

Environmental Strategies

NAA recognizes the extreme importance of environmental strategies in terms of achieving full integration of the airport with the surrounding community. It has in place a number of key strategies including soundproofing of residential buildings and schools, relocation of residents in areas severely affected by noise, measures to eliminate interference to television reception, moves to prevent falling objects such as ice from aircraft, and steps taken to alleviate noise when aircraft engines are tested. NAA continuously monitors aircraft noise in the area around the airport and also monitors water and air quality.

WECPNL – Accurate Noise Measurement

While noise from automobiles and factories is measured in phones or decibels(dB(A)), the noise generated by aircraft is usually measured in WECPNL. This acronym stands for “weighted equivalent continuous perceived noise level,” and it is a unit that expresses comprehensive noise level by measuring its quality, volume, duration, frequency, time of occurrence and other sound characteristics.

Fundamental Blueprint for an Eco-Airport

In addition to the environmental strategies mentioned previously, NAA

released the Fundamental Blueprint for an Eco-Airport in May 1998 and is rigorously implementing a range of programs both inside and out side the airport based on this. The Blueprint focuses on airport development from a global perspective and revitalization of the local agricultural industry. Recognizing the possibility of the airport’s impact of the natural environment and agriculture in the region, its goal is the development of an airport which recycles its resources to attain the least possible energy consumption and impact on the environment.

Co-generation System

NAA installed a co-generation system in fiscal 2000 as part of its effort to conserve energy, reduce CO₂ emissions and protect the global environment. The system uses natural gas and



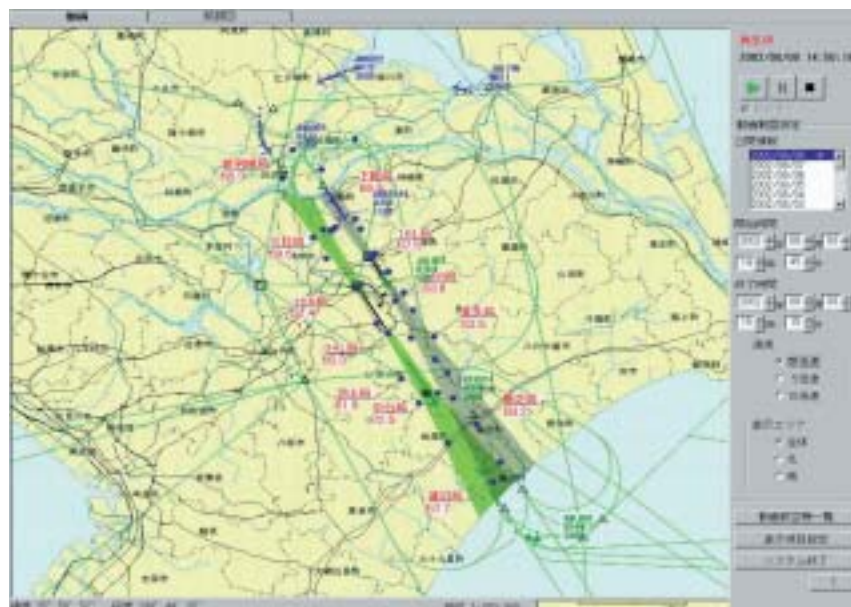
recycles the thermal energy from gas emissions for heating and cooling. Energy in the form of heat was discarded in the old system but is now used to reduce energy consumption and conserve resources. Power consumption in the airport has been reduced by around 20% and energy for heating and cooling has also been cut by about 30%.

Eco-Airport Corner (Museum of Aeronautical Sciences)

NAA has unveiled its Eco-Airport Corner in the Museum of Aeronautical Sciences in Shibayama. The purpose of this is to familiarize local residents and members of the public with an interest in aviation with the Fundamental Blueprint for an Eco-Airport which was released in May 1998. The corner features exhibits and panels with visual, audio and interactive presentations.

Thermal Storage System

As a result of research into ways of eliminating the use of materials that deplete the ozone layer, NAA decided to substitute the CFCs used as a cooling agent in its Central Heating and Cooling Plant with substitute CFCs that are not harmful to the ozone layer. However, because these substitute CFCs reduce the performance of the plant's freezer units, NAA is developing a new thermal storage system. The space-saving system is the first dormant heat system



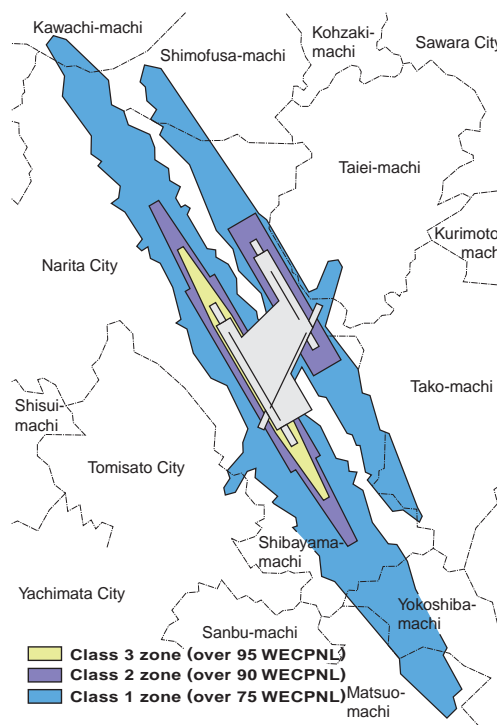
Flight Track Monitoring System

The system shows aircraft movement on a map of the area around the airport and can replay flight activity within the past month using radar data provided by the Civil Aviation Bureau.

in Japan. The system also contributes to environment and energy conservation, reduce the burden on the power supply system during peak hours and cut energy costs.

Design and construction of the system was completed and it began full-scale operation in July 2002

Note: The Thermal Storage System uses inexpensive off-peak power to drive freezer units. The cold water produced cools the thermal agent and, in daylight hours when the demand for cooling increases, the thermal agent cools the water again through a thermal conversion process.



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Environmental strategies as of March 2003		
Item	Completed	Cost
Subsidies for soundproofing of schools, etc. Soundproofing Replacement of air conditioners	115 projects 68 units	¥20.1 billion
Subsidies for construction of community facilities Construction Replacement of air conditioners	136 projects 81 units	¥3.1 billion
Subsidies for soundproofing of residential buildings Soundproofing Replacement of air conditioners	4,324 houses 5,376 units	¥22.6 billion
Resettlement compensation Houses relocated Land acquired	769 houses 661.2 ha	¥131.9 billion
Green belt development	86.6 ha	¥6.1 billion
Noise monitoring facilities	33 projects	¥8.2 billion
Programs to eliminate electrical interference		¥19.6 billion
Local community grants		¥65.1 billion
Total		¥276.7 billion

Noise impact zones				
Zone	Max. Distance from Runway	Area	Buildings	Policy
3	Runway A: 3,660m	293ha	147	Compensation for resettlement, used as green belt
2	Runway A: 5,615m Parallel Runway: 2,000m	1,135ha	362	Compensation for resettlement
1	Runway A North: 13,270m South: 13,070m Parallel North: 9,140m South: 8,870m	7,322ha	4,918	Soundproofing of residential buildings
Total		8,570ha	5,427	

Natural Gas Vehicles

In its role as the operator of Narita Airport, NAA believes that it must address the problem of air pollution. In February 1999, it announced low pollution vehicles plan. In March 2002, this plan was reviewed corresponding to the change of the social conditions. Under this plan, it will convert more than 20% of all general service vehicles to natural gas vehicles. By July 2003, it introduced 17 natural gas vehicles and installed refueling equipment in 2 locations. This was followed by the installation of a high-speed refueling station in March 2001.

Photovoltaic Power Generation System

NAA has installed the largest photovoltaic power generation system at any airport in Japan to effectively harness a clean source of energy. The system became operational in October 1999 and its 882 solar panels in 3 locations within the airport produce a maximum of 120 kilowatts of power-enough to supply 30 households.

Compost

NAA began composting organic refuse on a trial basis in March 1999 in an effort to recycle its waste and conserve its resources. A fermentation

catalyst is added to a mixture of organic waste and sawdust. After being heated and agitated for 3 hours inside a compost machine, the material is left to decompose over a 1-month period and then left for another 2 months to mature. The resulting compost is being used for airport greening projects and is also distributed at the local events, so we are having the understanding with regard to an Eco-Airport deepened.

Summary of Fundamental Blueprint for an Eco-Airport

Fundamental Blueprint for an Eco-Airport	1. Development of a resource recycling airport with a global perspective	Water Recycling	Use of gray water and rainwater, subsurface water absorption
		Energy and Air Quality	Co-generation systems, low-pollution vehicles, solar power generation, ground power units
		Natural Environment	Afforestation and other greening programs, stream revitalization
		Waste	Waste recycling, use of recycled resources Supply of grass clippings and compost, use of heat generated from incinerating refuse
		Broader Commitment	Utilization of the Eco-Airport Promotion Workgroup Report environmental strategies to airport operators worldwide
	2. Contribute to the revitalization of the local agricultural industry	Appropriate management of land vacated by resettlement, agriculture-oriented conservation methods New loans to promote the agricultural industry (Training venues for courses in agriculture, practice of recycling farming methods, learning and experience programs for urban dwellers)	

