

# Kansai International Airport

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# Overview

**Name:** Kansai International Airport

**Place:** Osaka Prefecture, Japan

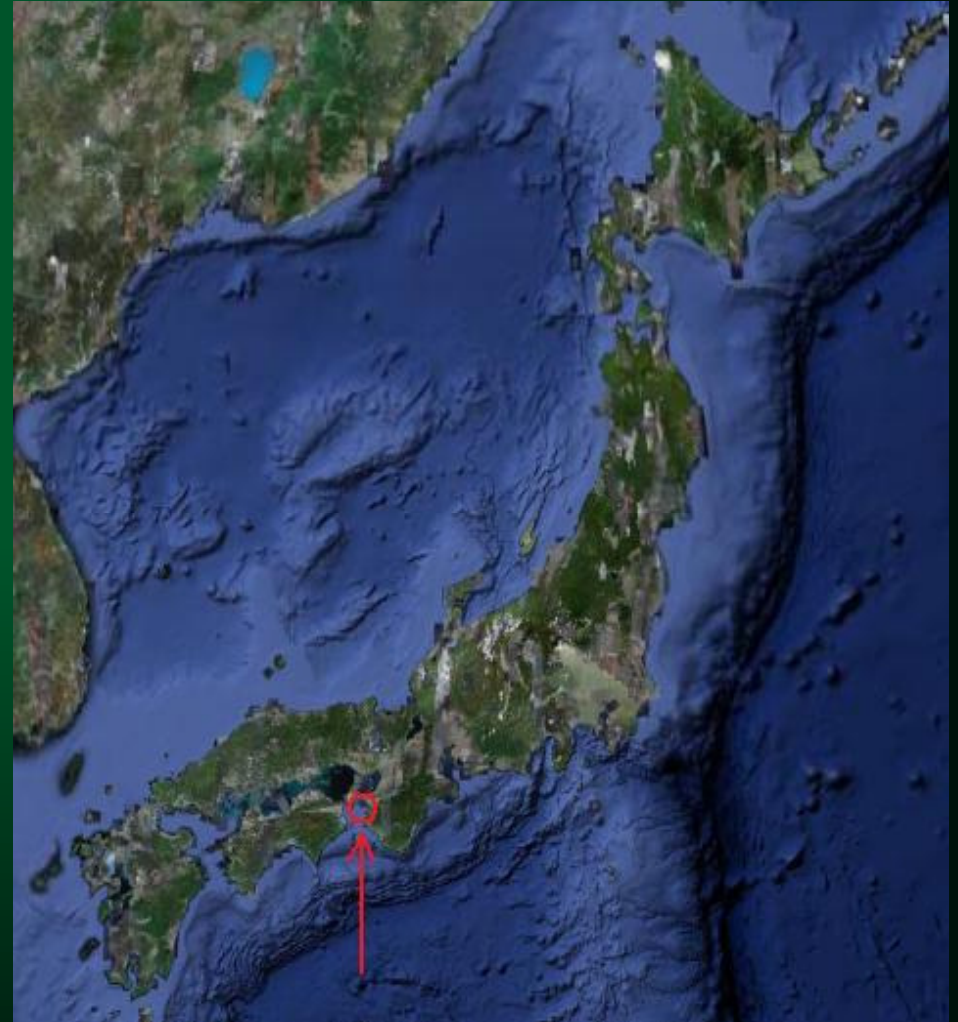
**Area:** 10.5 km<sup>2</sup>

**Total Cost:** \$20 billion

**Opened:** September 4, 1994

**Terminal:** 1 (four-story)

**Runways:** 2



# Magnitude and Statistics

## Statistics of 2007:

**Aircraft movement:**

128,943 flights

**Number of passengers:**

16,694,921 passengers

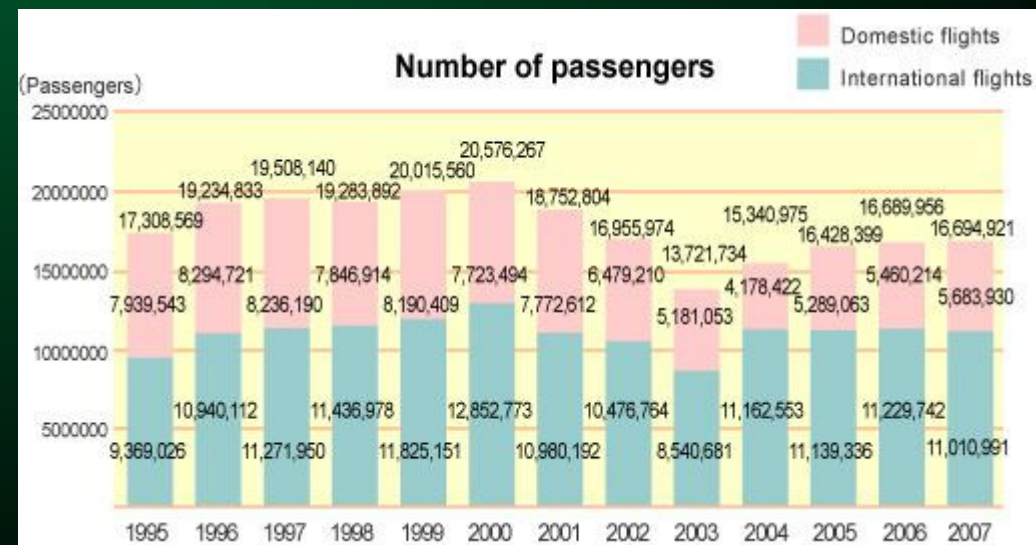
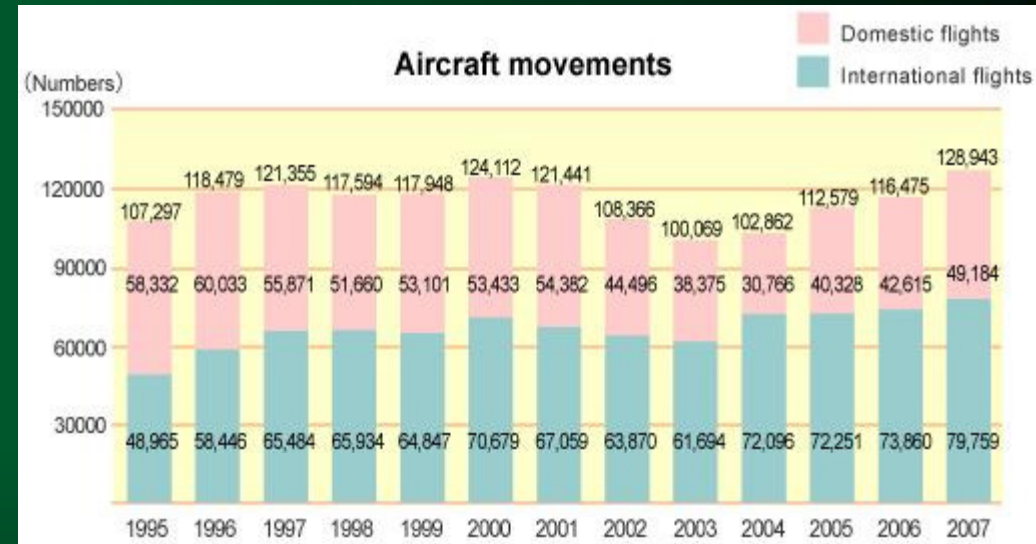
**Freight volume:**

846,522 tons

## Weekly flight data:

**Weekly international flights:** 814

**Weekly domestic flights:** 493



# Construction

## Man-made island:

- 4 km long and 2.5 km wide
- 21 million m<sup>3</sup> of landfill
- 10,000 workers
- 10 million work hours
- Over 3 years
- 80 ships



## Sky Gate Bridge:

- 3 km (~ 1.9 miles)
- \$1 billion.

# Technical & Engineering Issues

## Sinking much more than predicted:

→ Adjustable columns were designed to support the terminal building.

## Severe earthquakes and typhoons:

→ Using Sliding joints

- In 1995, the airport survived an earthquake 7.2 on the Richter scale.

Even the glass in the windows stayed intact.

- In 1998, it survived a 200 km/h (~120 miles/h) typhoon.

# Cost breakdown

- ✓ Total Cost: \$20 billion
  - Includes the land reclamation, 2 runways, terminal and facilities.
  - Additional costs came from the sinkage of the island.

# Kansai International Airport Co., Ltd. (KIAC)

- ▼ Formed jointly with investment capital from the national government, local governments and the private sector.
- ▼ Founded in Oct. 1984
- ▼ 6 subsidiaries specializing in individual fields
- ▼ Operates Kansai International Airport Land Development Co., Ltd.

# Subsidiaries to KIAC

- ▼ KIA Heating & Cooling Supply Co., Ltd.
- ▼ KIA Information & Telecommunications Network Co., Ltd.
- ▼ KIA Fueling Service Co., Ltd.
- ▼ KIA Facilities Engineering Co., Ltd.
- ▼ KIA Security Co., Ltd.
- ▼ Kansai Airport Agency Co., Ltd.

# Early Money Losses Everywhere

- ✦ Airport debt:
  - Losing **\$560** million in interest every year
- ✦ High landing fees chase away airlines:
  - Approx. **\$7500** for Boeing 747
- ✦ On-site concession operation costs:
  - Estimated **\$10** cost for a cup of coffee

# Airlines are the Main Money Makers

- ✦ Over 50 passenger airlines
- ✦ Over 10 cargo airlines
- ✦ Approximately 1300 total weekly flights

# Other Money Makers

- ▼ Railways
- ▼ Airport Shuttle/Bus Services
- ▼ Parking
- ▼ Ferry Service
- ▼ Hotel Nikko Kansai Airport

# Revenue/Expense Breakdown for 2008

<b>Consolidated Statements of Operation</b>	<b>2008 (Thousands of US Dollars)</b>
Operating Revenue	1,061,142
Operating Expenses	810,906
Operating Income	250,237
Other Income (Expenses)	(141,166)
Income before Income Tax and Minority Interest	109,071
Net Income	108,673

# Social Problems

- ✦ The second most expensive airport in the world
- ✦ Local fishermen were the only group to protest, but they were silenced by hefty compensation packages.



Satellite Image of Kansai International Airport

# Policy Challenges

## ▼ Noise Pollution

- Aircraft noise

## ▼ Traffic Amount Increase

- Total amount of traffic and amount of traffic produced by vehicles involved in construction

## ▼ Air Quality and Climate

- $\text{NO}_x$ , ( $\text{NO}$ ,  $\text{NO}_2$ ),  $\text{SO}_2$ ,  $\text{CO}$ ,  $\text{SPM}$ ,  $\text{O}_x$ ,  $\text{HC}$ , wind direction and wind speed

## ▼ Water / Sediment Quality

- Turbidity, pH level, etc.

## ▼ Marine life and land dwelling creatures

- Plankton, roe and undeveloped fish, bottom-dwellers, fish for fishing industry
- Flight and nesting of birds
- Migration of hawks, etc

# Conclusion

- ▼ Overview
- ▼ Magnitude and Statistics
- ▼ Construction
- ▼ Technical and Engineering Issues
- ▼ Social Problems
- ▼ Policy Challenges

# Awards

- ✦ Ranked **4th** overall in the Airport of the Year 2006 awards named by Skytrax
- ✦ Still made **top 10** list for Airport of the year by Skytrax for 2007 and 2008
- ✦ On April 19, 2001, the airport was one of **ten** structures given the "**Civil Engineering Monument of the Millennium**" award by the American Society of Civil Engineers



**THANK YOU!!**