama, **no one that has done it? and had high success**. They're **all still providing both grades of fuel**. They're all still, um, they've had a high, **some of them have had higher levels of adoption**. Utah State, I believe is one, Utah Valley State which is an aviation education university. They've certainly had success. There's been a few smaller, there's been a few airports in California that have been successful as well, but we can come back with those details. p8

(1:12:22) Commissioner Sampat: Thank you. (1:13:33) Mr. Nagy: The largest user...at HIO is probably flight training followed by corporate activity...other regarding flight patterns... 1:15:15??? Any other questions?

Lubischer Comment 11-12-24 See: **https://www.ainonline.com/aviation-news/business-aviation/2024-11-04/reid-hillview-starts-pumping-high-octane-unleaded-avgas** *"Six years before the deadline for the U.S. to switch to unleaded avgas, the first airport to sell General Aviation Modifications Inc.'s (GAMI) G100UL high-octane unleaded avgas to airplane owners celebrated the new fuel's availability. Northern California's Reid-Hillview (KRHV) welcomed airplane owners on Saturday to the inauguration of G100UL with 7,500 gallons priced at $6.99 per gallon, lower than prices for leaded 100LL avgas at some local San Francisco Bay Area Airports*... In 2022, GAMI's G100UL received FAA STC approval for "every spark-ignition piston engine and every airframe using a spark ignition piston engine in the FAA's type certificate database," according to GAMI. Although this includes engines in helicopters, it doesn't yet include helicopter airframes, but GAMI is working on adding these. The company has arranged with refiner Vitol to manufacture G100UL and for an independent transportation company to bring the fuel to KRHV."

The California legislature passed a leaded avgas ban for 2031.

There's a fleet-wide, high-octane unleaded avgas that is ready to go, but distributors won't deliver.

by Rick Durden

For over three decades the FAA has been involved with various programs that have been working to get rid of tetraethyl lead (TEL) in high-octane aviation gasoline. The goal is to define a high-octane unleaded avgas that is a drop-in replacement for 100LL for every spark ignition piston engine aircraft—fleet wide.

The desire to get lead out of avgas isn't a recent development. In October 1931, Dr. Jimmy Doolittle (PhD Aeronautics, MIT, 1925), then an employee of Shell, was making one of his many record-setting flights in a *Laird Super Solution*. On the last leg of the flight, he carried a container of tetraethyl lead (TEL) that he would be using to increase the octane of the avgas available at his last stop up to what was needed for his aircraft.

The container leaked. The toxic fumes sickened him to the point that he was barely able to land the airplane. Doolittle, who was in the process of pushing for the development and standardization of high-octane avgas (what was to become 100/130 octane), recognized that while it was then necessary to add lead to fuel to make octane, commented that it was "*an ideal solution*." He went on to say that "*There had to be a better way to add octane to fuel*." P. 132, Calculated Risk, by Jonna Hoppes, 2005, Santa Monica Press, LLC.

TEMPORARY EXPEDIENT

Nearly 100 years ago, experts in aviation fuel knew that using a toxin as serious as lead to make a high-octane fuel should only be a temporary expedient. Accordingly, we're going to take a deep, detailed dive into what has been accomplished to fix a long-recognized problem. For space, we'll limit it to this century—even with that, there's a lot of material.

PAFI

In 2014 the FAA formed PAFI (Piston Engine Fuel Initiative) to "*support evaluation of candidate-unleaded fuels*." For reasons unknown, even though PAFI is an FAA organization and the **FAA provides two separate and equally valid routes to avgas approval**, the PAFI process for identifying a fuel would [~~be~~] only be via issuance of an ASTM spec in conjunction with taxpayer funded FAA testing, rather than by the parallel process of FAA approval via a Supplemental Type Certificate (STC).

As background, 100LL has an ASTM spec—D910. An ASTM spec is not a recipe, it's a document designed to facilitate commerce. It achieves that goal by tabulating a series of laboratory tests that must be run on every batch of fuel produced. The values from those tests also must each fall within a defined range of results. Chevron's recipe is different than Phillips' which is different than Exxon's. But each batch of 100LL they produce will have laboratory test results that fall within the "brackets" defined by the specification.

PAFI failed. After more than $40 million in taxpayer dollars, it produced nothing.

When PAFI was brought back from the dead as EAGLE (*Eliminate Aviation Gasoline Lead Emissions*) in early 2022, it also, inexplicably, followed the ASTM route to a fuel approval even though EAGLE's website points out that **there are two equally valid routes to FAA fuel approval, FAA STC or ASTM spec and then FAA approval**. EAGLE started with three candidate fuels.

- <u>Phillips 66 and Afton Chemical</u>. The largest producer of 100LL teamed with a corporate sister, Ethyl Corporation, the importer and distributor of tetraethyl lead (TEL). Their candidate fuel used manganese (formulated in a product called **MMT**) as an octane enhancer. Manganese has been unacceptable in auto fuels for years due to the deposits it leaves. Not surprisingly, during testing of that fuel at the FAA tech center last fall, it destroyed the test engine from detonation or preignition. That was predictable. **That fuel has been withdrawn**.

- **LyondellBasell and VP Racing**. This is another fuel that **uses MMT**— as an octane enhancer—**along with ETBE**. In June of this year the team submitted its proposed test specification to EAGLE. EAGLE members provided critiques of the spec. As a result, LyondellBassell/VP Racing withdrew its submission. We note that LyondellBassel/VP Racing says that its fuel has "*similar detonation resistance to 100LL under most conditions tested*." **LyondellBasell/VP Racing now says that it is not possible to get the necessary octane required to be a true drop-in replacement for 100LL without the use of manganese or lead** and that 80 percent of aircraft engines will be able to use its fuel without modification.

The problem is that the **20 percent of the engines that can't use the fuel without modification are the big-bore Lycomings and Continentals -- normally aspirated and turbocharged— that need high-octane fuel and use more than half the avgas burned.** According to LyondellBassell/VP Racing those engines and aircraft will require modifications reducing their horsepower output to burn the lower-octane fuel. That will cut useful load and range and may not be possible in a piston twin. LyondellBasell says it's going to continue with the process because it's the only process that can lead to a fuel that can be used in all aircraft.

That means that there may be an ASTM spec for an unleaded avgas acceptable to EAGLE that does not have the same performance capabilities as 100LL and is of lesser quality. In our opinion, that's not a high-octane avgas.

We note here that throughout the PAFI/EAGLE process many commentators, notably the National Air Transport Association (NATA), an organization of, among others, FBOs and fuel distributors, have asserted, without evidence, that the ASTM spec and subsequent FAA approval route to a new fuel is superior to the FAA STC process. In fact, as will be pointed out below, the opposite is true.

- Swift Fuels UL100R. The material we've seen on Swift's fuel is that it also uses the "oxygenate" ETBE (Ethyl-tert butyl ether) at a level of up to 25 percent. Available public information (example, Swift's patents) reflects that there will likely be 3 to 7 *fewer* BTUs per gallon in UL100R than in typical 100LL. That will reduce the range of our aircraft, by the same amount. At various times and places **Swift, like LyondellBasell, also stated that UL100R will not be usable in all piston airplanes in the FAA database**. That's hardly a drop-in replacement.

We note that **ETBE is ethanol based**, and it is chemically classified as an "ether." Remember what happened to aircraft engines when mogas with ethanol was used? Yes, the rubber compounds in the fuel systems and engines fell apart. **At Oshkosh this year, data were provided that strongly suggest that the use of ETBE will create problems with diaphragms and other rubber components in our aircraft fuel systems**. We are waiting to learn more on this subject.

Further, the way we read the **California statutes, ETBE is illegal** for use in self-propelled vehicles. We didn't see an exception for aircraft. EAGLE has not explained how ETBE can be used in California.

- **General Aviation Modifications Inc. (GAMI) G100UL**. Although this fuel appears on the EAGLE website and GAMI has been participating in a good portion of the EAGLE program, it is not an "EAGLE" fuel because EAGLE, an FAA organization, openly discriminates against the FAA SVC approval route to a high octane unleaded avgas. **So, what's up with G100UL**?

Two years ago, after some 12 years of testing, the FAA issued an STC to GAMI for the use of G100UL high octane aviation gasoline *in every spark ignition piston engine in every aircraft in the FAA database*. It has been tested and approved in every one of the piston rotorcraft engines, although formal approval for rotorcraft is pending.

G100UL is a fleet-wide, high-octane drop-in replacement for 100LL without modification to airframes or engines other than the placards to be installed as part of the STC. G100UL can be mixed with 100LL and mogas without any additional steps, so it can be mixed in holding tanks and aircraft fuel tanks.

The STC price for an aircraft owner is slightly more than two dollars per HP, a one-time fee so the capitalist that developed the fuel makes money off its hard work. We'll admit our bias, we love American private enterprise. The spec for G100UL is on GAMI's website. After reading the FAA-approved language of the specification, it is our opinion that the spec and G100UL form the gold standard for high-octane unleaded avgas.

G100UL OCTANE

Avgas has historically been identified with two numbers, such as 80/87, 100/130 or 115/145. The lower number is the Motor Octane Number (MON). 100LL, under its ASTM D910 spec, has a minimum MON of 99.6 (which is rounded to 100).

The higher number on the octane description is the “Performance Number” (PN), also called the “supercharge” or “rich” rating—the detonation resistance of the engine at full power with a full rich mixture. This is basic to every aviation fuel; it’s been a part of the definition of avgas for over 80 years.

However, from the material we have seen, there is no supercharge rating included in the proposed specifications for either Swift or LyondellBasell/VP. The supercharge rating values are critical as they strongly influence the real-world performance of the aircraft engine across the entire range from lean to rich fuel-air ratios. That appears to explain why those fuels can't be run in any of the big bore engines that require the 130 supercharge rating at full rich and full power—Cirrus, Bonanzas, Cessna 200-, 300- and 400-series airplanes, and others—the ones that do most of the day-to- day flying in the general aviation world.

By contrast, when tested, G100UL's supercharge rating has been typically more than 161. The laboratory test engine is unable to measure at any higher value. That's equal to or better than the old purple 115/145 avgas run in WWII fighters, bombers and transports. It means that the big iron still being flown at reduced power on 100LL will again have full power available.

In our opinion, anything that comes out of EAGLE—at taxpayers’ expense—better top the capabilities of G100UL.

STC RIGOR

The STC process for the approval of G100UL was more rigorous and more onerous than the ASTM approval process. ASTM does not do or even "witness" testing. At the most basic level, to get a "fleet-wide" engine STC, GAMI had to show that G100UL was as good as or better than 100LL. That's not the case with an ASTM approval, especially where it now appears that the remaining EAGLE fuels will not have the 100/130 octane ratings of 100LL and will not be suitable for use on most of the high-performance general aviation engines.

FAA STC POLICY FAA long-standing policy regarding fuel approvals is set out in Advisory Circular 20-24D. When it comes to seeking approval for a fuel via STC, the FAA states in section 8e(1), "The FAA has determined that independent fuel specifications may be acceptable for definition of aviation fuel operating limitations if they provide an equivalent level of property, performance, and quality control as governmental, military, or industry voluntary consensus based standards." Therefore, per FAA policy, a fuel approved under STC cannot be approved unless it is every bit as good as a consensus-based standard—which is what ASTM is.

APPROVAL LANGUAGE

Showing the rigor of the G100UL STC approval, the following FAA approved language appears in the FAA-approved spec for the STC for G100UL: (Paragraph) "Xl.1.4 This specification incorporates and requires use of additional or alternative laboratory test methods which are more modem and more precise as compared to several of the laboratory test methods traditionally used over the past 75 years for industry standard fuel specifications such as ASTM International D910 (Grade 1001%) and D7547 (Grades LIL91 and UL94). (Emphasis added.)

The FAA itself, an independent agency, through its own rigorous certification process, determined that GIOOUL and its specification exceeded ASTM standards. That is a huge finding, in our opinion.

There's more.

In the next paragraph in the FAA-approved specification defining G100UL avgas, it states: "Xl.1.5 This specification and standard was approved by the FAA based, in part, on FAA Advisory Circular AC 20-24B, and FAA Policy Memorandum 'Policy for Aviation Fuel and Oil Operating Limitations, 14 CFR

Part 33.7' [ANE2010-33.7-5Al. That same policy is also referenced in the most recent revision of AC 20-24D, paragraph 5 a (2), and as further therein referenced in paragraph 8 e (1). Those FAA policy statements, together with multiple standard ASTM tests required in the matrix of the TABLE 1 properties of this specification, establish that, as a necessary part of the approval and issuance of FAA STC SE01966W1, that *the FAA has, in fact, made a determination that this Specification and Standard for a High Octane Unleaded Aviation Gasoline provides, not only an equivalent, but, in fact, an enhanced level of quality control of the properties and performance of the aviation gasoline produced under this specification and distributed throughout the supply chain, as compared to the traditional governmental, military, or industry voluntary consensus based standards which have previously defined and controlled die production of aviation gasolines used for spark ignition piston engines*." (Emphasis added.) "Throughout the supply chain"— that's important language, because it means from the refinery into the airplane wing.

G100UL IN SERVICE

We note that about one year ago, the head of AOPA, the organization that represents general aviation pilots, with no financial interest in the continued use of 100LL, Mark Baker, appeared to have recognized that EAGLE is deeply flawed. One of the chairs of the board of EAGLE, Mr. Baker took an early and graceful exit from EAGLE. He then promptly put himself in the Beech Baron sponsored by AOPA that is operating one engine on IOOLL and one on GIOOUL, because he trusted it. We previously flew and reported on the Baron project.

How is that Baron project going, you ask? After about 180 hours of operation on newly overhauled engines, Blackstone Labs, a recognized aviation oil analysis facility, noted that the wear metals in the engine using GIOOUL were 40 to 60 percent below universal averages and well below those of the engine using IOOLL. That's the graph of the results on the previous page. [NOT SHOWN HERE] Borescope measurements and photographs document that there has been no valve seat recession, an issue that has been raised by the detractors of unleaded avgas. Wear metals are dramatically less than with IOOLL. When lead was removed from automobile fuel, engine life increased dramatically. That's been predicted for aircraft engines as well. This is evidence that the prediction is accurate and is exhibit one for applying for approval to increase TBOs for engines being run on G100UL.

One Commemorative Air Force group that restored a WWII Douglas A-26 has recently flown the airplane with in the left engine. It has 2000-HP R-2800 engines operating at 44-48" of manifold pressure.

WHERE IS THE FUEL? Right now, there are pilots and FBOs trying to have GIOOUL on their airports, but distributors won't deliver it. Vitol Aviation, who is making G100UL, has more than a million gallons ready to go but no distributor as yet will deliver it.

DISINFORMATION

For over a year there has been an active disinformation campaign led by NATA and, to a lesser extent, GAMA (General Aviation Manufacturers Association—not to be confused with GAMI), although we were told that at a meeting at AirVenture only one GAMA member, Lycoming, now opposes G100UL. We'll go through the claims of G100UL shortcomings and the response to each, based on our research and in conversations with George Braly, co-proprietor of GAMI.

Insurance companies won't insure G100UL. **Untrue**. Per George Braly: "*Each of the major distributors has directly advised GAMI that they have obtained the same product liability insurance for their sale of avgas as they have for 100LL. Furthermore, Vitol Aviation was able to add G100UL avgas to its policy with no increase in premium*."

An STC doesn't provide the legal liability protection of an ASTM spec. **Also, untrue**. There's no difference. As we prepared this editorial, we worked with two attorneys. One, a retired aviation attorney, pointed out that a consensus spec such as ASTM does not provide any sort of defense to an aircraft accident lawsuit. As with compliance with an FAA regulation or approval, it is evidence that the jury can consider, but it doesn't give a defendant a special defense. The other attorney did a standard computer

search for any lawsuit, anywhere in the U.S. court system, involving aviation fuel in which an ASTM spec provided a defense. There was none. There was no case in which the D910 ASTM spec for 100LL was even mentioned. That attorney did find a case in which ASTM was sued for failing to provide a spec. It alleged that direct competitors of the plaintiff fuel maker denied an ASTM spec to keep the plaintiff from being able to bring its product to market. The case was dismissed for procedural reasons so there was never a finding on the allegations.

G100UL isn't approved by aircraft and engine manufacturers. **That's true.** What's more important is that only the FAA can approve a fuel for use on an engine or with an aircraft per federal law. Whether it is approved by Lycoming or Cirrus is irrelevant—if it's approved by STC, that's the end of the story. Manufacturers may not like STCs (we saw it with VCs), but they do not have the authority to second-guess the FAA when it tests, approves and issues one. In addition, per George Braly, "*Lycoming and Continental have each sent engineers to GAMI and have flown G100UL avgas and compared it back-to-back with 100LL and have each stated to GAMI that they cannot tell the difference in operation when compared to the use of 100LL*." In addition, Braly said, "each of the distributors have reviewed the G100UL avgas FAA-approved specification and told GAMI that they had no objection to that specification—and none of them have stated to GAMI that they have any reason to 'disapprove' of avgas."

NATA claims that the ASTM process is more rigorous than the FAA STC process because the STC process doesn't look at the supply chain. **Untrue**: as pointed out above, the FAA-approved STC spec said that the spec provides the same or better protection for the integrity of the supply chain, than does the ASTM spec for 100LL. Curt Castagna is the chair of NATA. When AOPA's Mark Baker left EAGLE, Castagna took Baker's cochair seat. Castagna is the most vocal of the groups attacking the FAA's entire STC program, claiming that it is no good and that FBOs won't sell fuel without an ASTM spec and distributors won't deliver it. When a private company has members of its management that are publicly maligning the company's basic policies and procedures and also working to thwart the accomplishment of its goals, those managers get fired. We can only wonder why Curt Castagna and NATA are still on the EAGLE board? Currently, pilots and FBOs are demanding G100UL. NATA's actions appear to be stopping delivery to those willing buyers.

CONCLUSION

There is currently litigation in California requiring FBOs to sell no-lead avgas when it is commercially available. We can't help but think that the actions of NATA and GAMA to stop G100UL delivery to users that want it aren't going to play well in the lawsuit. We're going to be watching closely. As we go to press, the California legislature has passed a bill to ban leaded avgas by 2031. It is expected to be signed by the governor.

G100UL has demonstrated its viability. As an aircraft owner, we're ready for the benefits of a high-octane, unleaded avgas—we want more BTUs per gallon, longer oil change intervals and TBOs and no longer having to deal with fouled plugs.

In our opinion, there's no excuse for any more delivery delay.

Lead Toxicity

"*Lead is the most extensively studied environmental neurotoxicant...Along with clinical and epidemiological data, this evidence has clearly established that lead is toxic to the developing and mature nervous system*."(CDC) "*Preventing Lead Poisoning in Young Children*", A Statement by the *Centers for Disease Control and Prevention*, August 2005, U.S Department of Health and Human Services, Public Health Service, Appendix p14. https://www.cdc.gov/nceh/lead/publications/prevleadpoisoning.pdf

"*Exposure to even low levels of lead can cause damage over time, especially in children. The greatest risk is to brain development, where irreversible damage can occur. Higher levels can damage the kidneys and nervous system in both children and adults*." (Mayo Clinic): *Patient Care & Health Information > Diseases & Conditions > Lead Poisoning > Complications*
https://www.mayoclinic.org/diseases-conditions/lead-poisoning/symptoms-causes/syc-20354717

"Deficits in cognitive and academic skills associated with lead exposure occur at blood lead concentrations lower than 5 µg/dL" (Dr. Lanphear, et al.) Dr. Lanphear, et al. *Public Health Reports 2000* (115); 521-5*29,* https://pubmed.ncbi.nlm.nih.gov/11354334/

"*... ADHD, both as a diagnosis and as symptom dimension, is associated with blood lead level at low exposure levels, even below 2.5 ug/dL*." (Joel T. Nigg, Ph.D. et. al.) "*Confirmation and Extension of Association of Blood Lead with Attention-Deficit/Hyperactivity Disorder (ADHD) and ADHD Symptom Domains at Population-Typical Exposure Levels", 2010, J Child Psychol Psychiatry*, Joel T. Nigg, Ph.D. et al, Oregon Health & Sciences University
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2810427/

"*IQ decreases with increasing levels of blood lead*." (CDC) "*Preventing Lead Poisoning in Young Children*", A Statement by the *Centers for Disease Control and Prevention*, August 2005, U.S Department of Health and Human Services, Public Health Service, Appendix p9.
https://www.cdc.gov/nceh/lead/publications/prevleadpoisoning.pdf

"*Lead associated cognitive and behavioral effects have, not surprisingly, been associated with an increased risk of failure to complete high school*." (CDC) "*Preventing Lead Poisoning in Young Children*", A Statement by the Centers for Disease Control and Prevention, August 2005, U.S Department of Health and Human Services, Public Health Service, Appendix B-4. https://www.cdc.gov/nceh/lead/publications/prevleadpoisoning.pdf

"*...national policies have greatly reduced lead exposure among U.S. children, but even very low exposure levels compromise children's later intellectual development and lifetime achievement. No threshold for these effects has been demonstrated."* (Environmental Health Perspectives) "*Lead Exposures in U.S. Children, 2008: Implications for Prevention*", Levin et. al., *Environmental Health Perspectives* , Volume 116, Number10, October 2008. https://doi.org/10.1289/ehp.11241

"…*no level of lead in a child's blood can be specified as safe*…" (CDC) "*Preventing Lead Poisoning in Young Children*", A Statement by the Centers for Disease Control and Prevention, August 2005, U.S Department of Health and Human Services, Public Health Service, p1.
https://www.cdc.gov/nceh/lead/publications/prevleadpoing.pdf

November 13, 2024

Topic: Port Commissions Testimony

From: Miki Barnes

Dear Chair Coba, Members of the Commission,

Thank you for this opportunity to provide comments.

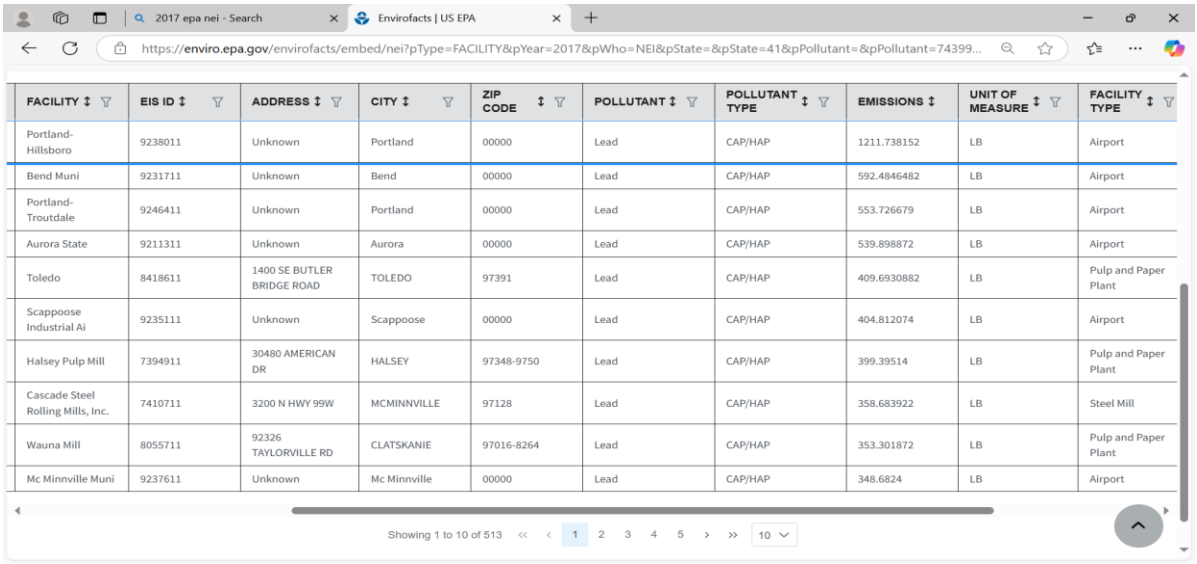
At last month's 10/09/2024 meeting, Steve Nagy, Director of Airport Operations, stated that there were around 80, perhaps 84 plus, public and private airports in Oregon. (This statement can be found at the 56:55 mark in the livestream YouTube video of the meeting).

However, a review of the 2017 Environmental Protection Agency (EPA) National Emissions Inventory (NEI) lists 513 sources of lead in Oregon. Of that number, 419, 81.6%, are airports.

According to the Oregon Department of Aviation (ODAV) there are 97 public airports in the state. Seven offer commercial airline passenger service. The majority of the remaining 92 are publicly subsidized, non-revenue generating facilities that primarily serve private pilots, hobbyists, jet owners, charter services and flight training schools.

In addition, there are more than 300 private airports and airstrips located in Oregon. A search of the EPA NEI database for lead by county reveals that in 2017 there were 22 airports in Washington County, 16 in Multnomah County and 35 in Clackamas County – a total of 73 airports just in the tri-county area. To access a Wikipedia list of private airports in Oregon click here.

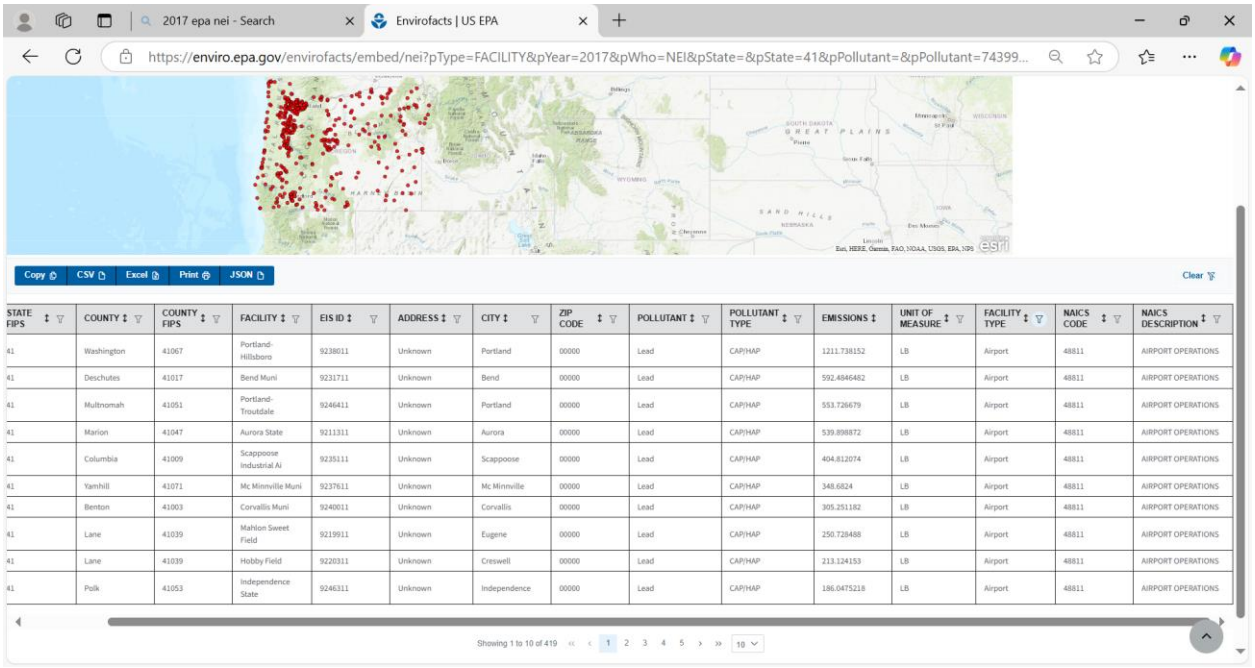
This screenshot below from the 2017 EPA NEI shows the top 10 sources of lead emissions in Oregon. Hillsboro Airport (HIO) clenches the top spot with 1212 lbs. HIO emits twice as much lead as the next three airports on the list. Bend Municipal ranks second with 592 lbs, followed by Troutdale at 554 lbs. Aurora with 540 lbs is fourth and Scappoose Industrial Airpark at 405 lbs is sixth. All of the above airports are the largest facility sources of lead in the counties in which they are located.



FACILITY	EIS ID	ADDRESS	CITY	ZIP CODE	POLLUTANT	POLLUTANT TYPE	EMISSIONS	UNIT OF MEASURE	FACILITY TYPE
Portland-Hillsboro	9238011	Unknown	Portland	00000	Lead	CAP/HAP	1211.738152	LB	Airport
Bend Muni	9231711	Unknown	Bend	00000	Lead	CAP/HAP	592.4846482	LB	Airport
Portland-Troutdale	9246411	Unknown	Portland	00000	Lead	CAP/HAP	553.726679	LB	Airport
Aurora State	9211311	Unknown	Aurora	00000	Lead	CAP/HAP	539.898872	LB	Airport
Toledo	8418611	1400 SE BUTLER BRIDGE ROAD	TOLEDO	97391	Lead	CAP/HAP	409.6930882	LB	Pulp and Paper Plant
Scappoose Industrial Ai	9235111	Unknown	Scappoose	00000	Lead	CAP/HAP	404.812074	LB	Airport
Halsey Pulp Mill	7394911	30480 AMERICAN DR	HALSEY	97348-9750	Lead	CAP/HAP	399.39514	LB	Pulp and Paper Plant
Cascade Steel Rolling Mills, Inc.	7410711	3200 N HWY 99W	MCMINNVILLE	97128	Lead	CAP/HAP	358.683922	LB	Steel Mill
Wauna Mill	8055711	92326 TAYLORVILLE RD	CLATSKANIE	97016-8264	Lead	CAP/HAP	353.301872	LB	Pulp and Paper Plant
Mc Minnville Muni	9237611	Unknown	Mc Minnville	00000	Lead	CAP/HAP	348.6824	LB	Airport

McMinnville, the second largest facility source of lead in Yamhill County, ranks 10th on the list with 349 lbs.

This screenshot from the 2017 EPA NEI database shows the top ten lead emitting airports in Oregon.



STATE FIPS	COUNTY	COUNTY FIPS	FACILITY	EIS ID	ADDRESS	CITY	ZIP CODE	POLLUTANT	POLLUTANT TYPE	EMISSIONS	UNIT OF MEASURE	FACILITY TYPE	NAICS CODE	NAICS DESCRIPTION
41	Washington	41067	Portland-Hillsboro	9238011	Unknown	Portland	00000	Lead	CAP/HAP	1211.738152	LB	Airport	48811	AIRPORT OPERATIONS
41	Deschutes	41017	Bend Muni	9231711	Unknown	Bend	00000	Lead	CAP/HAP	592.4846482	LB	Airport	48811	AIRPORT OPERATIONS
41	Multnomah	41051	Portland-Troutdale	9246411	Unknown	Portland	00000	Lead	CAP/HAP	553.726679	LB	Airport	48811	AIRPORT OPERATIONS
41	Marion	41047	Aurora State	9211311	Unknown	Aurora	00000	Lead	CAP/HAP	539.898872	LB	Airport	48811	AIRPORT OPERATIONS
41	Columbia	41009	Scappoose Industrial Ai	9235111	Unknown	Scappoose	00000	Lead	CAP/HAP	404.812074	LB	Airport	48811	AIRPORT OPERATIONS
41	Yamhill	41071	Mc Minnville Muni	9237611	Unknown	Mc Minnville	00000	Lead	CAP/HAP	348.6824	LB	Airport	48811	AIRPORT OPERATIONS
41	Benton	41003	Corvallis Muni	9240011	Unknown	Corvallis	00000	Lead	CAP/HAP	305.251182	LB	Airport	48811	AIRPORT OPERATIONS
41	Lane	41039	Mahlon Sweet Field	9219911	Unknown	Eugene	00000	Lead	CAP/HAP	250.728488	LB	Airport	48811	AIRPORT OPERATIONS
41	Lane	41039	Hobby Field	9220311	Unknown	Creswell	00000	Lead	CAP/HAP	213.124153	LB	Airport	48811	AIRPORT OPERATIONS
41	Polk	41053	Independence State	9246311	Unknown	Independence	00000	Lead	CAP/HAP	186.0475218	LB	Airport	48811	AIRPORT OPERATIONS

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Please include these written comments in the minutes.

Thank for your time and consideration.

Miki Barnes
Banks, Oregon