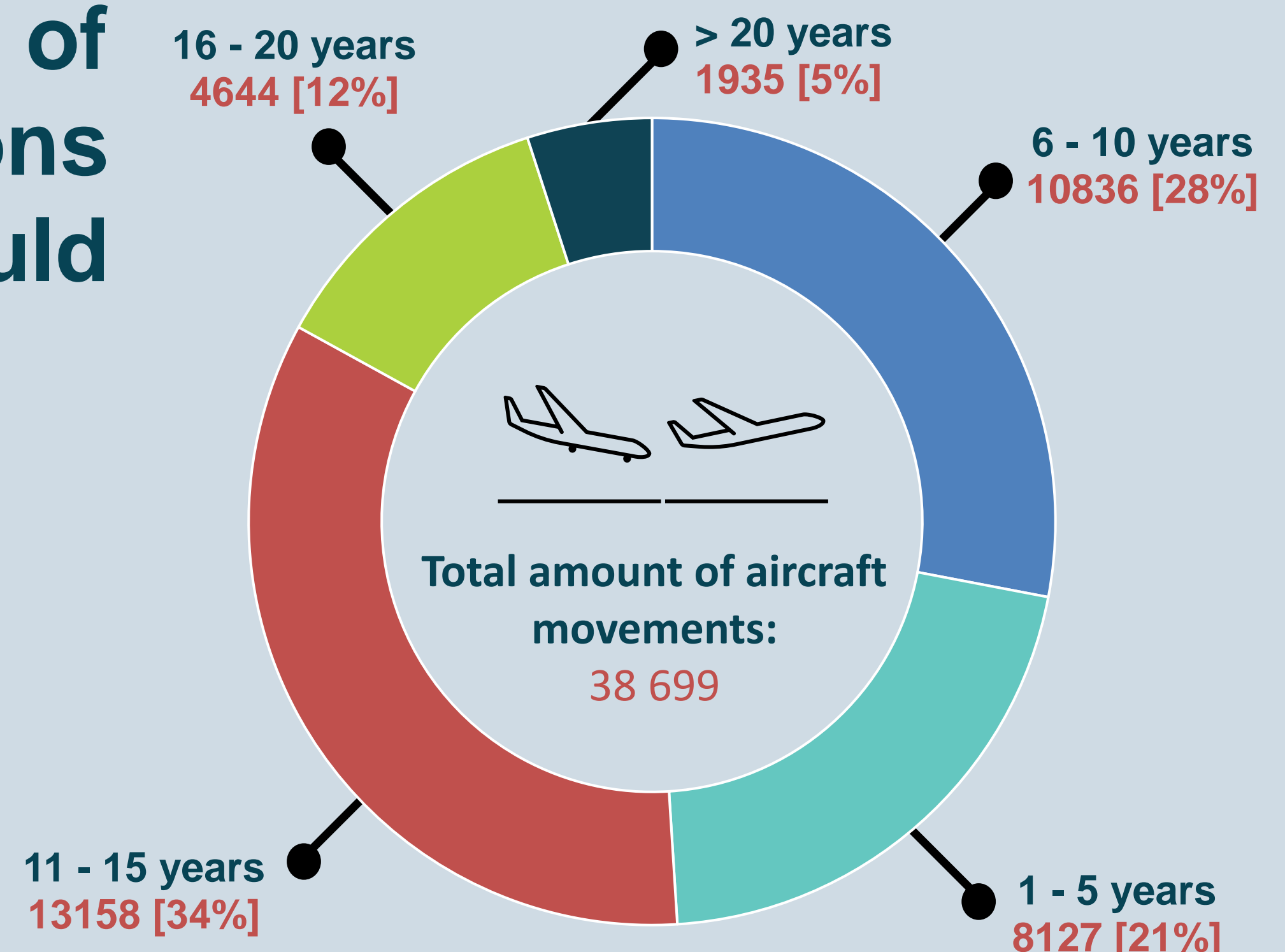


VNO flight data analysis and noise measurements suggests that age of air fleet impacts noise emissions and renewal of oldest aircrafts would reduce overall noise levels at VNO

- In 2023 38 699 separate aircraft movements were recorded at VNO
- Average aircraft age 14.35 years
- Airbus A320, Boeing B738 and Airbus BCS3 were most common airplanes in 2023. 57.87% of total aircraft movement was done by mentioned models.
- Noise measurements done at vicinity of the airport shows that older aircrafts exceeded L_{eq} and L_{MAX} limits by average of 7 dBA and 23 dBA, respectively.

VNO Aircraft Fleet Age 2023



Introduction

The expansion of airport operations worldwide yields numerous advantages, yet it also brings about certain adverse consequences, notably noise pollution. To understand the impact of noise and how to mitigate its effects airports must analyze data thoroughly. In this study, an in-depth analysis was conducted on the data pertaining to the frequency of movements, the distinct types, models and age of aircraft that utilized VNO facilities during the calendar year of 2023.

Measurements

The sound measurements were done with Bruel&Kjaer 2270 Investigator sound analyzer. Data then was post-processed by BZ-5503 Measurement Partner Suite and measured data L_{eq} , L_{MAX} , different noise levels were compared. Graphs on the right shows the noise levels measured.

Conclusions

Investigation suggests that more than a half of air fleet at VNO is older than 11 years. Measurements at specific location provides evidence that noise limits are exceeded, especially by older aircraft models. As aircraft age increases, there is a tendency for noise emissions to escalate, potentially impacting surrounding communities. Implementing measures such as inventorying fleet by selecting oldest models replacing them with new ones and enforcing stricter aircraft noise standards could be beneficial for implementing sustainable approach.

Results

