

# **GTE/24 IP/09**

# **Vertical Safety Monitoring Report**

**Miami Oceanic, New York West, and San Juan  
FIRs**

## **CALENDAR YEAR 2023**

Presented to: GTE/24

By: NAARMO

Date: 5 – 9 August 2024

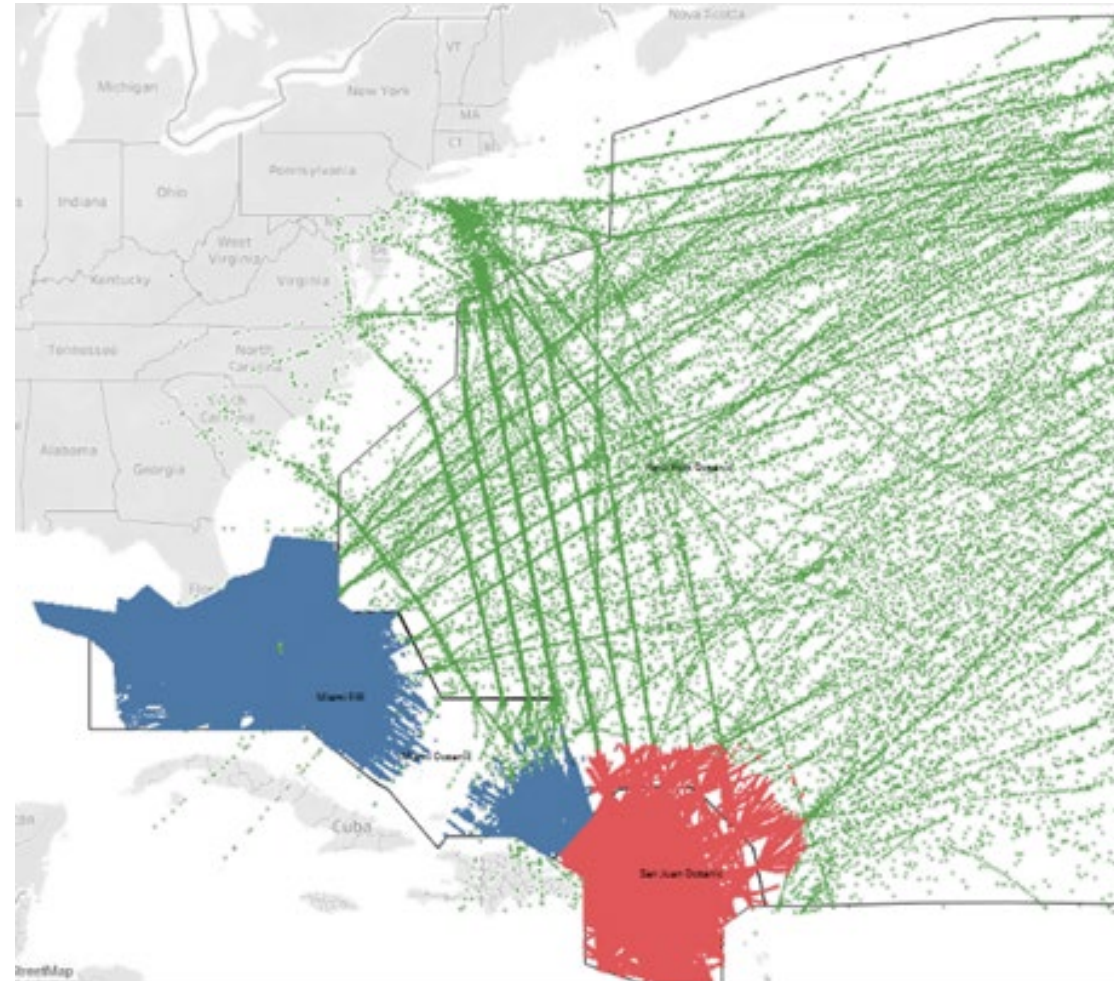


**Federal Aviation  
Administration**



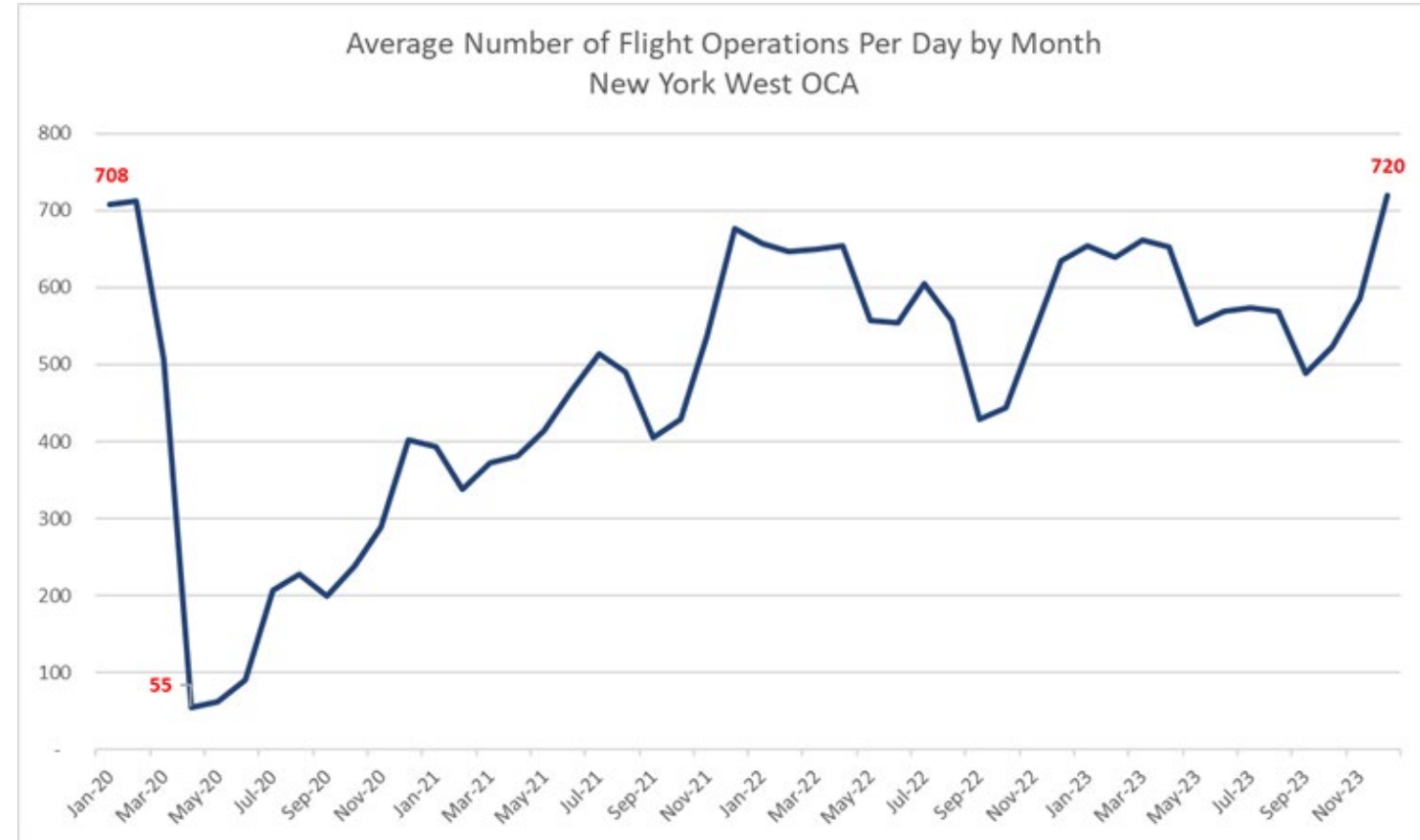
# Miami Oceanic, New York West, and San Juan FIRs

- **Figure displays aircraft positions from 1-9 Dec 2023**
- **New York West FIR is oceanic (high seas) airspace**
  - HF radio and data link communications
  - HF radio and ADS-C pos reports
- **Miami and San Juan FIRs have radar and terrestrial ADS-B surveillance, VHF communications**



# New York West FIR

Traffic counts during peak times in 2023 are back to pre-COVID levels



# Reported LHDs by Category - 2023

| LHD Code     | LHD Category Description  | Number of LHD | Duration (minutes) | Number of FLs Crossed |
|--------------|---|---------------|--------------------|-----------------------|
| <b>A</b>     | Flight crew failing to climb/descend the aircraft as cleared                      | 5             | 0                  | 7                     |
| <b>B</b>     | Flight crew climb/descend without ATC clearance                                   | 12            | 0                  | 18                    |
| <b>C</b>     | Incorrect operation of airborne equipment   | 1             | 1                  | 0                     |
| <b>D</b>     | ATC system loop error   | 14            | 48.5               | 8                     |
| <b>E1</b>    | Coordination errors (wrong FL, time, route) as a result of human factors issues   | 7             | 2                  | 1                     |
| <b>E2</b>    | Negative Coordination as a result of human factors issues                         | 10            | 8                  | 0                     |
| <b>I</b>     | Turbulence or other weather-related causes  | 3             | 0                  | 0                     |
| <b>J</b>     | TCAS resolution advisory; flight crew correctly following the resolution advisory | 12            | 0                  | 0                     |
| <b>TOTAL</b> |   | <b>64</b>     | <b>59.5</b>        | <b>34</b>             |

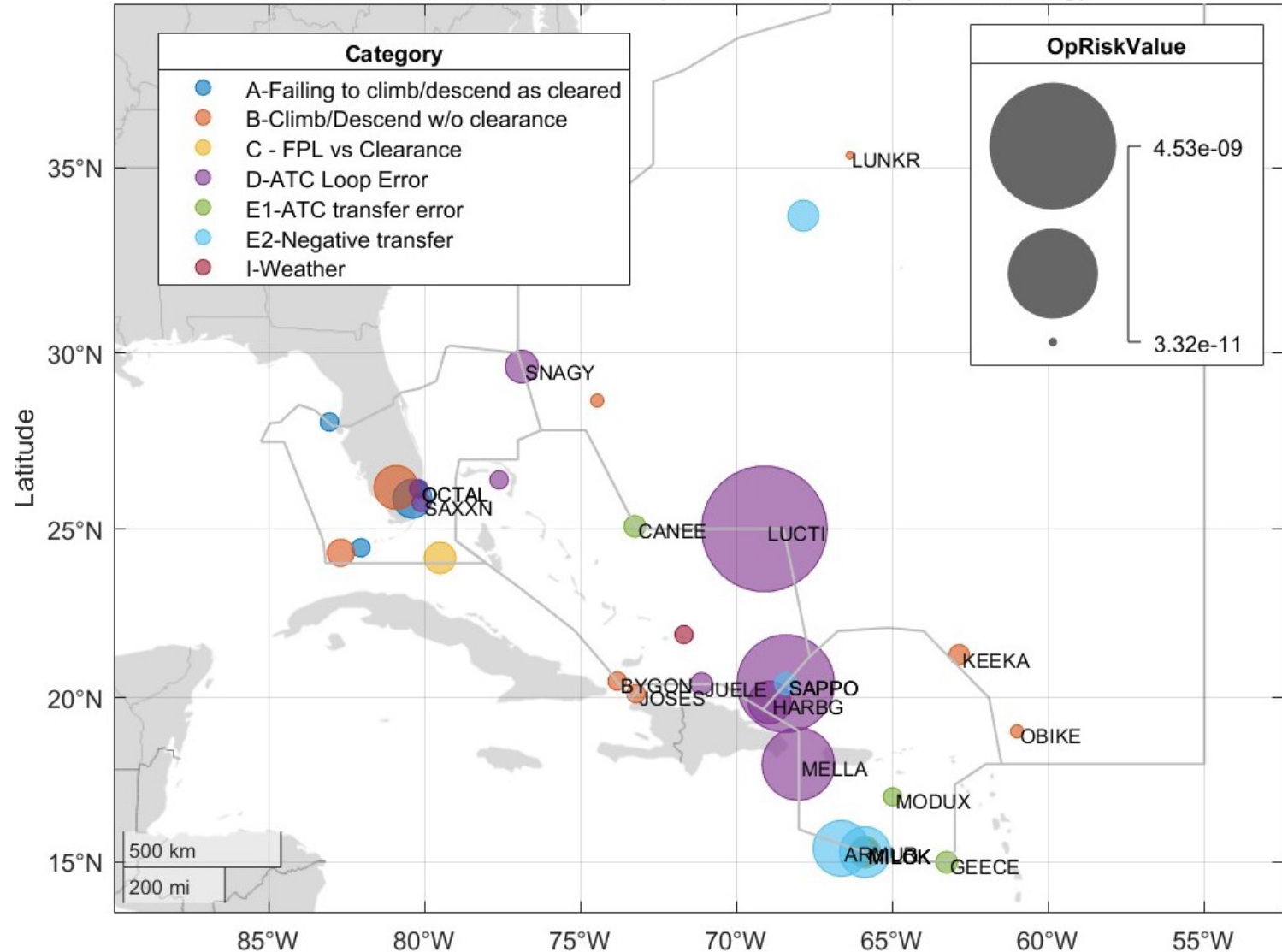


# Reported LHDs

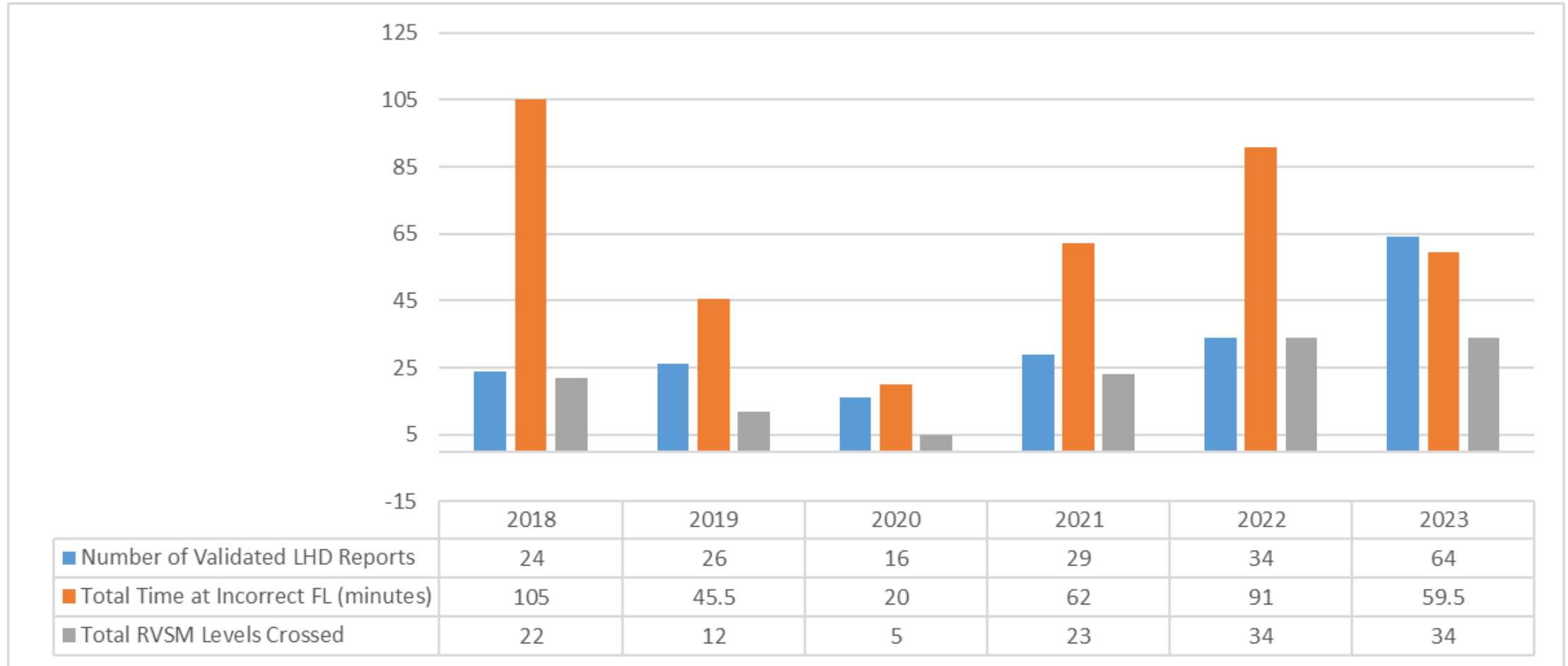
## Top Contributors to Vertical Risk Estimate

- **31 min LHD**
  - Category D in ZNY-W
- **9 min Category D and 0.5 min Category E2**
  - Malfunctioning transponder on aircraft
  - ATC failure to follow procedures
- **5 min Category D and E1**
- **2 LHDs both Cat E2**
  - 3 min OV MILOK
  - 2 min OV ARMUR
- **LHD with 5 FLs crossed**
  - Category B (and I), pilot descended to avoid Wx
- **Noted planned improvements**
  - AIDC coming soon to San Juan – Piarco coordination
  - AIDC coming soon to San Juan – Julianna coordination

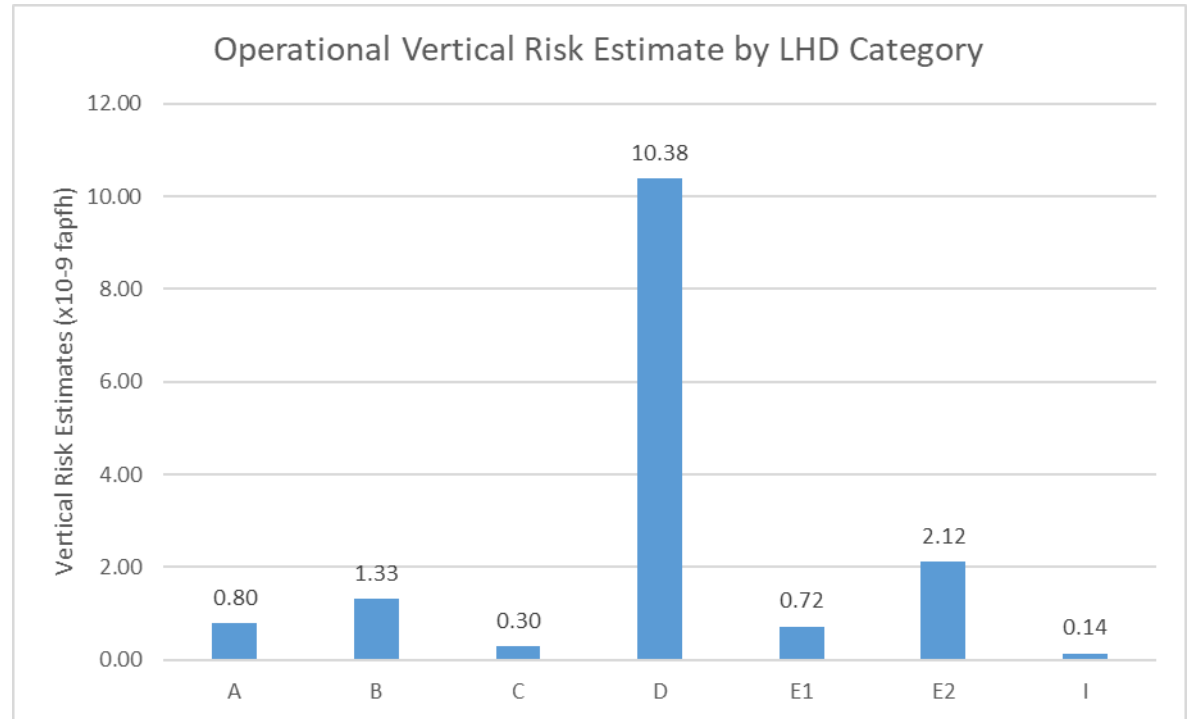
US Caribbean Airspace Reported LHDs 2023 (Risk-bearing)



# LHD Trends



# Reported LHDs for Vertical Operational Risk



| Airspace                    | Number of LHD | Duration at unexpected FL (min) | Number of unexpected FLs crossed |
|-----------------------------|---------------|---------------------------------|----------------------------------|
| Miami Oceanic/San Juan FIRs | 39            | 24.5                            | 24                               |
| New York West FIR           | 11            | 35                              | 10                               |
| <b>Total</b>                | <b>50</b>     | <b>59.5</b>                     | <b>34</b>                        |



# 2023 Vertical Risk Estimates

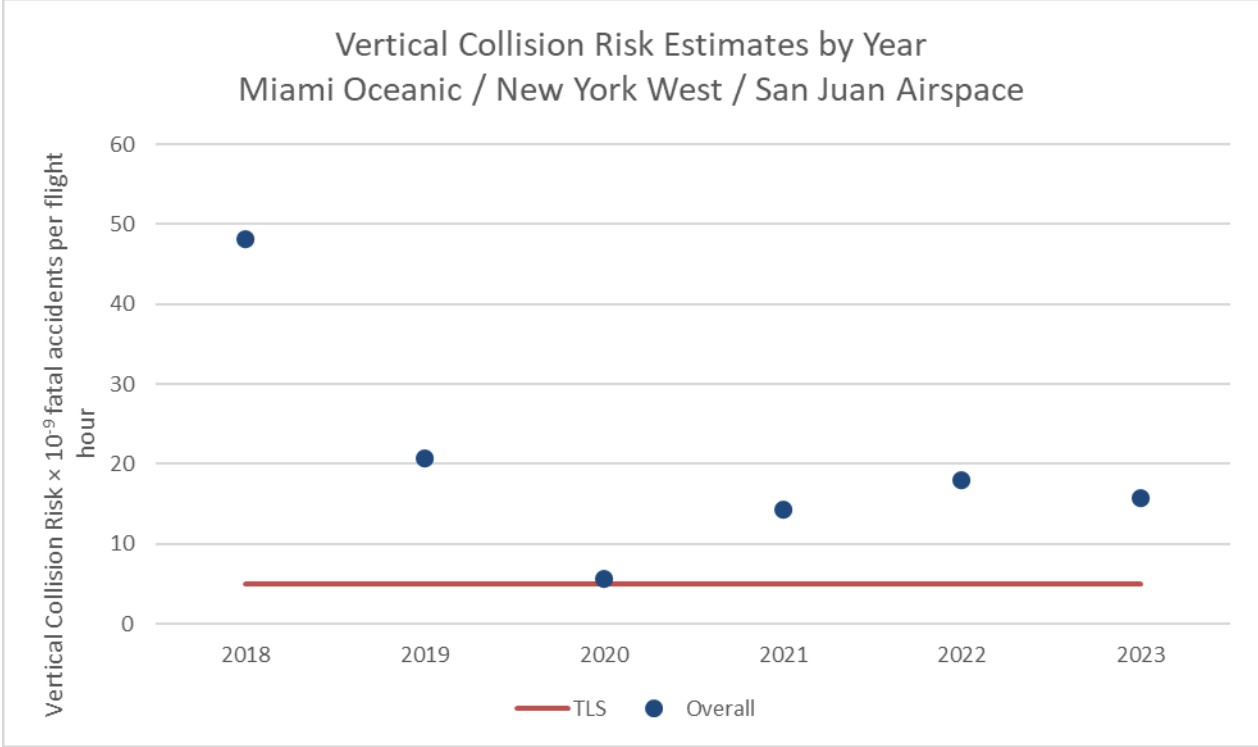
| Airspace                   | Technical   | Operational  | Overall      |
|----------------------------|-------------|--------------|--------------|
| New York West              | 0.04        | 5.45         | 5.49         |
| Miami Oceanic and San Juan | 0.03        | 10.22        | 10.25        |
| <b>Total</b>               | <b>0.07</b> | <b>15.67</b> | <b>15.74</b> |

*\*Risk estimates are  $\times 10^{-9}$  fapfh*





# Vertical Risk Estimate Trend



| Year | Technical Risk | Operational Risk | Overall Vertical Risk | TLS |
|------|----------------|------------------|-----------------------|-----|
| 2018 | 0.07           | 48.04            | 48.11                 | 5   |
| 2019 | 0.07           | 20.67            | 20.75                 | 5   |
| 2020 | 0.07           | 5.61             | 5.68                  | 5   |
| 2021 | 0.08           | 14.28            | 14.36                 | 5   |
| 2022 | 0.07           | 17.92            | 17.99                 | 5   |
| 2023 | 0.07           | 15.67            | 15.74                 | 5   |



# Summary

- **The estimated vertical risk estimate for 2023 decreased from previous year**
- **This decrease is directly related to the decrease in the time spent at unexpected flight levels**

