

ACI Noise Rating Index and its applications

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Background

- **Noise from aircraft at various airports is a major environmental issue and has led to operational limitations and opposition to airport expansions or constructions**
- **ICAO has been addressing the issue of aircraft noise since 1960s and has developed aircraft noise certification standard.**
- **The latest ICAO Chapter 4 noise standard neither reflects the noise performance of the best available in current production, nor provides a reference for future aircraft performance.**
- **ACI GB directed it's Environment Standing Committee in April 2002 to draw up a tool for rating aircraft noise**
- **In October 2002, the ACI Aircraft Noise Rating Index was adopted by ACI's GB**

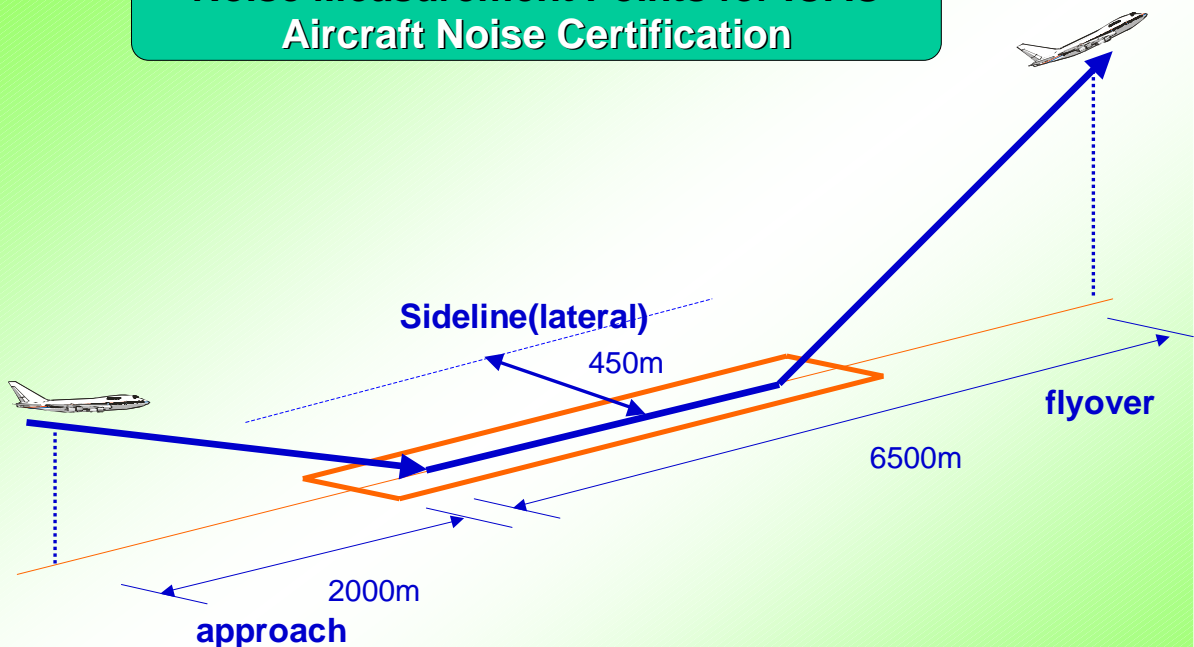


The objectives of Noise Rating Index

- Encourage global consistency in the implementation of effective airport noise management programs
- Enable airports to communicate effectively with communities and governments about noise issues
- Provide an effective tool that is compatible with the ICAO system of noise certification standards
- Provide a consistent reference point to encourage manufacturers to develop and market the possible quietest aircraft and encourage airline industry to upgrade their fleets as rapidly as possible



Noise Measurement Points for ICAO Aircraft Noise Certification



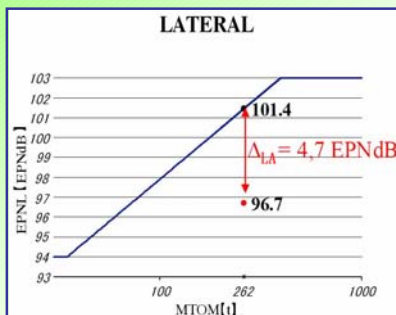
ACI Aircraft Noise Rating Index

- The Index places aircraft into six categories of noise performance, ranging from A to F
- The index applies to aircraft with noise certification data stated
- Aircraft must be required to meet both criteria, upper and lower

Criteria to be met concurrently	Categories					
	F	E	D	C	B	A
Cumulative EPNdB reduction from ICAO Chapter3 standard of at least :	Less than 0	0 or more	5 or more	10 or more	15 or more	20 or more
Individual EPNdB reduction from ICAO Chapter3 standard at each Noise measurement point of at least :	Not applicable	0	1 □	2 □	3	4 □



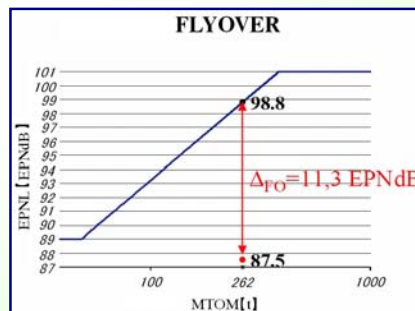
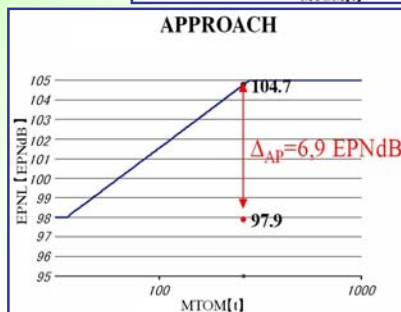
How to calculate the Index



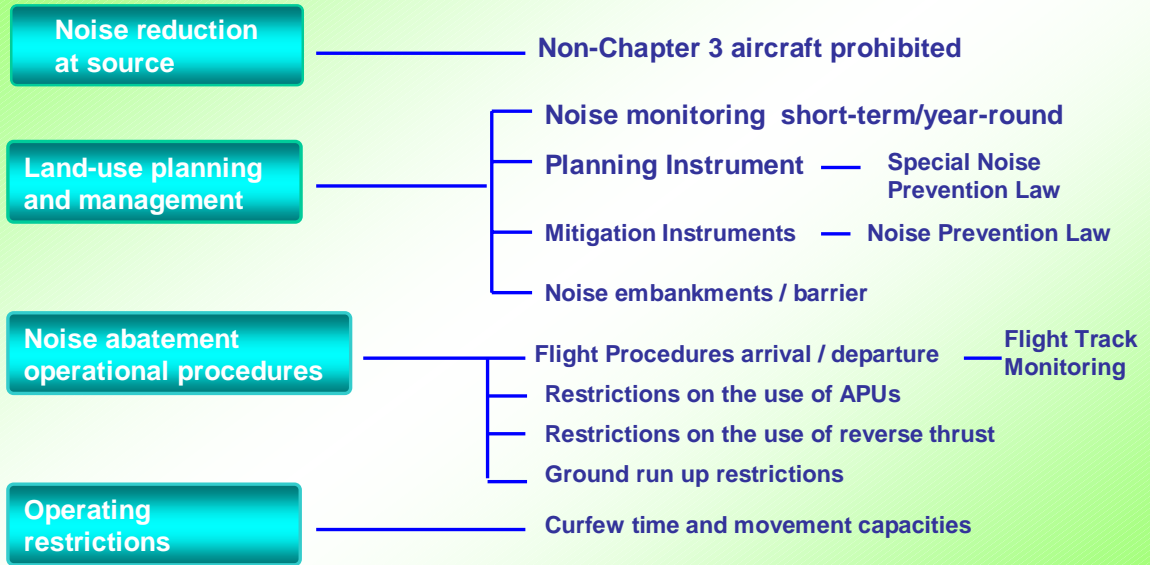
$$11.3 + 4.7 + 6.9 = 22.9 \text{ (cumulative)}$$



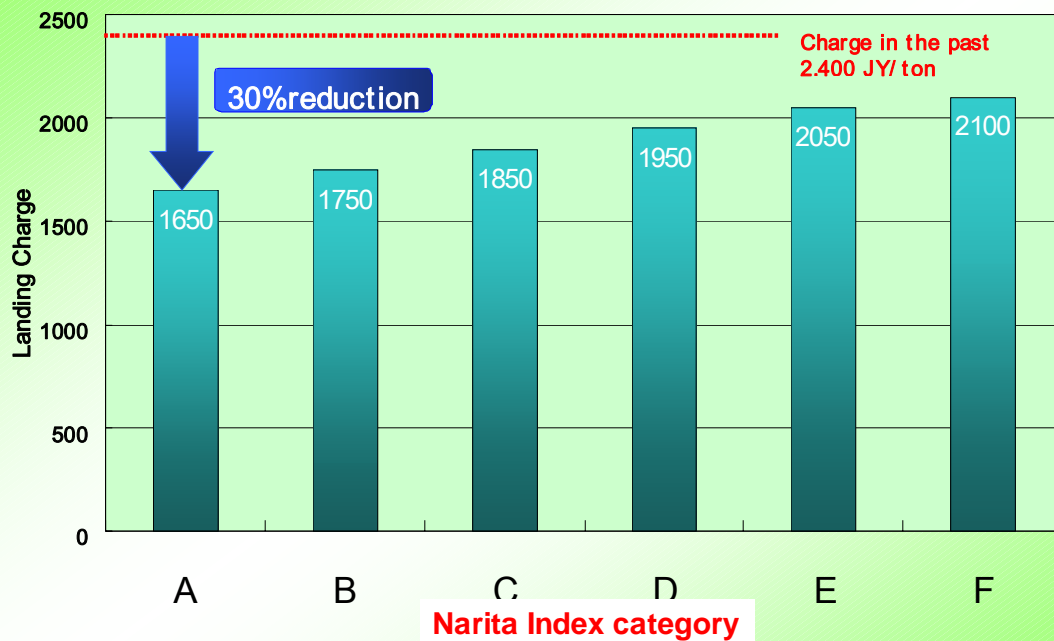
Class A



Aircraft noise countermeasures at Narita Int'l Airport

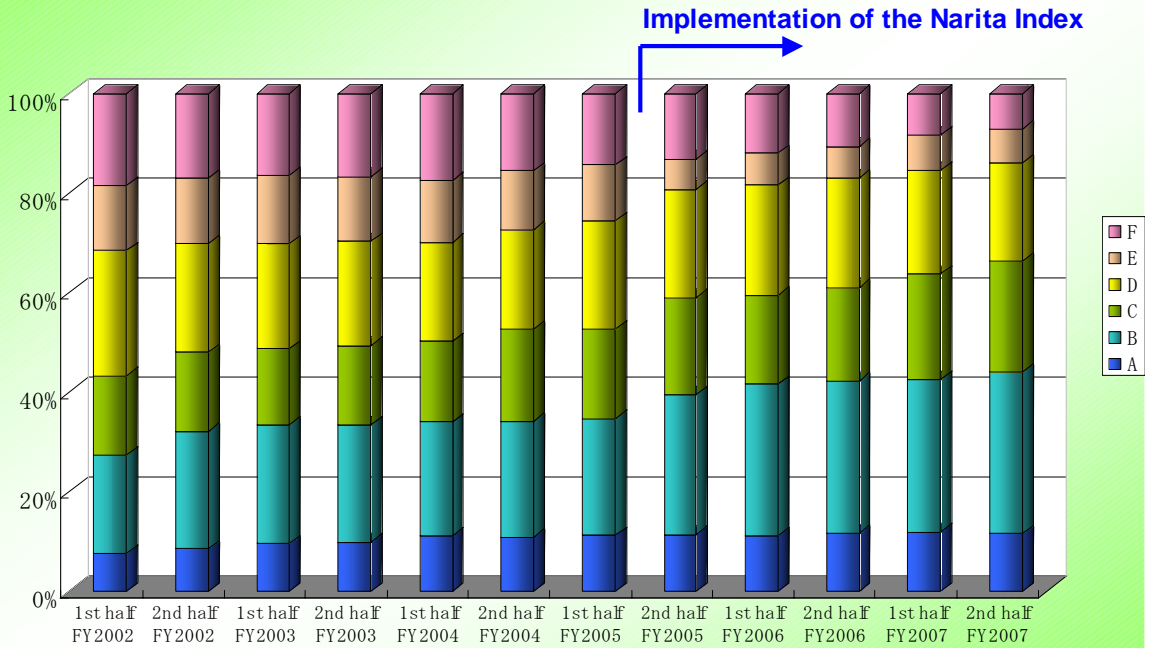


Breakdown of landing charges per Narita Index category

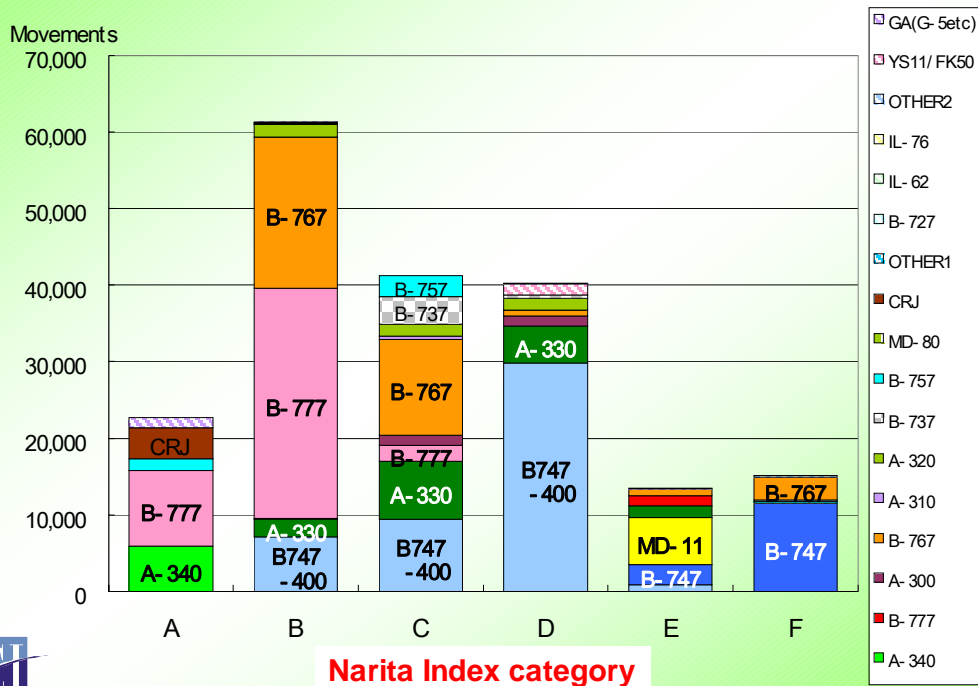


for int'l flights

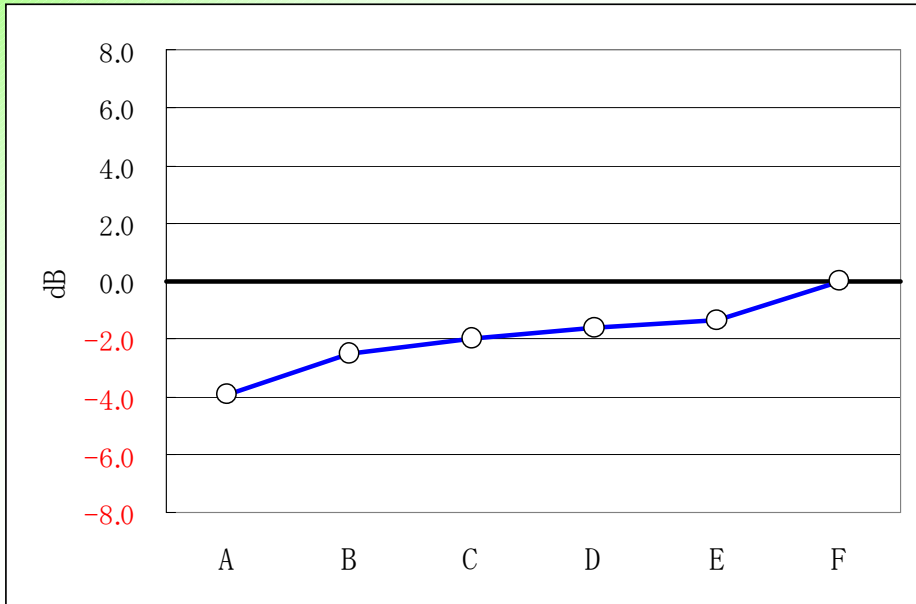
Change of the rate of aircraft movement per Narita Index category



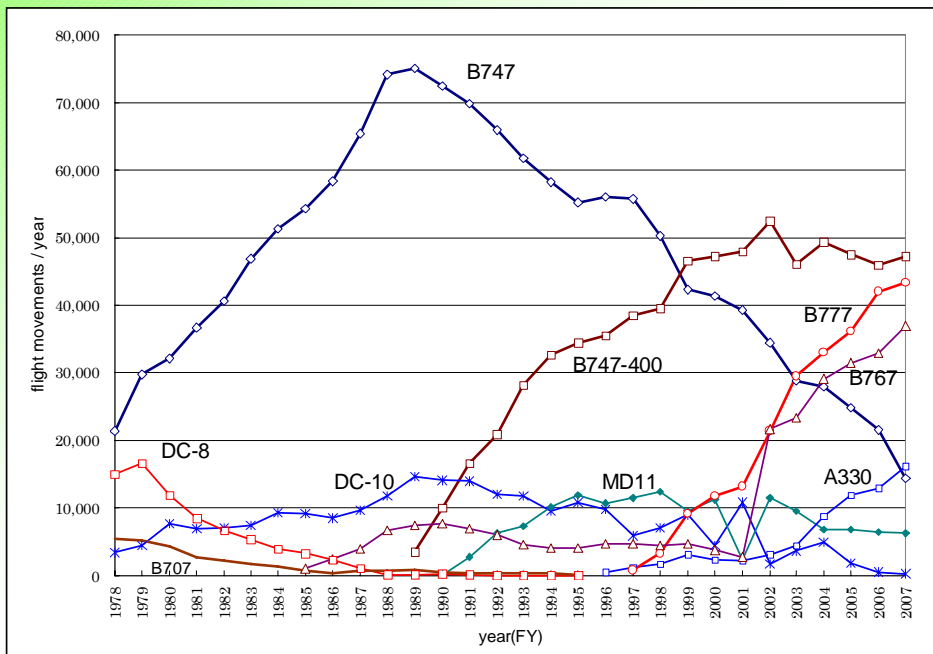
Aircraft movements per aircraft type for each Noise Index category



Noise level difference among categories re. Class F



Trend of aircraft movements per aircraft type at Narita



Conclusion

- The ACI Environment Standing Committee drew up the Noise Rating Index linked to ICAO Noise Certification Standard
- In order to promote the use of low-noise aircraft, Narita Int'l Airport introduced a new landing charges based on ACI Noise Rating Index from October 2005
- Though we cannot exactly determined the contribution of introducing new landing charges, ACI Noise Rating Index works well as an incentive to reduce noise at source
- As the lower Index Classes A through C can have lower fuel consumption and gas emission, the Index system leads to a reduction of environmental burden at the airport.

