

## JAL to Conduct Asia's First Environmentally Efficient ASPIRE Flight

**Tokyo, October 6, 2009:** Japan Airlines (JAL) will conduct Asia's first ASPIRE flight on October 10, 2009, as part of a program that seeks to establish industry-wide aviation standards and procedures that can reduce the environmental footprint of air travel.

ASPIRE - ASia and Pacific Initiative to Reduce Emissions, is a joint venture between the Federal Aviation Administration, Airservices Australia and Airways New Zealand, established in February 2008. It aspires to develop, implement and encourage the use of environmental-friendly flight operational procedures worldwide in order to reduce the burden of aviation on the environment. Three ASPIRE flights involving United Airlines, Qantas Airlines and Air New Zealand have been conducted over the transpacific routes in the last year. With the participation of the Japan Civil Aviation Bureau (JCAB) of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) in the ASPIRE programme, an ASPIRE flight will be performed for the first time ever in Asia.



The JAL Group will conduct this landmark ecological flight in Asia and has set subsidiary JALways' scheduled flight JO077 from Honolulu to Osaka (Kansai), using a Boeing 747-400, to be the JAL ASPIRE flight. Comparing with a regularly-operated flight of the same aircraft and route, the ASPIRE flight aims to reduce 9,421 pounds (5362 litres / 27 barrels) in fuel consumption and 13,140 kg in carbon dioxide emissions.

Measures conducted on the JAL ASPIRE Flight	Details	Targeted reduction in fuel consumption	Targeted reduction in CO2 emissions
<b>Before departure</b>			
More accurate estimations used for calculation of fuel for the flight.	The amount of fuel for loading will be calculated based on the weight of the total aircraft nearer to finalization of the actual load. Conventionally, the amount of fuel to be loaded is calculated based on a broader estimate. As such, more fuel is loaded than needed, and the weight of the extra fuel adds to the fuel consumption and carbon emissions.	200 pounds (114 litres)	279kg
Lighter-weight cargo containers will be used.	The 12 aluminium alloy cargo containers normally loaded onboard,	211 pounds (120 litres)	295kg



	will be replaced with cargo containers made of light-weight, glass-fibre, “Twintex” material, each weighing 25kg less.		
Reduce the weight of items loaded onboard.	<p>Economy class glass wine bottles were switched to plastic PET bottles from August 6, 2009. As a result, weight was reduced by 123.25g per bottle of wine. (Load per flight: 350 bottles)</p> <p>By reducing the number of pages in the in-flight magazine SKYWARD, each copy weighs 60g less. (Load per flight: 447 copies).</p> <p>Metal spoons and forks were made thinner and the weight was reduced by 2g per piece. Light weight porcelain is also used for premium dinnerware.</p>	53 pounds (30 litres)	74kg
Reduce the weight of cabin attendants’ hand-carry baggage.	Cabin attendants are advised to reduce the weight of their baggage, with a target reduction of 2.5kg each. 17 cabin attendants serve on this flight.	30 pounds (17 litres)	42kg
Maximize the use of ground electricity instead of the aircraft’s APU (auxiliary power unit), which requires fuel consumption.	<p>While parked on the ground, APU will be switched off and not used for air conditioning. Instead, ground electricity power will be used and this can reduce fuel consumption.</p> <p>Window shades of parked aircraft are closed and ventilation fans stopped, etc. to prevent the cabin interior from heating up, thereby reducing the amount of air conditioning needed prior to boarding and flight.</p>	2058 pounds (1,171 litres)	2866kg



Engine washing	By regularly washing off dust and dirt in the air that have attached to the compressor in the engines, compression efficiency can be improved and fuel consumption reduced by about 1% during cruising.	825 pounds (470 litres)	1151kg
<b>Take-off / Cruising</b>			
Change the runway for take-off	The normal take off runway 08R/26L will be changed to runway 08L/26R to shorten taxiing distance from departure spot.	700 pounds (398 litres)	977 kg
Shorten distance taken to reach cruising altitude after take off	Ascend to cruising altitude in the shortest distance, without using normal departure route after take off.	1000 pounds (569 litres)	1395kg
Fly at optimum cruising altitude	Fly at optimum cruising altitude to gain maximum fuel efficiency	856 pounds (487 litres)	1195kg
Utilize User Preferred Route	An operational method in which the airline voluntarily sets what is judged to be a safe, most efficient route, taking into account the latest weather conditions, etc. instead of using the predetermined route	480 pounds (273 litres)	670 kg
Utilize DARPS (Dynamic Airborne Reroute)	An operational method of recalculating the optimal route during cruising, based on the latest wind forecast, and using the most efficient route	800 pounds (455 litres)	1116kg
<b>Approach / landing / arrival</b>			
Utilize delayed flap approach	By adjusting the timing of operating the flaps during arrival, air resistance can be reduced when making an approach for landing.	195 pounds (111 litres)	272 kg
Utilize delayed gear approach	By adjusting the timing of lowering the operating gears at landing, air resistance can be reduced when making an approach for landing.	196 pounds (112 litres)	274 kg



Use of shallow flap	By putting flaps at a shallow angle at arrival, landing can be done with reduced air resistance	210 pounds (120 litres)	293 kg
Change runway for arrival	Normal arrival runway will be changed from 06L/24R to runway 06R/24L to shorten taxiing distance as much as possible to the arrival spot	384 pounds (219 litres)	536 kg
Control use of thrust reverser	By reducing the use of thrust reverser during landing, fuel consumption can be reduced.	115 pounds (65 litres)	160 kg
Use 2 engines for taxiing (instead of 4)	After landing, switch off 2 out of 4 engines, and taxi to arrival spot.	208 pounds (118 litres)	290 kg
<b>Total savings</b>		9421 pounds (5,362 litres)	13,140kg

*\*NOTE\* Events will be conducted at the departure gate in Honolulu International Airport on October 10, 2009, and upon arrival the following day in Osaka's Kansai International Airport. For more details, media are welcomed to contact JAL press office at the number and email address below.*

### About Japan Airlines

JAL won the 2009, Condé Nast Traveler, World Saver's Award, emerging top in the airline category, for its contributions to society and the environment. For more information on the wide variety of environmental and CSR activities conducted by JAL, please visit the following website: <http://www.jal.com/en/environment/> and <http://www.jal.com/en/society/>.

A member of the oneworld global alliance since April 2007, the JAL Group is Asia's largest airline group by operating revenue and serves some 220 airports in 35 countries and territories, including 60 airports in Japan. Its international network covers over 250 passenger routes and 28 cargo routes, while its domestic operations include flights on 143 routes.

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