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Jet Registrations

N7UF

The FAA's Aircraft Registry database shows that tail number N7UF is a reserved N-Number, and that it was reserved by F & L Aviation II LLC. Previously, the N-Number was registered to F & L Aviation II LLC to an aircraft manufactured by Gulfstream Aerospace with model number G-IV. According to NVSOS, Fertitta Management Business LLC is a registered agent of F & L Aviation II.

N-NUMBER ENTERED: 7UF	
RESERVED N-NUMBER	
Type Reservation	Fee Paid
Mode S Code	52250644
Reserved Date	12/09/2021
Renewal Date	None
Purge Date	01/09/2023
Pending Number Change	None
Date Change Authorized	None
Reserving Party Name	F & L AVIATION II LLC
Street	10801 W CHARLESTON BLVD STE 600
City	LAS VEGAS
State	NEVADA
Zip Code	89135-1208
County	CLARK
Country	UNITED STATES

DEREGISTERED AIRCRAFT			
Deregistered Aircraft 1 of 1			
Aircraft Description			
Serial Number	1422	Certificate Issue Date	04/26/2006
Manufacturer Name	GULFSTREAM AEROSPACE	Mode S Code (base 8 / oct)	52250644
Model	G-IV	Mode S Code (base 16 / hex)	A951A4
Year Manufacturer	2000	Cancel Date	12/09/2021
Reason For Cancellation	Exported	Export To	COTE D'IVOIRE
Type Registration	LLC		
Aircraft Registration Prior to Deregistration			
Name	F & L AVIATION II LLC		
Street	10801 W CHARLESTON BLVD STE 600		
City	LAS VEGAS		
State	NEVADA	Zip Code	89135-1208
County	CLARK		
Country	UNITED STATES		



ENTITY INFORMATION	
Entity Name: F & L AVIATION II LLC	Entity Number: E0271032006-0
Entity Type: Domestic Limited-Liability Company (86)	Entity Status: Active
Formation Date: 04/11/2006	NV Business ID: NV20061031695
Termination Date: Perpetual	Annual Report Due Date: 4/30/2023
Series LLC: <input type="checkbox"/>	Restricted LLC: <input type="checkbox"/>
REGISTERED AGENT INFORMATION	
Name of Individual or Legal Entity: FERTITTA BUSINESS MANAGEMENT LLC	Status: Active
CRA Agent Entity Type: CRA - LIMITED-LIABILITY CORPORATION	Registered Agent Type: Commercial Registered Agent
NV Business ID:	Office or Position:
Jurisdiction: NEVADA	

N77UF

The FAA's Aircraft Registry database shows that tail number N77UF is registered to F & L Aviation LLC. According to the NVSOS, Fertitta Management Business LLC is a registered agent of F & L Aviation. The registered aircraft is manufactured by Bombardier with model number BD-700-1A10.

N-NUMBER ENTERED: 77UF			
AIRCRAFT DESCRIPTION			
Serial Number	9284	Status	Valid
Manufacturer Name	BOMBARDIER INC	Certificate Issue Date	02/20/2009
Model	BD-700-1A10	Expiration Date	09/30/2025
Type Aircraft	Fixed Wing Multi-Engine	Type Engine	Turbo-fan
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	52464166
MFR Year	2008	Mode S Code (Base 16 / Hex)	AA6876
Type Registration	LLC	Fractional Owner	NO

REGISTERED OWNER			
Name	F & L AVIATION LLC		
Street	10881 W CHARLESTON BLVD STE 600		
City	LAS VEGAS	State	NEVADA
County	CLARK	Zip Code	89135-1208
Country	UNITED STATES		



BUSINESSINFORMATION



ENTITY INFORMATION	
Entity Name: F & L AVIATION, LLC	Entity Number: E0004072006-1
Entity Type: Domestic Limited-Liability Company (86)	Entity Status: Active
Formation Date: 01/05/2006	NV Business ID: NV20061399706
Termination Date: Perpetual	Annual Report Due Date: 1/31/2023
Series LLC: <input type="checkbox"/>	Restricted LLC: <input type="checkbox"/>

REGISTERED AGENT INFORMATION	
Name of Individual or Legal Entity: FERTITTA BUSINESS MANAGEMENT LLC	Status: Active
CRA Agent Entity Type: CRA - LIMITED-LIABILITY CORPORATION	Registered Agent Type: Commercial Registered Agent
NV Business ID:	Office or Position:
Jurisdiction: NEVADA	

N721FF

The FAA's Aircraft Registry database shows that tail number N721FF is registered to FE Aviation II LLC. According to the NVSOS, Fertitta Management Business LLC is a registered agent of FE Aviation. The registered aircraft is also manufactured by Bombardier with model number BD-700-1A10.

N-NUMBER ENTERED: 721FF			
AIRCRAFT DESCRIPTION			
Serial Number	9354	Status	Valid
Manufacturer Name	BOMBARDIER INC	Certificate Issue Date	10/20/2015
Model	BD-700-1A10	Expiration Date	10/31/2024
Type Aircraft	Fixed Wing Multi-Engine	Type Engine	Turbo-fan
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	52323706
MFR Year	2009	Mode S Code (Base 16 / Hex)	ASATC6
Type Registration	LLC	Fractional Owner	NO

REGISTERED OWNER			
Name	FE AVIATION II LLC		
Street	10801 W CHARLESTON BLVD STE 600		
City	LAS VEGAS	State	NEVADA
County	CLARK	Zip Code	89135-1208
Country	UNITED STATES		



BUSINESSINFORMATION



ENTITY INFORMATION	
Entity Name: FE AVIATION II LLC	Entity Number: E0436752015-6
Entity Type: Foreign Limited-Liability Company	Entity Status: Active
Formation Date: 09/14/2015	NV Business ID: NV20151543721
Termination Date: Perpetual	Annual Report Due Date: 9/30/2023
Series LLC: <input type="checkbox"/>	
Domicile Name:	Jurisdiction: Delaware

REGISTERED AGENT INFORMATION	
Name of Individual or Legal Entity: FERTITTA BUSINESS MANAGEMENT LLC	Status: Active
CRA Agent Entity Type: CRA - LIMITED-LIABILITY CORPORATION	Registered Agent Type: Commercial Registered Agent
NV Business ID:	Office or Position:

Aircraft Type

The FAA designated the Gulfstream GIV with the “GLF4” aircraft type code, and designated the Bombardier BD-700-1A10 with the “GLEX” aircraft type code.¹ The aircraft type code, along with the tail number, confirm the aircraft used for each flight record we obtained from the FAA.

Fuel Burn Rate

GLEX

495 gallons per hour



FertittaJetWatch_source_Fuel Burn Rate GLEX.pdf

GLF4

448 gallons per hour



FertittaJetWatch_source_Fuel Burn Rate GLF4.pdf

Estimating Jet Fuel Consumption and Costs

An estimate of jet fuel consumption can be calculated using the following equation:

$$\text{jet fuel consumption} = \text{flight time} \cdot \text{fuel burn rate}$$

An estimate of jet fuel costs can be calculated using the following equation:

$$\begin{aligned} \text{jet fuel costs} &= (\text{flight time} \cdot \text{fuel burn rate}) \cdot \text{average gallon price} \\ &= \text{jet fuel consumption} \cdot \text{average gallon price} \end{aligned}$$

To obtain an estimate of jet fuel costs, we need the fuel burn rate, flight time, and jet fuel consumption of the aircraft flown.

¹https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/1040874

Jet Fuel Consumption and Costs – 2019

Flight Time

Records we obtained from the FAA show that tail number N7UF made 168 flights, N77UF made 103 flights, and N721FF made 111 flights in 2019. The “GLF4” aircraft type code confirms that the Gulfstream GIV was flown 168 times under N7UF, and the “GLEX” aircraft type code confirms that the Bombardier BD-700-1A10 was flown 214 times under N77UF and N721FF.

	aircraft_id text	aircraft_type text	num_of_flights bigint
1	N721FF	GLEX	111
2	N77UF	GLEX	103
3	N7UF	GLF4	168

FAA records we obtained include departure and arrival time for each record. This allows us to calculate the flight time for each record. 2019 flight records have a total flight time of 636 hours for GLEX aircraft type and 404 hours for GLF4 aircraft type.

Fuel Consumption

The estimated fuel burn rate for the Bombardier BD-700-1A10 (GLEX) is about 495 gallons per hour. FAA records show that this aircraft type has 636 hours of flight time in 2019. We can use this information to estimate fuel consumption.

$$\begin{aligned}\text{fuel consumption} &= 495 \text{ gal/h} \cdot 636 \text{ h} \\ &= 314,820 \text{ gal}\end{aligned}$$

The estimated fuel burn rate for the Gulfstream G-IV is about 448 gallons per hour. FAA records show that this aircraft type has 404 hours of flight time in 2019. The fuel consumption is:

$$\begin{aligned}\text{fuel consumption} &= 448 \text{ gal/h} \cdot 404 \text{ h} \\ &= 180,992 \text{ gal}\end{aligned}$$

The estimated fuel consumption for flights in 2019 is 495,812 gallons.

Fuel Costs

AirNav publishes and regularly updates fuel price reports. These reports average jet A fuel prices at over 2,500 FBOs nationwide.²

² <https://www.airnav.com/fuel/report.html>

Fuel price report

Summary of fuel prices at 3631 FBOs nationwide

	FUEL TYPES												
	100LL Avgas				Jet A				Mogas (auto)				
	FBOs	FBOs	Avg	Min	Max	FBOs	Avg	Min	Max	FBOs	Avg	Min	Max
Nationwide	3631	3525	\$6.43	\$4.20	\$11.57	2567	\$6.66	\$3.99	\$12.54	73	\$5.35	\$3.71	\$7.27
Alaska	82	65	\$8.79	\$7.14	\$11.57	67	\$7.59	\$5.50	\$10.65	5	\$7.27	\$7.27	\$7.27
Central	361	357	\$6.15	\$4.28	\$8.51	216	\$6.27	\$4.40	\$10.76	16	\$4.83	\$3.71	\$5.99
Eastern	356	343	\$6.78	\$5.09	\$9.80	252	\$7.60	\$4.75	\$12.50	3	\$5.58	\$4.99	\$6.75
Great Lakes	729	717	\$6.37	\$4.20	\$9.54	488	\$6.34	\$3.99	\$10.37	25	\$5.26	\$4.30	\$6.15
New England	137	132	\$6.90	\$5.36	\$9.86	86	\$7.94	\$4.75	\$12.54	6	\$6.15	\$5.50	\$6.75
Northwest Mountain	385	375	\$6.76	\$5.15	\$8.95	262	\$6.93	\$4.78	\$10.54	10	\$5.96	\$5.25	\$6.40
Southern	672	663	\$6.26	\$4.51	\$10.85	528	\$6.44	\$4.53	\$11.33	5	\$5.21	\$4.25	\$6.30
Southwest	568	553	\$6.08	\$4.31	\$9.91	411	\$6.31	\$4.03	\$11.29	2	\$5.53	\$4.95	\$6.10
Western-Pacific	341	320	\$6.78	\$4.79	\$9.89	257	\$6.94	\$4.60	\$10.24	1	not available		

This report prepared by AirNav on 07-Feb-2023
 Report includes prices reported between 06-Jan-2023 and 07-Feb-2023
 At least 50% of prices are no more than 5 days old (02-Feb-2023 or more recent)
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Internet Archive crawled and captured AirNav’s reports 20 times in 2019, which is the time period we are considering in our FAA flight records. The average Jet A fuel price for the 20 times Internet Archive captured AirNav’s reports in this time period is \$4.67 per gallon.³ We can use this average to estimate the fuel costs.

$$\begin{aligned} \text{fuel costs} &= 495,812 \text{ gal} \cdot \$4.67/\text{gal} \\ &= \$2,315,442.04 \end{aligned}$$

The estimated fuel costs for flights in 2019 is \$2,315,442.04.

³ See table under AirNav Fuel Price Reports on page 8

AirNav Fuel Price Reports

Date:	Jet A National Average:	Internet Archive Link:
01/02/2019	4.69	https://web.archive.org/web/20190102180643/https://www.airnav.com/fuel/report.html
02/03/2019	4.62	https://web.archive.org/web/20190203185523/http://airnav.com:80/fuel/report.html
03/07/2019	4.68	https://web.archive.org/web/20190307113526/http://www.airnav.com:80/fuel/report.html
04/07/2019	4.65	https://web.archive.org/web/20190407112709/http://www.airnav.com:80/fuel/report.html
04/08/2019	4.65	https://web.archive.org/web/20190408043639/http://airnav.com:80/fuel/report.html
05/01/2019	4.71	https://web.archive.org/web/20190501044532/http://airnav.com/fuel/report.html
05/08/2019	4.69	https://web.archive.org/web/20190508133654/http://www.airnav.com:80/fuel/report.html
05/09/2019	4.70	https://web.archive.org/web/20190509094145/http://airnav.com:80/fuel/report.html
06/08/2019	4.70	https://web.archive.org/web/20190608214157/http://www.airnav.com:80/fuel/report.html
06/09/2019	4.70	https://web.archive.org/web/20190609053013/http://airnav.com:80/fuel/report.html
06/21/2019	4.67	https://web.archive.org/web/20190621073352/https://www.airnav.com/fuel/report.html
06/22/2019	4.67	https://web.archive.org/web/20190622053125/https://www.airnav.com/fuel/report.html
06/23/2019	4.66	https://web.archive.org/web/20190623071037/https://www.airnav.com/fuel/report.html
07/09/2019	4.68	https://web.archive.org/web/20190709153454/http://www.airnav.com:80/fuel/report.html
07/14/2019	4.67	https://web.archive.org/web/20190714091725/http://airnav.com:80/fuel/report.html
08/10/2019	4.68	https://web.archive.org/web/20190810124847/http://www.airnav.com:80/fuel/report.html
08/14/2019	4.69	https://web.archive.org/web/20190814141633/http://airnav.com:80/fuel/report.html
09/11/2019	4.66	https://web.archive.org/web/20190911045748/http://www.airnav.com:80/fuel/report.html
09/15/2019	4.65	https://web.archive.org/web/20190915002612/http://airnav.com:80/fuel/report.html
11/03/2019	4.67	https://web.archive.org/web/20191103085718/http://www.airnav.com:80/fuel/report.html
AVERAGE	4.67	

Jet Fuel Consumption and Costs – 2020

Flight Time

Records we obtained from the FAA show that tail number N7UF made 64 flights, N77UF made 107 flights, and N721FF made 72 flights in 2020. The “GLF4” aircraft type code confirms that the Gulfstream GIV was flown 64 times under N7UF, and the “GLEX” aircraft type code confirms that the Bombardier BD-700-1A10 was flown 179 times under N77UF and N721FF.

	aircraft_id text	aircraft_type text	num_of_flights bigint
1	N721FF	GLEX	72
2	N77UF	GLEX	107
3	N7UF	GLF4	64

FAA records we obtained include departure and arrival time for each record. This allows us to calculate the flight time for each record. 2020 flight records have a total flight time of 307 hours for GLEX aircraft type and 132 hours for GLF4 aircraft type.

Fuel Consumption

The estimated fuel burn rate for the Bombardier BD-700-1A10 (GLEX) is about 495 gallons per hour. FAA records show that this aircraft type has 307 hours of flight time in 2020. We can use this information to estimate fuel consumption.

$$\begin{aligned}\text{fuel consumption} &= 495 \text{ gal/h} \cdot 307 \text{ h} \\ &= 151,965 \text{ gal}\end{aligned}$$

The estimated fuel burn rate for the Gulfstream G-IV is about 448 gallons per hour. FAA records show that this aircraft type has 132 hours of flight time in 2020. The fuel consumption is:

$$\begin{aligned}\text{fuel consumption} &= 448 \text{ gal/h} \cdot 132 \text{ h} \\ &= 59,136 \text{ gal}\end{aligned}$$

The estimated fuel consumption for flights in 2020 is 211,101 gallons.

Fuel Costs

AirNav publishes and regularly updates fuel price reports. These reports average jet A fuel prices at over 2,500 FBOs nationwide.⁴

⁴ <https://www.airnav.com/fuel/report.html>

Fuel price report

Summary of fuel prices at 3631 FBOs nationwide

	FBOs	FUEL TYPES											
		100LL Avgas				Jet A				Mogas (auto)			
		FBOs	Avg	Min	Max	FBOs	Avg	Min	Max	FBOs	Avg	Min	Max
Nationwide	3631	3525	\$6.43	\$4.20	\$11.57	2567	\$6.66	\$3.99	\$12.54	73	\$5.35	\$3.71	\$7.27
Alaska	82	65	\$8.79	\$7.14	\$11.57	67	\$7.59	\$5.50	\$10.65	5	\$7.27	\$7.27	\$7.27
Central	361	357	\$6.15	\$4.28	\$8.51	216	\$6.27	\$4.40	\$10.76	16	\$4.83	\$3.71	\$5.99
Eastern	356	343	\$6.78	\$5.09	\$9.80	252	\$7.60	\$4.75	\$12.50	3	\$5.58	\$4.99	\$6.75
Great Lakes	729	717	\$6.37	\$4.20	\$9.54	488	\$6.34	\$3.99	\$10.37	25	\$5.26	\$4.30	\$6.15
New England	137	132	\$6.90	\$5.36	\$9.86	86	\$7.94	\$4.75	\$12.54	6	\$6.15	\$5.50	\$6.75
Northwest Mountain	385	375	\$6.76	\$5.15	\$8.95	262	\$6.93	\$4.78	\$10.54	10	\$5.96	\$5.25	\$6.40
Southern	672	663	\$6.26	\$4.51	\$10.85	528	\$6.44	\$4.53	\$11.33	5	\$5.21	\$4.25	\$6.30
Southwest	568	553	\$6.08	\$4.31	\$9.91	411	\$6.31	\$4.03	\$11.29	2	\$5.53	\$4.95	\$6.10
Western-Pacific	341	320	\$6.78	\$4.79	\$9.89	257	\$6.94	\$4.60	\$10.24	1	not available		

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Internet Archive crawled and captured AirNav’s reports 15 times in 2020, which is the time period we are considering in our FAA flight records. The average Jet A fuel price for the 15 times Internet Archive captured AirNav’s reports in this time period is \$4.13 per gallon.⁵ We can use this average to estimate the fuel costs.

$$\begin{aligned} \text{fuel costs} &= 211,101 \text{ gal} \cdot \$4.13/\text{gal} \\ &= \$871,847.13 \end{aligned}$$

The estimated fuel costs for flights in 2020 is \$871,847.13.

⁵ See table under AirNav Fuel Price Reports on page 11

AirNav Fuel Price Reports

Date:	Jet A National Average:	Internet Archive Link:
02/22/2020	4.59	https://web.archive.org/web/20200222090908/https://www.airnav.com/fuel/report.html
03/05/2020	4.60	https://web.archive.org/web/20200305073643/https://www.airnav.com/fuel/report.html
06/27/2020	3.99	https://web.archive.org/web/20200627081024/http://airnav.com:80/fuel/report.html
07/03/2020	4.00	https://web.archive.org/web/20200703221502/http://www.airnav.com:80/fuel/report.html
07/30/2020	4.12	https://web.archive.org/web/20200730221645/https://www.airnav.com/fuel/report.html
08/09/2020	4.08	https://web.archive.org/web/20200809220004/http://www.airnav.com/fuel/report.html
08/11/2020	4.08	https://web.archive.org/web/20200811071039/https://airnav.com/fuel/report.html
08/13/2020	4.09	https://web.archive.org/web/20200813143806/https://www.airnav.com/fuel/report.html
09/29/2020	4.04	https://web.archive.org/web/20200929002515/http://airnav.com/fuel/report.html
10/14/2020	4.05	https://web.archive.org/web/20201014181343/https://www.airnav.com/fuel/report.html
10/16/2020	4.05	https://web.archive.org/web/20201016162815/http://www.airnav.com/fuel/report.html
11/11/2020	4.05	https://web.archive.org/web/20201111203058/http://airnav.com/fuel/report.html
11/12/2020	4.05	https://web.archive.org/web/20201112021651/https://www.airnav.com/fuel/report.html
11/26/2020	4.05	https://web.archive.org/web/20201126202642/http://airnav.com/fuel/report.html
12/03/2020	4.10	https://web.archive.org/web/20201203174746/http://www.airnav.com/fuel/report.html
AVERAGE	4.13	

Jet Fuel Consumption and Costs – 2021

Flight Time

Records we obtained from the FAA show that tail number N7UF made 45 flights, N77UF made 113 flights, and N721FF made 148 flights in 2021. The “GLF4” aircraft type code confirms that the Gulfstream GIV was flown 45 times under N7UF, and the “GLEX” aircraft type code confirms that the Bombardier BD-700-1A10 was flown 261 times under N77UF and N721FF.

	aircraft_id text	aircraft_type text	num_of_flights bigint
1	N721FF	GLEX	148
2	N77UF	GLEX	113
3	N7UF	GLF4	45

FAA records we obtained include departure and arrival time for each record. This allows us to calculate the flight time for each record. 2021 flight records have a total flight time of 537 hours for GLEX aircraft type and 73 hours for GLF4 aircraft type.

Fuel Consumption

The estimated fuel burn rate for the Bombardier BD-700-1A10 (GLEX) is about 495 gallons per hour. FAA records show that this aircraft type has 537 hours of flight time in 2021. We can use this information to estimate fuel consumption.

$$\begin{aligned}\text{fuel consumption} &= 495 \text{ gal/h} \cdot 537 \text{ h} \\ &= 265,815 \text{ gal}\end{aligned}$$

The estimated fuel burn rate for the Gulfstream G-IV is about 448 gallons per hour. FAA records show that this aircraft type has 73 hours of flight time in 2021. The fuel consumption is:

$$\begin{aligned}\text{fuel consumption} &= 448 \text{ gal/h} \cdot 73 \text{ h} \\ &= 32,704 \text{ gal}\end{aligned}$$

The estimated fuel consumption for flights in 2021 is 298,519 gallons.

Fuel Costs

AirNav publishes and regularly updates fuel price reports. These reports average jet A fuel prices at over 2,500 FBOs nationwide.⁶

⁶ <https://www.airnav.com/fuel/report.html>

Fuel price report

Summary of fuel prices at 3631 FBOs nationwide

	FBOs	FUEL TYPES											
		100LL Avgas				Jet A				Mogas (auto)			
		FBOs	Avg	Min	Max	FBOs	Avg	Min	Max	FBOs	Avg	Min	Max
Nationwide	3631	3525	\$6.43	\$4.20	\$11.57	2567	\$6.66	\$3.99	\$12.54	73	\$5.35	\$3.71	\$7.27
Alaska	82	65	\$8.79	\$7.14	\$11.57	67	\$7.59	\$5.50	\$10.65	5	\$7.27	\$7.27	\$7.27
Central	361	357	\$6.15	\$4.28	\$8.51	216	\$6.27	\$4.40	\$10.76	16	\$4.83	\$3.71	\$5.99
Eastern	356	343	\$6.78	\$5.09	\$9.80	252	\$7.60	\$4.75	\$12.50	3	\$5.58	\$4.99	\$6.75
Great Lakes	729	717	\$6.37	\$4.20	\$9.54	488	\$6.34	\$3.99	\$10.37	25	\$5.26	\$4.30	\$6.15
New England	137	132	\$6.90	\$5.36	\$9.86	86	\$7.94	\$4.75	\$12.54	6	\$6.15	\$5.50	\$6.75
Northwest Mountain	385	375	\$6.76	\$5.15	\$8.95	262	\$6.93	\$4.78	\$10.54	10	\$5.96	\$5.25	\$6.40
Southern	672	663	\$6.26	\$4.51	\$10.85	528	\$6.44	\$4.53	\$11.33	5	\$5.21	\$4.25	\$6.30
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Western-Pacific	341	320	\$6.78	\$4.79	\$9.89	257	\$6.94	\$4.60	\$10.24	1	not available		

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Internet Archive crawled and captured AirNav’s reports 12 times in 2021, which is the time period we are considering in our FAA flight records. The average Jet A fuel price for the 12 times Internet Archive captured AirNav’s reports in this time period is \$4.41 per gallon.⁷ We can use this average to estimate the fuel costs.

$$\begin{aligned} \text{fuel costs} &= 298,519 \text{ gal} \cdot \$4.41/\text{gal} \\ &= \$1,316,468.79 \end{aligned}$$

The estimated fuel costs for flights in 2021 is \$1,316,468.79.

⁷ See table under AirNav Fuel Price Reports on page 14

AirNav Fuel Price Reports

Date:	Jet A National Average:	Internet Archive Link:
01/22/2021	4.18	https://web.archive.org/web/20210122030625/https://www.airnav.com/fuel/report.html
01/23/2021	4.16	https://web.archive.org/web/20210123081238/http://airnav.com/fuel/report.html
01/25/2021	4.16	https://web.archive.org/web/20210125173730/https://www.airnav.com/fuel/report.html
04/14/2021	4.36	https://web.archive.org/web/20210414160950/http://airnav.com/fuel/report.html
05/10/2021	4.39	https://web.archive.org/web/20210510200153/https://www.airnav.com/fuel/report.html
05/18/2021	4.41	https://web.archive.org/web/20210518012840/https://airnav.com/fuel/report.html
06/08/2021	4.45	https://web.archive.org/web/20210608224727/http://www.airnav.com/fuel/report.html
06/13/2021	4.46	https://web.archive.org/web/20210613115628/http://www.airnav.com/fuel/report.html
07/26/2021	4.56	https://web.archive.org/web/20210726043420/https://airnav.com/fuel/report.html
08/12/2021	4.62	https://web.archive.org/web/20210812151710/https://airnav.com/fuel/report.html
08/17/2021	4.59	https://web.archive.org/web/20210817030817/https://www.airnav.com/fuel/report.html
09/20/2021	4.63	https://web.archive.org/web/20210920175338/http://www.airnav.com/fuel/report.html
AVERAGE	4.41	

Jet Fuel Consumption and Costs – 2022

Flight Time

Records we obtained from the FAA show that tail numbers N77UF and N721FF made 298 flights between in 2022. The “GLEX” aircraft type code on each record confirms the Bombardier BD-700-1A10 was used for all 298 flights.

	aircraft_id text	aircraft_type text	num_of_flights bigint
1	N721FF	GLEX	137
2	N77UF	GLEX	161

FAA records we obtained include departure and arrival time for each record. This allows us to calculate the flight time for each record. See a sample below:

	aircraft_id text	aircraft_type text	date1 date	departure_airport text	departure timestamp without time zone	arrival_airport text	arrival timestamp without time zone	duration interval	duration_in_minutes numeric
1	N721FF	GLEX	2022-01-02	ASE	2022-01-02 20:49:00	LAS	2022-01-02 21:56:35	01:07:35	67
2	N77UF	GLEX	2022-01-02	ASE	2022-01-02 22:30:12	LAS	2022-01-03 00:09:01	01:38:49	98
3	N721FF	GLEX	2022-01-03	LAS	2022-01-03 17:18:00	JAC	2022-01-03 18:37:09	01:19:09	79
4	N721FF	GLEX	2022-01-03	JAC	2022-01-03 19:30:00	LAS	2022-01-03 20:51:33	01:21:33	81
5	N77UF	GLEX	2022-01-03	LAS	2022-01-03 20:36:00	MMSL	2022-01-03 22:42:46	02:06:46	126
6	N721FF	GLEX	2022-01-04	LAS	2022-01-05 00:00:00	JAC	2022-01-05 01:23:32	01:23:32	83
7	N721FF	GLEX	2022-01-04	JAC	2022-01-05 02:16:00	LAS	2022-01-05 03:37:00	01:21:00	81
8	N721FF	GLEX	2022-01-05	LAS	2022-01-05 21:13:00	JAC	2022-01-05 22:38:46	01:25:46	85
9	N77UF	GLEX	2022-01-07	MMSL	2022-01-07 20:54:25	LAS	2022-01-07 22:48:00	01:53:35	113
10	N721FF	GLEX	2022-01-09	JAC	2022-01-09 20:46:00	LAS	2022-01-09 22:01:41	01:15:41	75

2022 flight records have a total flight time of 613 hours for the GLEX aircraft type.

Fuel Consumption

The estimated fuel burn rate for the Bombardier BD-700-1A10 (GLEX) is about 495 gallons per hour. FAA records show that this aircraft type has 613 hours of flight time between January 1, 2022 and July 31, 2022. We can use this information to estimate fuel consumption.

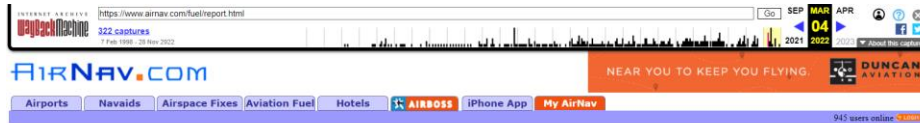
$$\begin{aligned}\text{fuel consumption} &= 495 \text{ gal/h} \cdot 613 \text{ h} \\ &= 303,435 \text{ gal}\end{aligned}$$

The estimated fuel consumption for flights in 2022 is 303,435 gallons.

Fuel Costs

AirNav publishes and regularly updates fuel price reports. These reports average jet A fuel prices at over 2,500 FBOs nationwide.⁸

⁸ <https://www.airnav.com/fuel/report.html>



Fuel price report

Summary of fuel prices at 3656 FBOs nationwide

	FBOs	FUEL TYPES											
		100LL Avgas			Jet A			Mogas (auto)					
		FBOs	Avg	Min	Max	FBOs	Avg	Min	Max	FBOs	Avg	Min	Max
Nationwide	3656	3553	\$5.54	\$3.40	\$9.99	2570	\$5.18	\$2.90	\$9.99	83	\$4.33	\$3.19	\$9.99
Alaska	81	66	\$6.62	\$4.94	\$9.99	65	\$6.33	\$3.69	\$9.99	5	\$9.99	\$9.99	\$9.99
Central	357	354	\$5.20	\$3.92	\$7.90	214	\$4.73	\$3.18	\$8.57	15	\$4.13	\$3.50	\$4.69
Eastern	362	347	\$5.86	\$4.39	\$9.27	255	\$5.72	\$3.45	\$9.99	4	\$4.46	\$4.30	\$4.55
Great Lakes	736	724	\$5.35	\$3.40	\$8.93	487	\$4.94	\$3.00	\$9.15	30	\$3.98	\$3.20	\$4.65
New England	141	136	\$5.99	\$4.49	\$8.92	85	\$5.63	\$3.95	\$9.84	7	\$4.60	\$3.80	\$5.30
Northwest Mountain	384	374	\$5.72	\$4.35	\$8.40	263	\$5.37	\$3.50	\$8.70	10	\$4.87	\$4.65	\$5.24
Southern	674	665	\$5.52	\$3.50	\$9.22	527	\$5.12	\$3.00	\$9.79	7	\$4.03	\$3.19	\$4.72
Southwest	578	566	\$5.35	\$3.80	\$7.77	414	\$4.99	\$2.90	\$8.38	4	\$4.52	\$4.00	\$5.04
Western-Pacific	343	321	\$5.87	\$4.69	\$8.69	260	\$5.50	\$3.69	\$9.08	1	not available		

This report prepared by AirNav on 04-Mar-2022
 Report includes prices reported between 08-Feb-2022 and 04-Mar-2022
 At least 50% of prices are no more than 2 days old (02-Mar-2022 or more recent)
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Internet Archive crawled and captured AirNav’s reports 21 times in 2022, which is the time period we are considering in our FAA flight records. The average Jet A fuel price for the 21 times Internet Archive captured AirNav’s reports in this time period is \$6.47 per gallon.⁹ We can use this average to estimate the fuel costs.

$$\begin{aligned}
 \text{fuel costs} &= 303,435 \text{ gal} \cdot \$6.43/\text{gal} \\
 &= \$1,951,087.05
 \end{aligned}$$

The estimated fuel costs for flights in 2022 is \$1,951,087.05.

⁹ See table under AirNav Fuel Price Reports on page 17

AirNav Fuel Price Reports

Date:	Jet A National Average:	Internet Archive Link:
3/4/2022	\$5.18	https://web.archive.org/web/20220304084856/https://www.airnav.com/fuel/report.html
3/21/2022	\$5.64	https://web.archive.org/web/20220321200620/https://www.airnav.com/fuel/report.html
4/11/2022	\$6.09	https://web.archive.org/web/20220411112117/https://www.airnav.com/fuel/report.html
4/12/2022	\$6.11	https://web.archive.org/web/20220412185430/https://www.airnav.com/fuel/report.html
5/3/2022	\$6.32	https://web.archive.org/web/20220503010519/https://www.airnav.com/fuel/report.html
5/4/2022	\$6.44	https://web.archive.org/web/20220504183902/https://www.airnav.com/fuel/report.html
5/5/2022	\$6.47	https://web.archive.org/web/20220505193750/https://www.airnav.com/fuel/report.html
5/16/2022	\$6.70	https://web.archive.org/web/20220516125738/http://www.airnav.com/fuel/report.html
5/21/2022	\$6.78	https://web.archive.org/web/20220521104235/https://airnav.com/fuel/report.html
5/28/2022	\$6.70	https://web.archive.org/web/20220528222346/https://www.airnav.com/fuel/report.html
6/12/2022	\$6.77	https://web.archive.org/web/20220612161244/https://www.airnav.com/fuel/report.html
8/7/2022	\$6.69	https://web.archive.org/web/20220807172808/https://www.airnav.com/fuel/report.html
8/8/2022	\$6.69	https://web.archive.org/web/20220808014116/https://www.airnav.com/fuel/report.html
8/12/2022	\$6.62	https://web.archive.org/web/20220812204758/https://www.airnav.com/fuel/report.html
8/13/2022	\$6.62	https://web.archive.org/web/20220813030050/https://www.airnav.com/fuel/report.html
8/14/2022	\$6.60	https://web.archive.org/web/20220814074349/https://www.airnav.com/fuel/report.html
9/1/2022	\$6.59	https://web.archive.org/web/20220901035351/https://www.airnav.com/fuel/report.html
10/5/2022	\$6.47	https://web.archive.org/web/20221005044318/http://www.airnav.com/fuel/report.html
10/7/2022	\$6.50	https://web.archive.org/web/20221007091048/http://airnav.com/fuel/report.html
11/28/2022	\$6.56	https://web.archive.org/web/20221128213344/https://www.airnav.com/fuel/report.html
11/30/2022	\$6.51	https://web.archive.org/web/20221130145730/https://www.airnav.com/fuel/report.html
AVERAGE	\$6.43	

Fuel Burn Rate for GLEX Aircraft Type

The Bombardier Model BD-700-1A10 Global Express airplane has the following specifications:¹

- Max Fuel: 6428 gal
- Range: 6330 nautical miles at Mach 0.85.
- Max altitude: 51,000 ft

Please note that

$$\begin{aligned}6330 \text{ NM} &= 6330 \text{ NM} \cdot \frac{1.15078 \text{ mi}}{1 \text{ NM}} \\ &\approx 7284.4 \text{ mi}\end{aligned}$$

Therefore, the max range is about 7284.4 miles at Mach 0.85.

The Mach number M can be represented by the following equation:

$$M = \frac{v_o}{v_s}$$

where v_o is speed of the object (m/s), and v_s is the speed of sound (m/s).²

The speed of sound can be represented by the following equation

$$v_s = 331 \text{ m/s} \cdot \sqrt{\frac{T}{273}}$$

where T is temperature (Kelvin).³ At the max altitude of 51,000 ft, the temperature is 216.69 Kelvin.⁴ Notice that

$$\begin{aligned}v_s &= 331 \text{ m/s} \cdot \sqrt{\frac{216.69}{273}} \\ &\approx 294.89 \text{ m/s}\end{aligned}$$

The speed of the object at 51,000 ft can be represented by

$$\begin{aligned}v_o &= M \cdot v_s \\ &= (0.85)(294.89 \text{ m/s}) \\ &\approx 250.66 \text{ m/s}\end{aligned}$$

¹<https://drs.faa.gov/browse/excelExternalWindow/2BD62C27A3E4FFC886256BC900590B49.0001>
<https://drs.faa.gov/browse/excelExternalWindow/E6F57AF8FF294AA38625861700538966.0001>
https://wwwapps.tc.gc.ca/saf-sec-sur/2/nico-celn/c_d.aspx?lang=eng&aprv_num=A-177&ISU_NUM=22&START_DATE=2022-05-04&AUTH_DESC=&DESC=&FRGN_NUM=&aprv_type=TA&PARTS_NUM=&id_num=1078

²<https://www.grc.nasa.gov/www/k-12/airplane/mach.html>

³[https://phys.libretexts.org/Bookshelves/University_Physics/Book%3A_University_Physics_\(OpenStax\)/Book%3A_University_Physics_I_-_Mechanics_Sound_Oscillations_and_Waves_\(OpenStax\)/17%3A_Sound/17.03%3A_Speed_of_Sound#:~:text=If%20the%20temperature%20is%20T,s%E2%88%9AT273K.&text=v%3Df%CE%BB](https://phys.libretexts.org/Bookshelves/University_Physics/Book%3A_University_Physics_(OpenStax)/Book%3A_University_Physics_I_-_Mechanics_Sound_Oscillations_and_Waves_(OpenStax)/17%3A_Sound/17.03%3A_Speed_of_Sound#:~:text=If%20the%20temperature%20is%20T,s%E2%88%9AT273K.&text=v%3Df%CE%BB)

⁴<https://www.grc.nasa.gov/www/k-12/airplane/atmosmet.html>

Please note that

$$250.66 \text{ m/s} = \frac{250.66 \text{ m}}{\text{s}} \cdot \frac{3.28084 \text{ ft}}{1 \text{ m}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} \cdot \frac{3600 \text{ s}}{1 \text{ h}}$$
$$\approx 561 \text{ mph}$$

Therefore, the max range is about 7284.4 miles at 561 mph.

Let the max range R (mi) be represented by the following equation

$$R = v_o \cdot t$$

where v_o is the object speed (mph) and t is the max flight time (h).⁵ Notice that

$$t = \frac{R}{v_o}$$
$$= \frac{7284.4}{561}$$
$$\approx 13.0 \text{ h}$$

Let the max fuel load F (gal) be represented by the following equation

$$F = r \cdot t$$

where r is the fuel burn rate (gal/h) and t is the max flight time (h).⁶ Notice that

$$r = \frac{F}{t}$$
$$= \frac{6428}{13.0}$$
$$\approx 494.5 \text{ gal/h}$$
$$\approx 495 \text{ gal/h}$$

Therefore, the fuel consumption rate for the GLEX aircraft type is about 495 gal/h. The fuel burn rate is estimated for this jet at its cruising altitude. Other sources that reached the same or very close fuel consumption rates include Jack Sweeny⁷ at 500 gallons per hour and Guardian Jet⁸ at 530 gallons per hour.

⁵https://www1.grc.nasa.gov/beginners-guide-to-aeronautics/range-constant-velocity/#:~:text=R%20%3D%20V%20*t%20max,given%20on%20a%20separate%20page

⁶<https://www.grc.nasa.gov/www/k-12/VirtualAero/BottleRocket/airplane/ftime.html>

⁷https://github.com/Jxck-S/plane-notify/blob/multi/aircraft_type_fuel_consumption_rates.json

⁸https://resources.globalair.com/specs/aircraftbrochures/3318_Bombardier%20Global%20Express%20brochure,%20performance,%20market,%20operating%20costs.pdf

Fuel Burn Rate for GLF4 Aircraft Type

According to the Office of Marine & Aviation Operations, the Gulfstream IV-SP (G-IV) has the following specifications:¹

- Max Flight Time: 8 hr 45 min (with a 1 hour fuel reserve)
- Max Fuel: 29,500 lb

Please note that

$$\begin{aligned} 29500 \text{ lb} &= 29500 \text{ lb} \cdot \frac{1 \text{ gal}}{6.75 \text{ lb}} \\ &\approx 4370.37 \text{ gal} \end{aligned}$$

Therefore, we can also say the Gulfstream IV-SP (G-IV) has a max flight time of 9.75 hours with a max fuel load of about 4370.37 gallons.

Let the max fuel load F (gal) be represented by the following equation

$$F = r \cdot t$$

where r is the fuel burn rate (gal/h) and t is the max flight time (h).² Notice that

$$\begin{aligned} r &= \frac{F}{t} \\ &= \frac{4370.37}{9.75} \\ &\approx 448.24 \text{ gal/h} \\ &\approx 448 \text{ gal/h} \end{aligned}$$

Therefore, the fuel burn rate for the GLF4 aircraft type is about 448 gal/h. The fuel burn rate is estimated for this jet based on performance data from the Office of Marine & Aviation Operations. Other sources that reached the same or very close fuel consumption rates include Jack Sweeny³ at 479 gallons per hour and Falcona Private Jets⁴ at 479 gallons per hour.

¹<https://www.oma.noaa.gov/learn/aircraft-operations/aircraft/gulfstream-iv-sp-g-iv>

²<https://www.grc.nasa.gov/www/k-12/VirtualAero/BottleRocket/airplane/ftime.html>

³https://github.com/Jxck-S/plane-notify/blob/multi/aircraft_type_fuel_consumption_rates.json

⁴https://falconaprivatejets.com/general/discover-the-gulfstream-giv-sp/?doing_wp_cron=1675812781.2243239879608154296875#:~:text=Two%20Rolls%2DRoyce%20Mk%20611,4%20passengers%20with%20available%20fuel.