

Primary Noise Abatement Procedures Implemented by ANA

Procedure		Description
Takeoff	Steepest climb procedure	Execute a steeper takeoff climb to a higher altitude than usual (to 3,000 feet), so as to keep noise contained within the airport as much as possible, while controlling noise by attaining high altitudes in residential areas.
Landing	Delayed flap-down approach	Delay flap-down and landing-gear-down operations to reduce air resistance to the airframe, so as to decrease the required engine thrust, thereby reducing noise.
	Low flap angle landing	Set smaller flap angle for use during final approach to reduce air resistance to the airframe, so as to decrease the required engine thrust, thereby reducing noise.
Landing and takeoff	Preferential runway	If one side of the runway does not have a residential area, aircraft will take off and land in the preferred direction, wind direction and velocity permitting.
	Preferential flight path	In the airport vicinity (at lower altitude), select flight paths that pass over rivers or that circumvent residential areas as much as possible.
	V-NAV approach continuous descent	During descent, maintain higher altitude until reaching the vicinity of the airport, then continuously descend to reduce change in engine thrust, thereby abating noise. This procedure can save fuel as well.
	FMS flight	Use FMS*2/LLZ-RNAV*3 in the airport vicinity and fly while avoiding residential areas and shortening flight path. In the case of late-night flights arriving at Haneda, avoid passing over Kisarazu (land area) and approach for landing via shortcut over the water.

*2 FMS: Flight Management System

Avionics that calculate optimal speed and flight path in accordance with flight conditions and automatically manages flight parameters such as engine setting and flight controls

*3 LLZ: Localizer

A system that indicates the horizontal deviation of landing aircraft from the runway centerline using electromagnetic waves