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AMSTERDAM, March 8, 2013 /PRNewswire/ -- Boeing [NYSE: BA] and KLM Royal Dutch Airlines have begun a series of commercial flights that will demonstrate how several advanced technologies, fuels and concepts can significantly improve operational efficiency, save fuel and reduce carbon and noise emissions. The technology demonstration encompasses all aspects of an aircraft's flight – preflight, takeoff, cruise, descent and post-landing.

The first of the flights, with a KLM Boeing 777-200 aircraft flying round trip from Amsterdam Airport Schiphol to John F. Kennedy International Airport in New York, is scheduled today. A total of 26 flights are planned for a program called "Optimal Flight" that will continue through 2013.

"The art of the possible comes to life with Optimal Flight: It combines all of Boeing's current flight efficiency projects in a single program to demonstrate the most efficient, environmentally progressive flight possible," said Mike Caflisch, director of airspace programs for Boeing's Digital Aviation Customer Solutions. "This demonstration program will help us determine where next to focus our research and development to deliver improvements to air traffic management and airline services for our customers."

Each flight is being powered in part by sustainable aviation biofuel sourced from used cooking oil. Boeing is at the epicenter of the industry's efforts to develop and commercialize renewable fuel sources that don't compete with food, water or land resources.

The flights also feature new services that provide various advisories directly into the aircraft's flight management computer (FMC) and mobile device in the flight deck.

Developed by Boeing Research & Technology, the flight services highlight applications that increase real-time situational awareness for pilots using advanced digital aviation and air traffic management concepts. They include:

- Automation to integrate the dispatch and modified versions of the flight plan and performance data into the FMC. This saves work for the flight crew, allows for real-time adjustments and reduces errors by eliminating the need to make repeated FMC entries.
- Procedures and software applications that provide the air crew with recommendations to optimize the aircraft's speed variance while providing real-time weather advisories in flight to save fuel and enable more accurate waypoint arrival predictions.

If the Optimal Flight Program is successful, Boeing and KLM will establish new operational procedures and recommendations for follow-on development programs with the partners, including NLR, TU Delft (Delft University of Technology), John F. Kennedy International Airport, Gander, Shanwick, NATS Domestic and Schiphol Group.

There is also focused research and development through a [joint agreement](#) between Boeing, KLM, Amsterdam Airport Schiphol and Air Traffic Control in the Netherlands. This agreement is an extension of an agreement first signed in 2002 to develop solutions for the sustained growth of aviation in the Netherlands.

"Boeing is committed to improving the efficiency of flight by working with progressive airlines such as KLM to accelerate smart technologies and make them available for regular commercial use," said Julie Felgar, managing director of environment and aviation policy for Boeing Commercial Airplanes. "Through our support and services organization and commitment to relentless research, we can help ensure their airplanes are safe, reliable and on time."

"This is yet another great example of a value-added partnership between Boeing and the Netherlands, a country with an outstanding aerospace and technology industry," said Brian Moran, vice president, Boeing Northern Europe. "KLM is one of the most progressive airlines in the industry and a great partner in our ongoing commitment to finding ways to realize savings in fuel and reductions in emissions and noise."

For more information about Boeing's environment technologies, please visit www.boeing.com

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