

# Fly Quiet Program Update & Annual Noise Report Summary

January 1, 2024 – March 31, 2024  
2024 1<sup>st</sup> Quarter Update

Jackson Hole Airport  
June 19<sup>th</sup> 2024



# 2024 Q1 FLY QUIET PROGRAM

## Fly Quiet Goal

Encourage pilots to fly quieter aircraft and to utilize procedures that minimize noise over Grand Teton National Park as well as noise sensitive areas of our community.



# FLY QUIET PROGRAM OVERVIEW

Measures noise abatement goals/metrics and awards users that best achieve those goals\*

Continually redefines and expands noise reduction goals using multiple metrics and measures

- Expanded voluntary curfew hours in 2023
- Increased the penalty for curfew hour operations in 2024
- Added noise measurement results from additional sites including new Bar B Bar site for exceedance in 2024

Local voluntary initiative; operator involvement is critical

Provides information to users on how to improve their operations

***\*The Fly Quiet Program applies to Commercial and General Aviation jet aircraft. Non-jet aircraft and helicopter operations are not part of the FQP but are addressed in other noise abatement programs such as the Voluntary Curfew.***



# FLY QUIET PROGRAM ELEMENTS AND BONUSES

ELEMENTS	Goal	Measure
<b>Fleet Quality</b>	Acknowledge/encourage operators to fly the quietest aircraft	<ul style="list-style-type: none"> <li>• FAA Aircraft Certificated Stage Noise Level</li> <li>• Stage 5 is highest</li> </ul>
<b>Minimize Higher Noise Events</b>	Minimize the highest aircraft noise events from individual overflights	<ul style="list-style-type: none"> <li>• Track high noise events per total events measured</li> <li>• Zero high events is the highest score (100%)</li> </ul>
<b>Minimize Non-Compliance of Voluntary Curfew</b>	Rated upon number of times an operation occurred during the voluntary curfew hours (9:30pm to 7:00am)	<ul style="list-style-type: none"> <li>• Number of flights in curfew hours</li> <li>• <u>Low score</u> is based upon <u>greater number</u> of curfew non-compliance</li> <li>• Zero non-compliance operations is the highest score (100%)</li> </ul>
<b>Flight Procedure Compliance</b>	Acknowledge/encourage operators to fly the three noise abatement procedures	<ul style="list-style-type: none"> <li>• Three procedures evaluated with results combined into one score</li> <li>• Rated on % of flights following procedure goal</li> <li>• Full compliance is the highest score for each of the following:               <ul style="list-style-type: none"> <li>• <i>Flying NextGen arrival path vs. Conventional path</i></li> <li>• <i>Flying on or east of the NextGen arrival path</i></li> <li>• <i>Eliminating drift to the west when departing south</i></li> </ul> </li> </ul>
BONUSES	Goal	Measure
<b>Quiet Fleet Bonus</b>	Acknowledge/encourage operators that operate the very quietest aircraft	<ul style="list-style-type: none"> <li>• Aircraft that are at least 10 dB quieter than the Stage 5 standard. Up to 5 points for percent of fleet that is Stage 5+</li> </ul>
<b>Fly New Procedure Bonus</b>	Flying the new arrival procedure	<ul style="list-style-type: none"> <li>• Rated on the number of operations using the new procedure</li> <li>• 1-4 operations are awarded one point. 5 or more operations are awarded two points and so on (up to 5 bonus points)</li> </ul>



# FLY QUIET SCORING

## ❖ Scoring System

- Results based on a 0-100 scoring system
- **100** is the best possible score with the potential for additional bonus points
- Each element is scored and weighted
- Overall best score is sum of the points for all four categories plus bonus points
- The highest scoring operations are rated as Top Tier and the lowest are rated as Low Tier
- To compare year over year results, past year Fly Quiet scores have been updated to reflect the most current scoring criteria

FLY QUIET RATING	FLY QUIET SCORE
FQ Top Tier	90-100+
FQ Compliant	70-89.9
FQ Low Tier	0-69.9

## ❖ Notifications and Acknowledgements

- All Fly Quiet Aircraft are scored and grouped in the categories below

## ❖ Operations are categorized by type of operator and number of operations

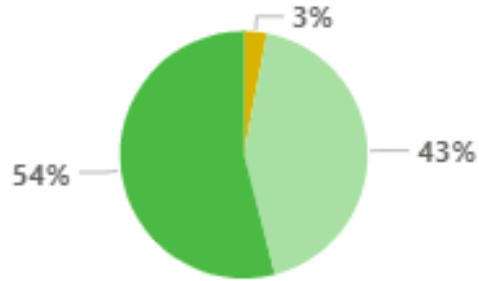
CATEGORY OF FLY QUIET AIRCRAFT OPERATOR	CLASSIFICATION BY NUMBER OF ANNUAL OPERATIONS*
Commercial and Regional Airlines	-Minimum of 48 or more annual operations (12 per quarter)
GA Fleet Operator (i.e. EJA, fractional owners/fleets also referred to as Part 135)	-Operators with between 16 and 48 annual operations (Between 6 and 12 per quarter)  -Operators with 48 or more annual operations (12 per quarter)
GA Single Owner/Operator (i.e., N1234)	-Operators with between 16 and 48 annual operations (Between 6 and 12 per quarter)  -Operators with 48 or more annual operations (12 per quarter)



# 2024 Q1 FLY QUIET OPERATIONS SUMMARY

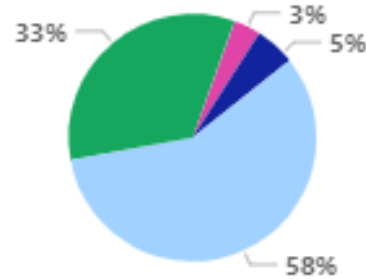
### Percent GA Operations by FQ Tier

● FQ Low Tier ● FQ Compliant ● FQ Top Tier



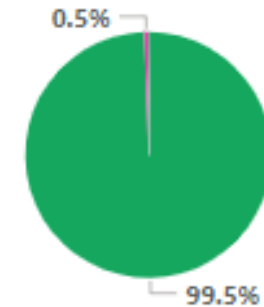
### Percent GA Stage

● S3 ● S4 ● S5 ● S5+



### Percent Curfew Operations

● Regular Hours ● Curfew Hours



### % FQ Aircraft Flying GPS vs CONV

● Compliant ● Non Compliant



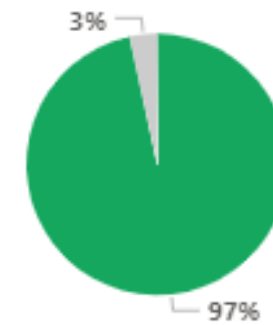
### % FQ Aircraft on or East of GPS Procedure

● Compliant ● Non Compliant



### % FQ Aircraft Departing So. Without Drift

● Compliant ● Non Compliant



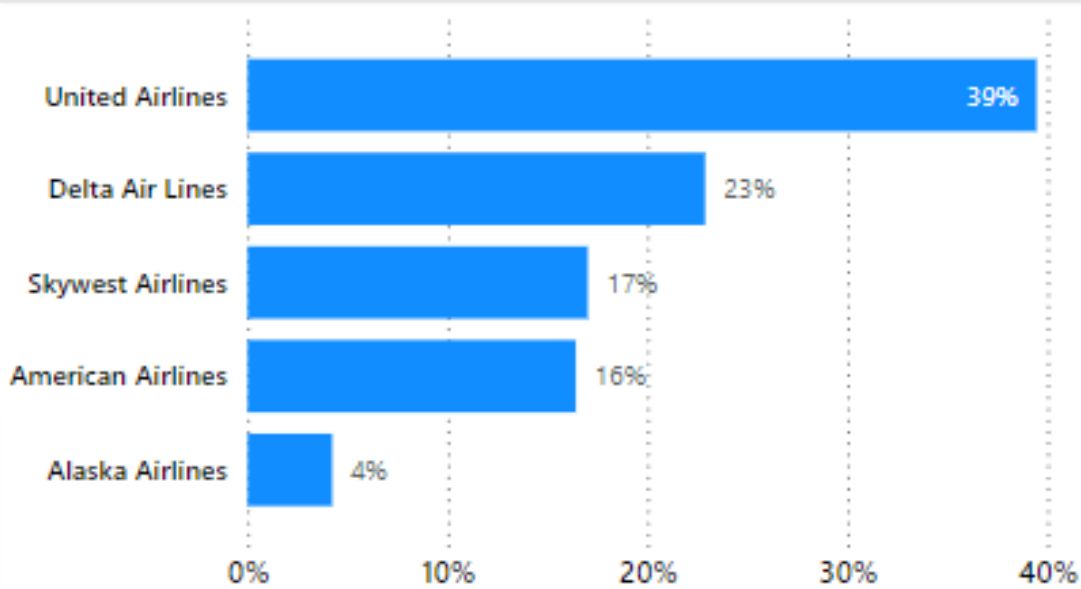
*Data is from the Airport's Noise Monitoring System and may not exactly match official FAA counts.*

- 2024 Q1 shows reduction in number of voluntary curfew hour operations.
- Continued improvement in flying flight procedure goals.
- Note: interim quarterly results show trends that may be influenced by seasonal conditions or short periods of irregular operations.

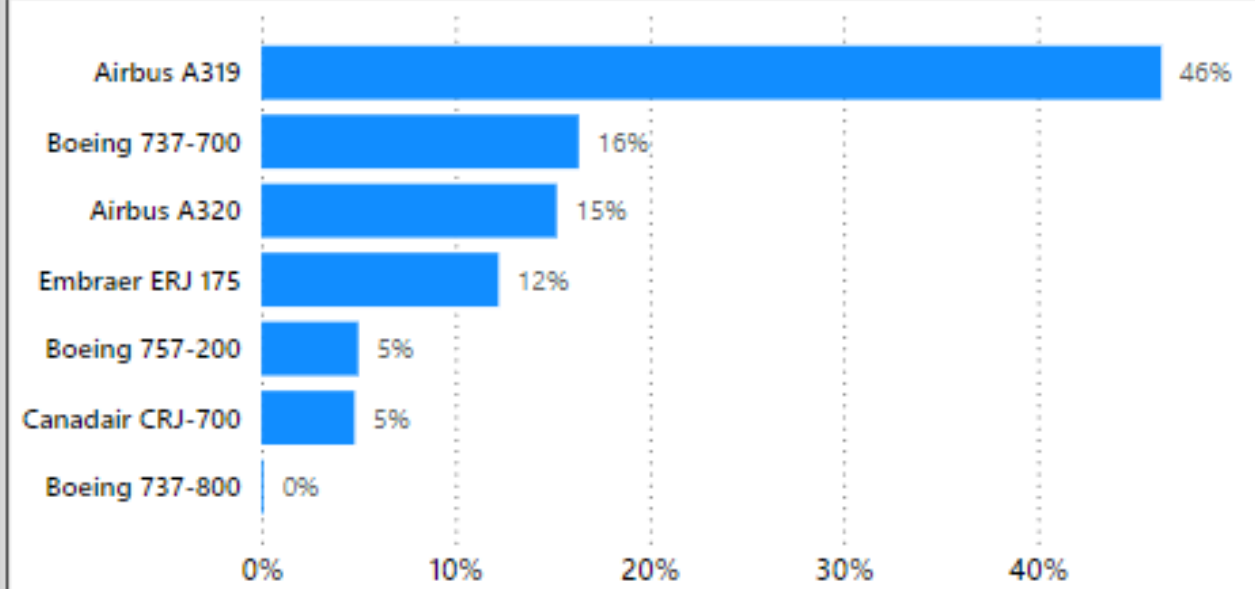


# 2024 Q1 FLY QUIET OPERATIONS SUMMARY

### Commercial Operators (%)



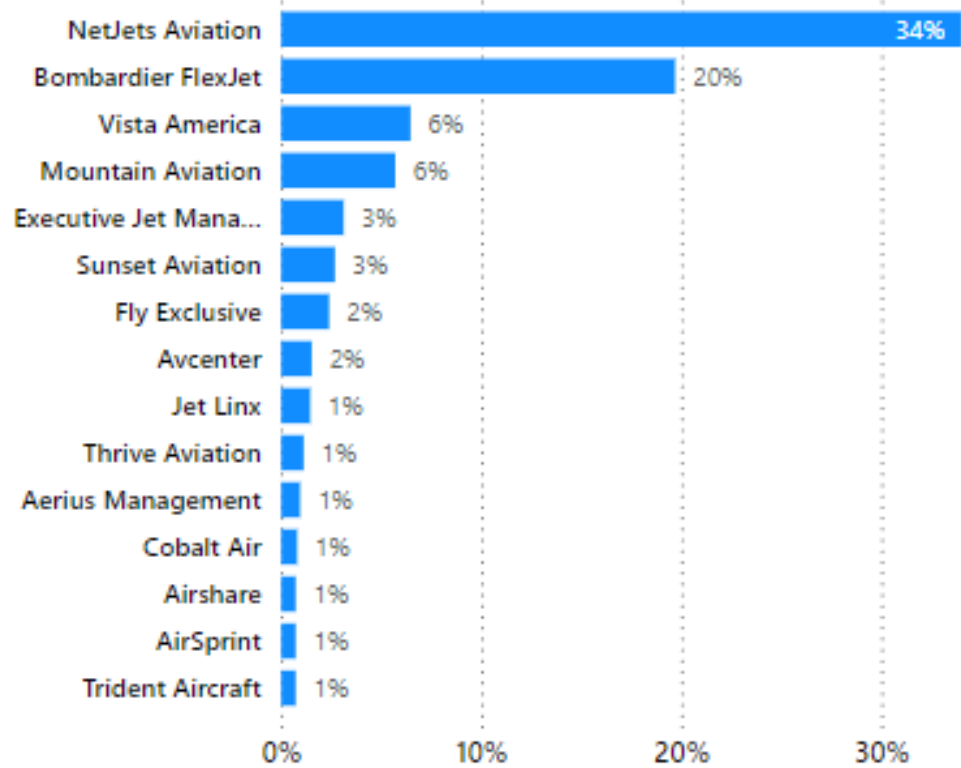
### Commercial Aircraft (%)



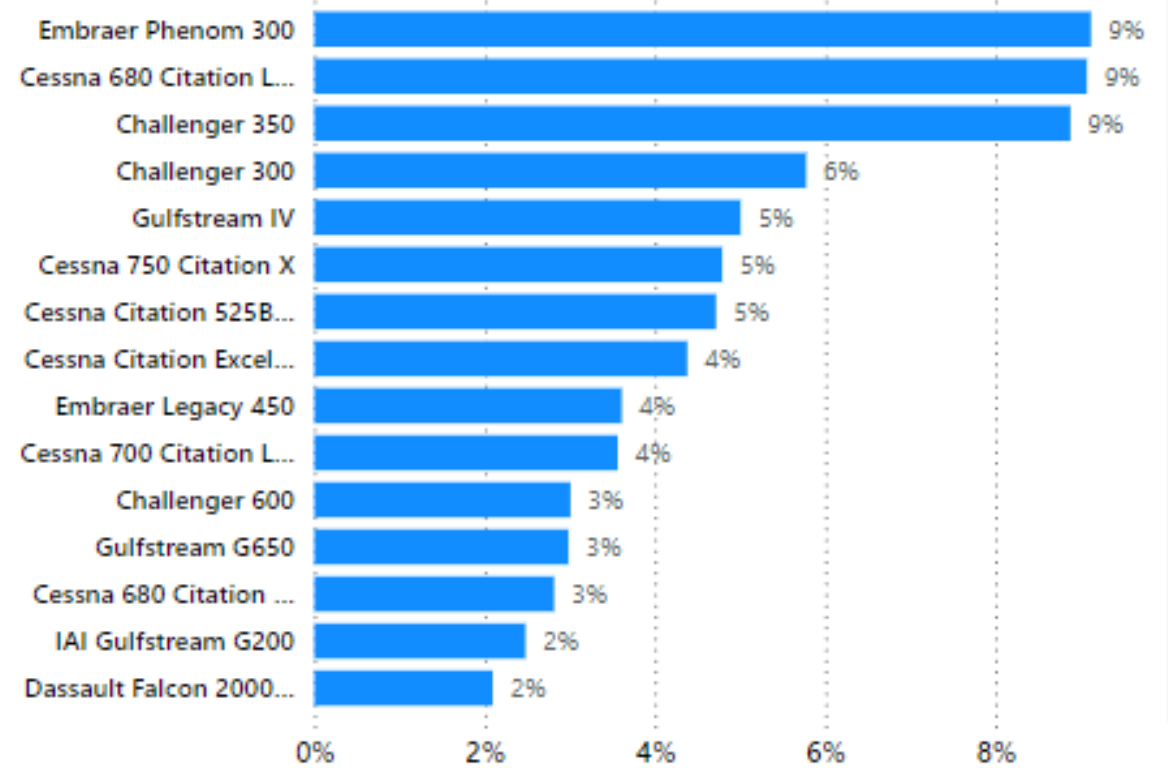


# 2024 Q1 FLY QUIET OPERATIONS SUMMARY

## Top 15 GA Operators (%)



## Top 15 GA Aircraft (%)







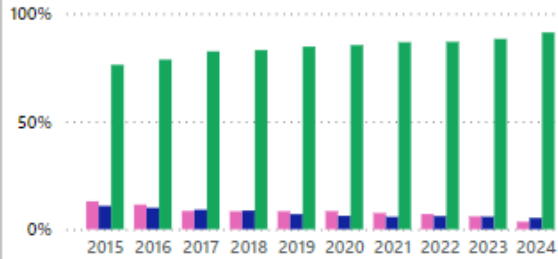
# 2024 Q1 FLY QUIET PROGRAM TRENDS INDIVIDUAL ELEMENTS

## Fleet Quality

### GA Percent Stage Certification

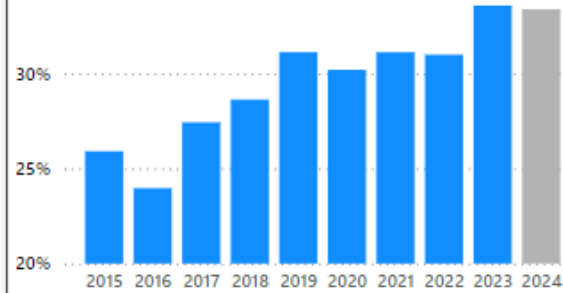
#### Percent GA Aircraft by Noise Stage

● Stage 3 ● Stage 4 ● Stage 5



### Percent GA 10 dB better than Stage 5

#### Percent GA Aircraft are Stage 5 Plus



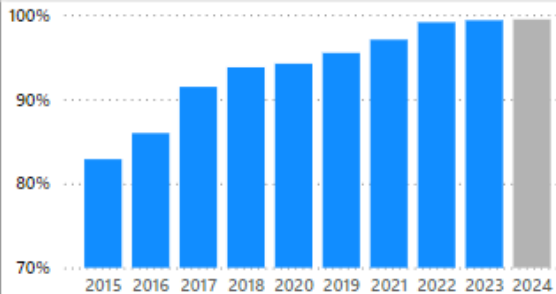
2024 is Q1 Only

- Aircraft fleet quality has improved due to older, louder GA aircraft replaced with newer, quieter aircraft
  - In 2015, 80% of GA were Stage 5
  - In 2024, 94% of GA were Stage 5
- All flight procedure measures showed improvement over the past years.
- The use of the new arrival procedure is low, but continues to increase year over year

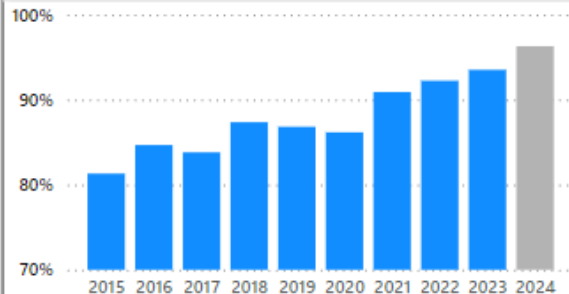
## Flight Procedure Compliance

### Flight Procedures Compliance (2015-2024 Q1)

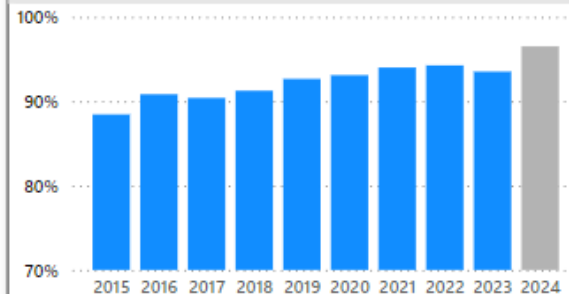
#### Percent FQ Aircraft Flying GPS vs CONV



#### Percent FQ Aircraft on or East of GPS Procedure

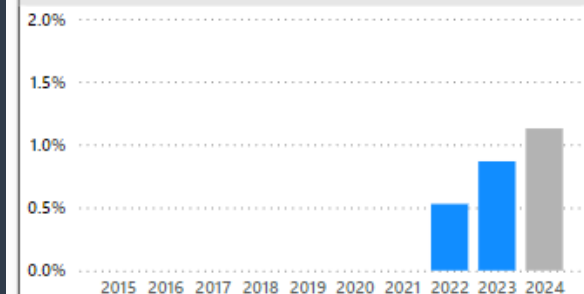


#### Percent FQ Aircraft Departing So. Without Drift



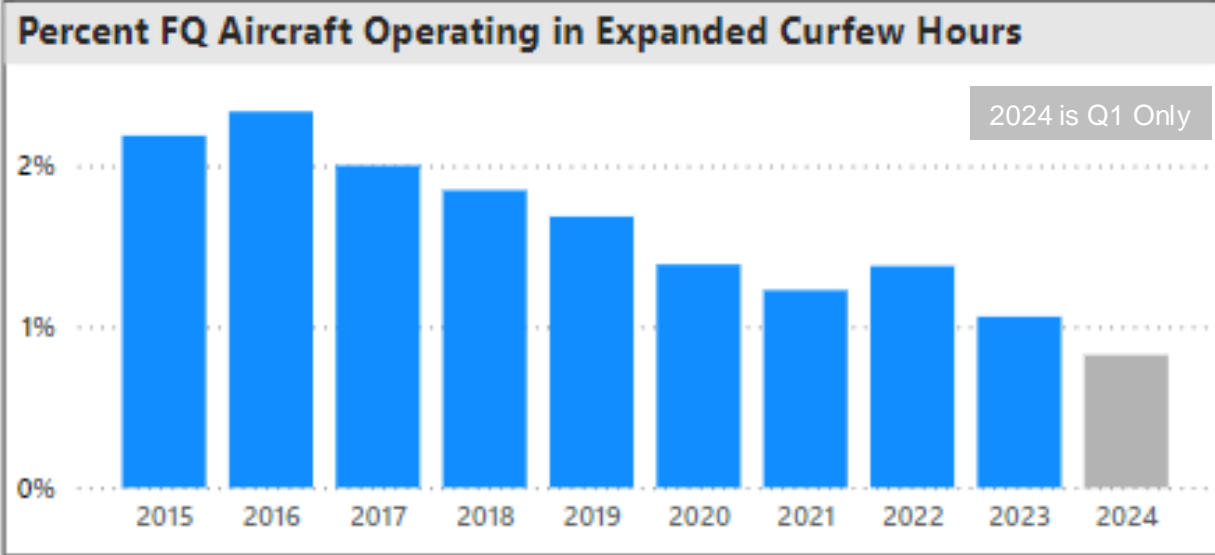
### Percent New Arrival Procedure Use

#### Per. So. Arrivals of FQ Aircraft on New Procedure





# 2024 Q1 FLY QUIET PROGRAM TRENDS CURFEW HOURS OPERATIONS



- During the first quarter, the number of Fly Quiet aircraft operations during the expanded voluntary curfew hours have decreased 48% over operations in the same hours for the first quarter in 2023.
- While the Airport and the Fixed Based Operator have made considerable outreach efforts to minimize the curfew hour operations, many factors can contribute to this reduction.
- Seasonal trends including weather, operational events, and market demand can affect the results.
- Curfew hours operations account for 0.8% of operations for general aviation and 0.1% of commercial operations.
- Multiple operators had reductions in voluntary curfew hour operations during 2024 Q1.



# 2024 Q1 FLY QUIET PROGRAM TRENDS CURFEW HOURS OPERATIONS

## FLY QUIET SCORE FOR OPERATORS WITH HIGHEST NUMBER OF OPERATIONS

Operator	Operator Name	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EDG	Jet Edge	35.9	67.1	85.7	95.6	69.0	81.1	73.6	78.5	80.9	87.9
EJA	NetJets Aviation	69.0	71.3	82.6	83.7	83.2	83.2	84.1	86.8	89.1	94.7
EJM	Executive Jet Management	71.7	69.5	77.5	80.2	88.4	83.9	77.8	75.8	77.8	89.6
LXJ	Bombardier FlexJet	68.7	73.3	80.0	83.5	80.9	82.8	83.5	83.8	85.3	85.1
OPT	Flight Options	72.0	70.5	87.0	86.3	86.6		77.9		90.4	87.1
TTE	Avcenter	54.1	46.4	68.0	64.5	59.1	48.1	67.8	58.4	80.7	81.9
XOJ	XOJet	84.4	86.7	92.6	93.1	80.7	94.6	87.9	99.3	103.3	105.0

FLY QUIET RATING	FLY QUIET SCORE
FQ Top Tier	90-100+
FQ Compliant	70-89.9
FQ Low Tier	0-69.9

## PERCENT OF TOTAL OPERATIONS IN THE VOLUNTARY CURFEW PERIOD

Operator	Operator Name	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EDG	Jet Edge	11.4%	0.0%	5.0%	0.0%	2.9%	0.0%	1.6%	0.6%	0.7%	0.0%
EJA	NetJets Aviation	2.8%	2.6%	2.5%	2.6%	1.7%	1.0%	1.5%	1.7%	0.8%	0.2%
EJM	Executive Jet Management	1.3%	1.3%	3.0%	2.6%	0.0%	0.4%	0.9%	1.4%	1.0%	1.2%
LXJ	Bombardier FlexJet	2.0%	1.5%	3.1%	2.1%	2.3%	1.1%	1.7%	2.3%	1.4%	2.2%
OPT	Flight Options	3.1%	2.8%	1.7%	2.7%	3.1%		0.0%		0.0%	0.0%
TTE	Avcenter	7.4%	5.1%	5.6%	8.7%	7.8%	7.8%	2.6%	2.5%	0.0%	0.0%
XOJ	XOJet	0.8%	0.7%	0.7%	0.9%	1.4%	0.0%	1.0%	0.0%	0.0%	0.0%

## CURFEW OPERATIONS DURING NEW EXPANDED HOURS (9:30PM TO 7:00 AM)

Operator	Operator Name	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EDG	Jet Edge	4	0	2	0	2	0	2	1	3	0
EJA	NetJets Aviation	51	57	50	55	39	28	55	51	28	2
EJM	Executive Jet Management	2	3	6	6	0	1	3	5	4	1
LXJ	Bombardier FlexJet	7	11	18	14	22	16	28	31	28	12
OPT	Flight Options	13	10	5	7	6		0		0	0
TTE	Avcenter	4	5	7	13	19	9	2	4	0	0
XOJ	XOJet	2	2	2	2	4	0	3	0	0	0

2024 Extrapolated to Full Year
0
8
4
48
0
0
0

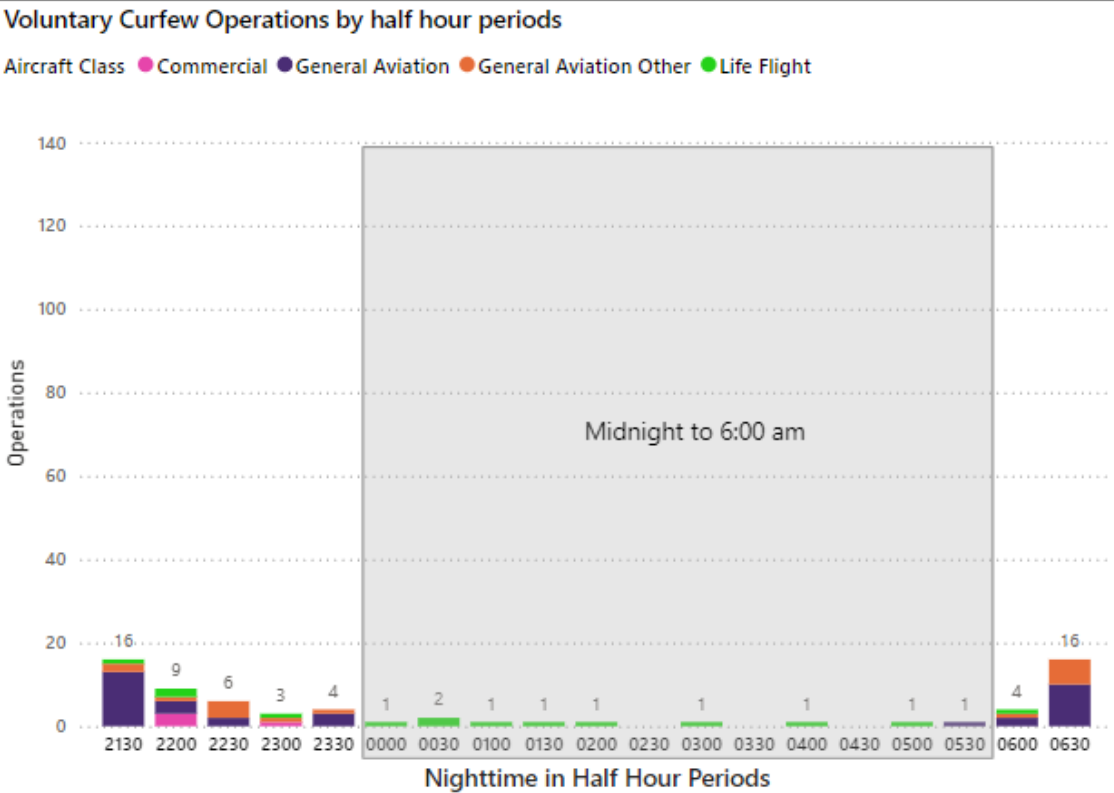
Note: Past year Fly Quiet scores have been updated to reflect the most current scoring criteria.

Note: Counts for Curfew operations for 2024 is Q1 only. All other years reflect the whole year of operations



# 2024 Q1-CURFEW HOURS OPERATIONS INCLUDING FQ AND OTHER OPERATIONS

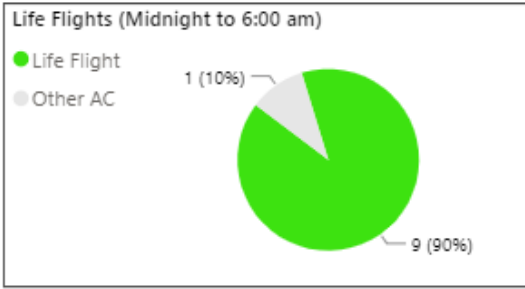
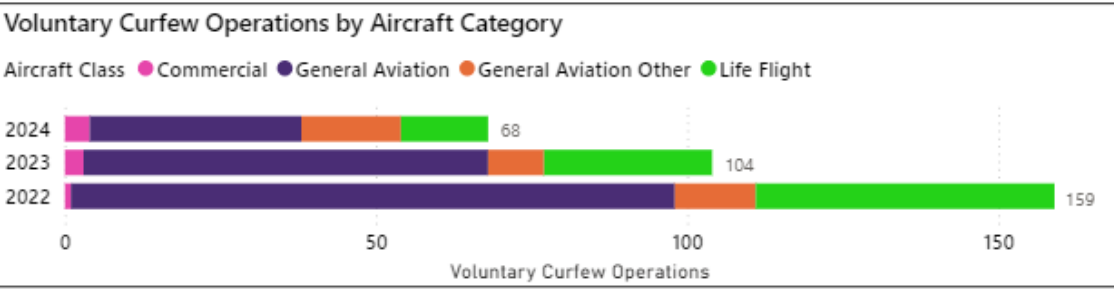
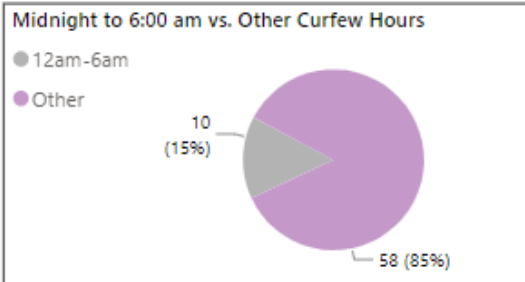
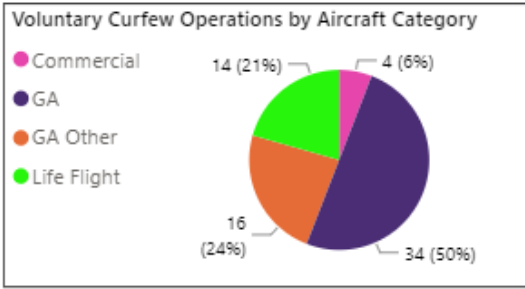
## Night Operations (Voluntary Curfew Hours) 2024 Q1



**Voluntary Curfew Hours**

**General Aviation**  
9:30 pm - 6:59 am for arrivals & departures

**Commercial**  
11:30 pm to 5:59 am for arrivals  
10:00 pm to 5:59 am for departures



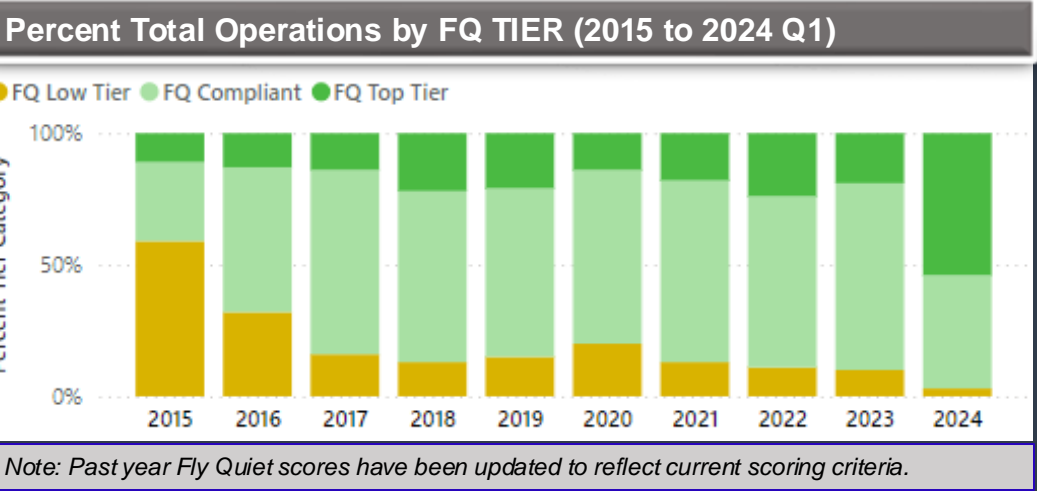
- **Life Flights Operations:** Life Flights, all but one were propeller aircraft, account for 21% of curfew hours operations.
- **Fly Quiet Aircraft Voluntary Curfew Operations:** In 2024, there were 4 Commercial and 35 GA operations in the expanded curfew hours – this is 0.5% of the total Commercial and GA operations.
- **Other General Aviation Operations:** Other General Aviation except the life flights (propeller piston, propeller turbo prop, helicopter, and VFR operations) accounts for 35 of the Voluntary Curfew hour operations, which is 47% of the nighttime operations; 4 of these operations occurred between midnight and 6am.
- **Midnight to 6am:** During this time period, there were no commercial and 1 GA operation. The majority of the curfew hour operations are during the shoulder hours.

For comparative purposes, data for prior years is 1<sup>st</sup> quarter only



# 2024 Q1 FLY QUIET PROGRAM TRENDS - OVERALL

## Overall Airport Fly Quiet Trends



### Noted Individual Improvements in 2024 Q1 over past year

Category	Code	Operator	Improvement
Air Carrier	UAL	United Airlines	Reduced Curfew Hour Operations
	ASA	Alaska Airlines	
GA Fleet	EJA	NetJets	Reduced Curfew Hour Operations
	FTH	Mountain Aviation	
Single Operator	N307GP	Air Cashmere	Reduced Curfew Hour Operations and High Noise Events

- 2024 Q1 showed a trend of improvement in individual and overall scores.
- GA Top Tier operations:
  - 2024 Q1: 60%
  - 2023 Q1: 54%
  - 2015 Q1: 11%

## Top Scoring Operators 2024 Q1

Air Carrier			OVERALL
Call Sign / N-Number	Owner / Operator	Total Ops	Total Fly Quiet Score
ASA	Alaska Airlines	134	90.9
DAL	Delta Air Lines	725	88.3
AAL	American Airlines	520	85.5
SKW	Skywest Airlines	539	84.1
UAL	United Airlines	1,250	83.9

Largest GA Fleet Operator			OVERALL
Call Sign / N-Number	Owner / Operator	Total Ops	Total Fly Quiet Score
UJC	Ultimate Air Shuttle	19	104.1
ASP	AirSprint	20	102.3
JTZ	Nicholas Air	18	101.9
FTH	Mountain Aviation	157	101.2
PXT	Pacific Coast Jet	18	100.6

Largest GA Single Operator			OVERALL
Call Sign / N-Number	Owner / Operator	Total Ops	Total Fly Quiet Score
N54PV	Moss Lane Ventures, LLC	12	105.0
N124MV	RC Aviation, LLC	23	102.0
N482PG	ROGER ROGER LLC	19	101.2
N405PC	TIME 2 FLY LLC	18	98.0
N306MF	TAMKO Building Products, ...	16	95.3



# NEXT STEPS

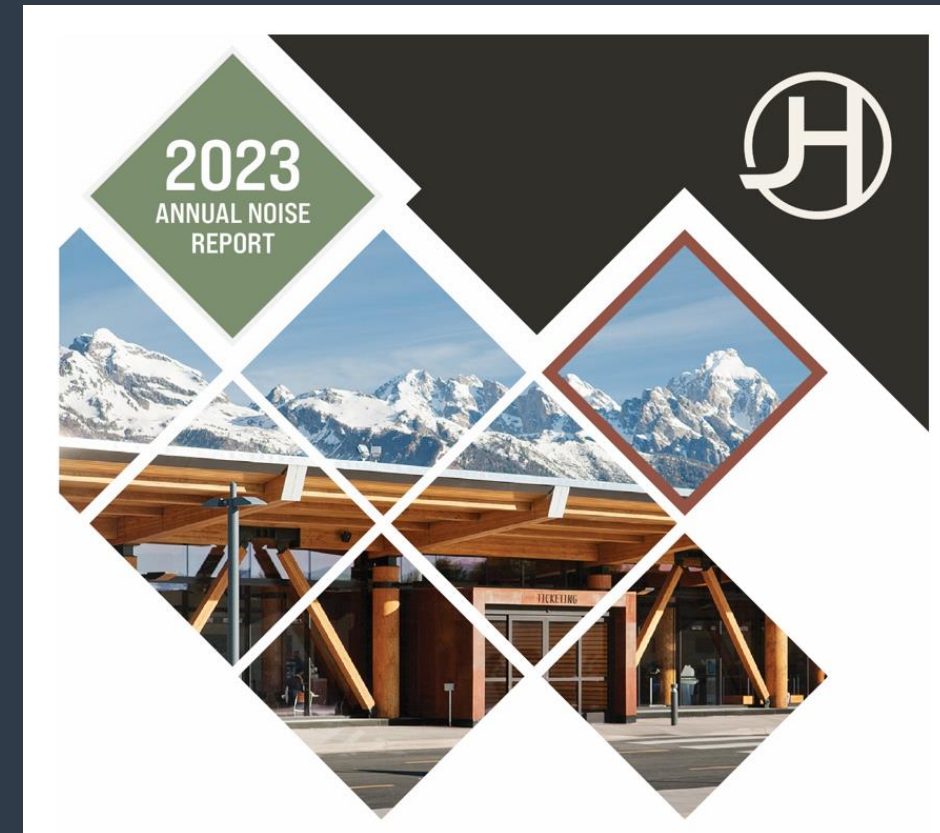
## ❖ Planned 2024 Activities

- Promote Top Tier operators
- Continue to work with Low Tier operators to improve score
- Contact operators that continue to have curfew hour operations
- Outreach to operators each quarter with performance metrics
- Advertise and promote Fly Quiet Top Tier operators in national industry publications



# 2023 ANNUAL NOISE REPORT

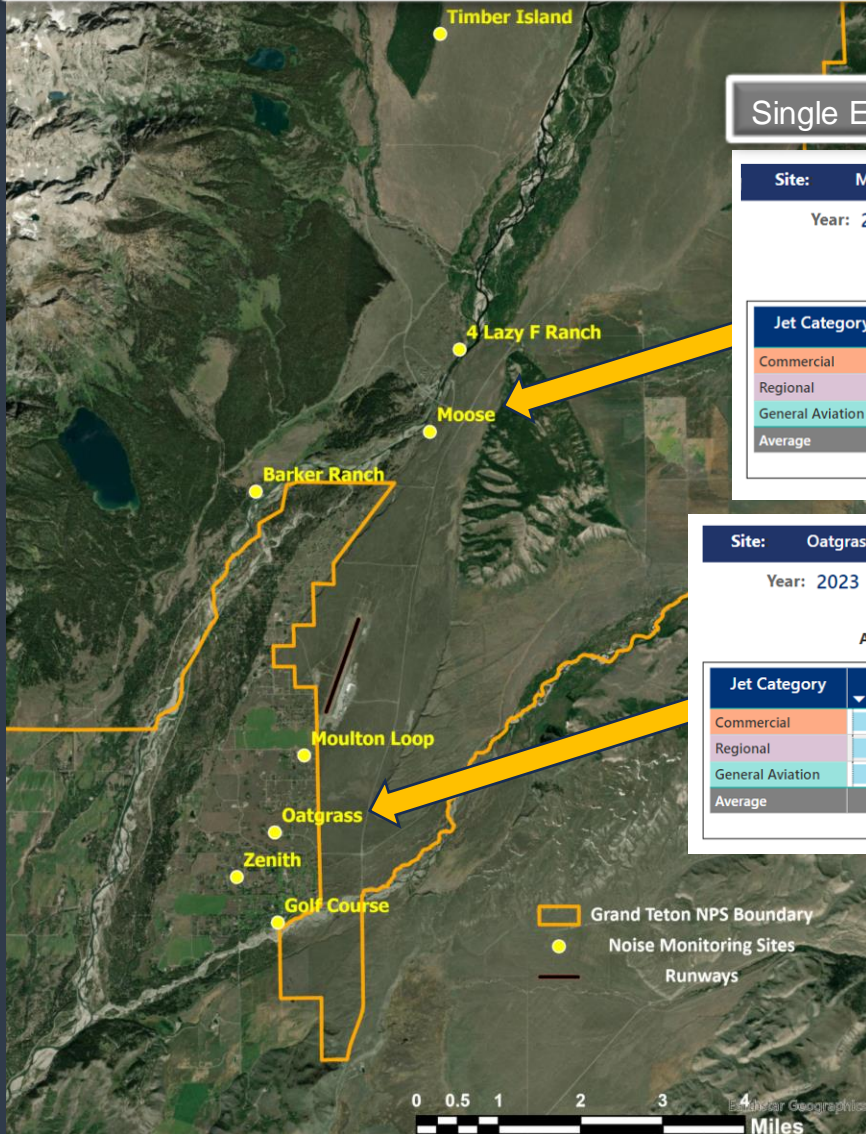
- ❖ Presents information on annual operational activity levels
- ❖ Presents noise measurement data results
  - Single Event
  - Long-term DNL
- ❖ Presents modeled contour results
- ❖ Identifies changes and trends
- ❖ Determines compliance with Use Agreement requirements
- ❖ Results show:
  - Airport is in compliance with Use Agreement noise limits in Grand Teton National Park (45 and 55 DNL limits)
  - Noise levels do not exceed FAA guidelines for residential land uses (65 DNL guideline)
- ❖ Report is on the Airport website





# 2023 ANNUAL NOISE REPORT RESULTS

## Measurement Sites



## Single Event Measurements

Site: MOOSE AVERAGE MAXIMUM LEVEL BY TYPE OF AIRCRAFT

Year: 2023 Operation: Arrival Runway: 19

Average Maximum Noise Level by Jet Category

Jet Category	Lmax (Avg)
Commercial	78
Regional	76
General Aviation	72
Average	74

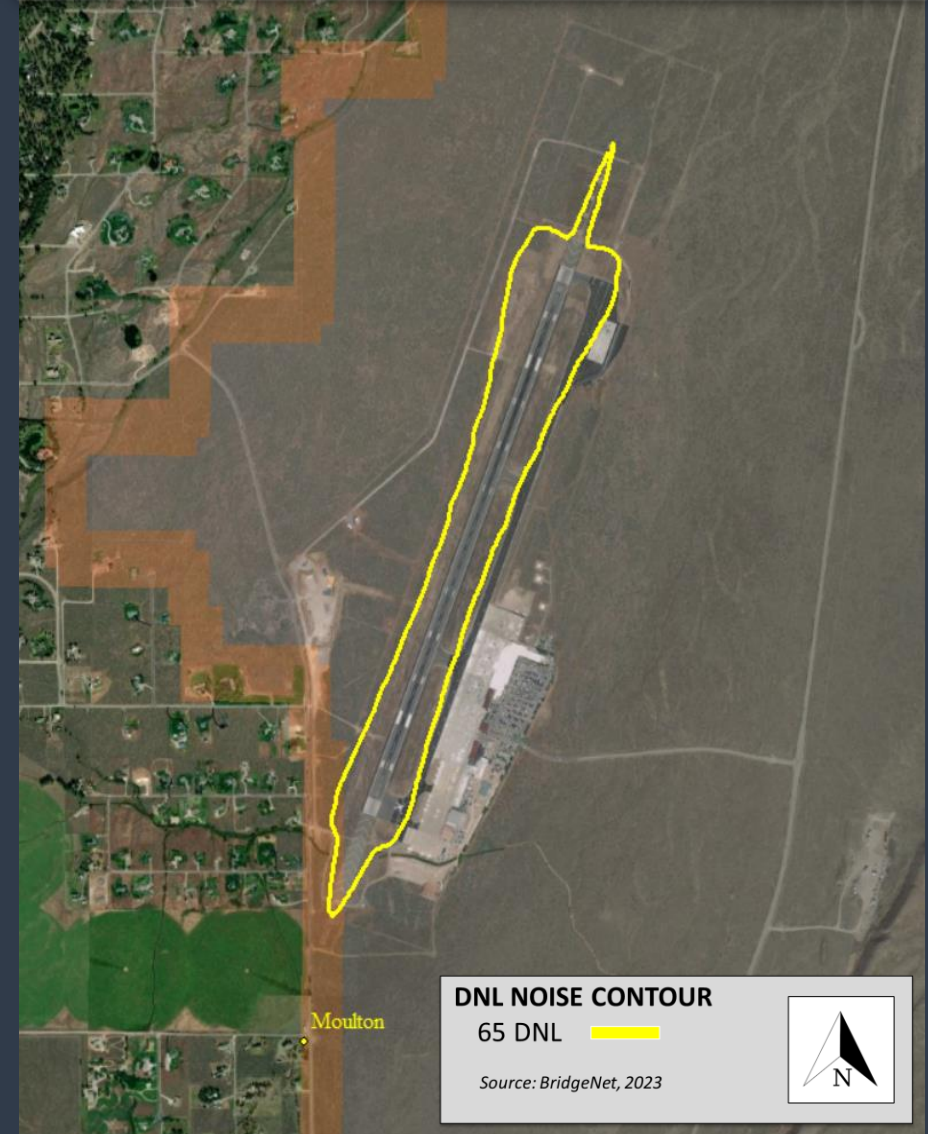
Site: Oatgrass AVERAGE MAXIMUM LEVEL BY TYPE OF AIRCRAFT

Year: 2023 Operation: Departure Runway: 19

Average Maximum Noise Level by Jet Category

Jet Category	Lmax (Avg)
Commercial	78
Regional	78
General Aviation	74
Average	76

## Noise Contours



DNL NOISE CONTOUR

65 DNL

Source: BridgeNet, 2023

