



FUEL SMART

Through its employee-driven Fuel Smart program, American Airlines gains potential savings of more than US\$200 million in fuel expenses and reduces its CO₂ emissions by nearly 2 billion pounds annually.

■ By Stephani Hawkins | *Ascend* Editor



American Airlines' mechanics take every cost-saving measure to ensure aircraft are flown with utmost efficiency. Regularly cleaning aircraft engines, which improves fuel burn, saves the carrier 3.9 million gallons of fuel a year.

How many airline employees does it take to save 96 million gallons of fuel a year? All of them, as demonstrated by Dallas/Fort Worth, Texas-based American Airlines. From reservations and cargo representatives to customer service and top management, every employee has the ability to help put a sizeable dent in fuel costs and, in effect, slash carbon dioxide emissions significantly.

Like most airlines around the world, American has taken common steps in recent years to preserve fuel, such as using a single engine when taxiing and asking passengers to help keep the cabins cool by lowering the window shades. But in 2005, the carrier took it a step further when it launched Fuel Smart, a fuel-conservation program that encourages employees to get involved by submitting conservation ideas to the Fuel Smart team.

"Fuel Smart grew out of the first run-up in oil prices in 2004 and 2005," said American Chairman and Chief Executive Officer Gerard Arpey. "When oil was above US\$140 per barrel, we needed Fuel Smart more than ever, but even if oil fell to, say, US\$50 a barrel, we'd still want to develop fuel-conservation awareness among every airline employee."

Last year, more than 500 suggestions were submitted by employees, contributing to a US\$204 million savings for the airline, which paid an average US\$2.12 a gallon for fuel.

Since the start of the program, several fuel-saving initiatives have been implemented:

- Engine wash program: Periodically cleaning aircraft engines promotes improved fuel consumption, lowers emissions into

the environment and improves the life of the engine. Projected savings — 3.9 million gallons of fuel annually.

- Replacing catering carts: American Airlines will retire about 19,000 catering carts and purchase newer models that are made with lighter materials, reducing average aircraft weight by 124 pounds. Projected savings — almost 1.9 million gallons of fuel annually.
- Boeing 737 and 757 winglet installation: The airline added winglets to its Boeing 737s and will do the same on its Boeing 757 fleet. Projected savings — 25 million gallons of fuel annually. American Airlines is also the launch customer for installing winglets on its Boeing 767-300 fleet, which will provide 17 million gallons in annual fuel savings.
- Valve removal on MD-80 fleet: The carrier has removed a valve that is no longer necessary on MD-80 aircraft. Projected savings — about 70,000 gallons of fuel a year, or about US\$151,000 annually.
- Reduce oil leak check time: The procedure for an MD-80 engine oil leak check took longer than necessary, so the carrier reduced the amount of time the engine runs during the check. Projected savings — between US\$50,000 and US\$100,000 a year, depending on fuel prices.
- Removing unnecessary cabin items: The carrier has removed all unnecessary in-flight items, such as a serving tray that was no longer being used. Projected savings — 20 gallons of fuel each year for



By adding winglets to certain aircraft, such as the Boeing 737 and Boeing 757, as part of its Fuel Smart program, American Airlines stands to save 25 million gallons of fuel annually.

every pound of weight removed from an aircraft.

- **MD-80 tailcone manufacturing:** The carrier's maintenance base in Tulsa, Oklahoma, is manufacturing and installing low-drag tailcones on its MD-80 fleet. Producing low-drag tailcones in house, American Airlines achieves a savings of US\$205,000 on each tailcone. Projected savings — 1.7 million gallons of fuel annually.

The tailcones cost US\$240,000, and American can produce them for about US\$35,000 each.

"The economics was to the point that it just made sense to build them," said Richard Lyon, supervisor for American Airlines' Composite Repair Center.

In addition, American removed mid-galley ovens on its Boeing 767-300 aircraft, reducing the weight of the planes by 235 pounds. It's using high-speed tractors at Dallas/Fort Worth International Airport and Los Angeles International Airport to tow aircraft from gates to hangars, a potential savings of 9 million gallons of fuel a year. It also received approval from the U.S. Federal Aviation Administration to reduce the fuel reserve carried on trans-Atlantic flights from 10 percent to 5 percent, which will save an estimated US\$10.6 million annually.

Pinching pennies and squeezing every bit of costs out of its system is nothing new for American Airlines. In the 1980s, former Chairman and Chief Executive Officer Robert Crandall saved the airline US\$40,000 a year with his idea to remove a single olive from every passengers' dinner salad.

"The point wasn't the olive," Crandall said. "The point was nurturing a cost consciousness among airline managers. Also, it was a forerunner to the more contemporary ideas about value engineering — understanding the relative importance customers assign to elements of service and comparing them to the cost of providing those elements."

Something that small and unnoticeable to passengers has saved millions of dollars for the airline. And Crandall's legend lives on. Since then, American Airlines has sought to achieve savings that are transparent to its passengers, such as an initiative implemented by the carrier's mechanics, who were distraught every time they had to throw away a dull drill bit and replace it with a new US\$200 bit. Instead, they put their heads together and designed "Thumping Ralph," a drill-bit sharpener made from a vacuum cleaner belt and a motor from a science project. Thumping Ralph saves the airline as much as US\$300,000 a year.

The creation of Thumping Ralph was a direct result of requests to employees from



American Airlines' flight attendants contribute to the Fuel Smart program in several ways, including avoiding storing unnecessary catering items on flights and beginning safety demonstrations on time to prevent departure delays.

American's management team to bring their cost-savings ideas to the forefront. The carrier's executives clearly understood that nobody knows its employees' jobs better than those performing them day in and day out, so they approached the airline's entire workforce and challenged them to save in every way possible.

"Communication lines were suddenly open," Justin Fuller, an American engineer in Tulsa, Oklahoma, told *The Christian Science Monitor*, an international daily newspaper, in 2005. "Before, people had ideas, but they didn't know where to take them. They also thought it wouldn't make any difference if they did. Now, the groundwork has been laid, so people know where to take their ideas and how to get them implemented."

The Fuel Smart program was established in the same vein. It opens an avenue for employees to really get involved and help their airline fight the uncontrollable battle of rising oil prices. And it's paid off.

Since its inception, employees from all areas within American Airlines have come out of the woodwork, leaving no

stone unturned, to generate countless fuel-saving initiatives.

The carrier has identified more than 25 ways its employee groups can help save fuel across nine business areas, including:

- **Customer service** — Customer service representatives can alert load planners when passenger counts (including stand-by travelers) change by more than seven passengers, consistently charge for overweight baggage and enter child edits during the check-in process.
- **Ramp service** — Ramp employees can avoid making an aircraft stop and wait to be wanded in after arrival, promptly hook up electrical and ground air on arrival, and avoid leaving vehicles or ground equipment idling when not in use.
- **Maintenance** — Aircraft mechanics can use ground power to reduce auxiliary power unit usage, tow rather than taxi aircraft when conditions permit, and reduce aircraft weight by removing unnecessary items or replacing items with lighter-weight alternatives.
- **Cargo** — Cargo personnel can use lighter-weight unit load devices; cancel reservations when it's determined that reserved



During 2004/2005 when oil prices really began to spike, American Airlines implemented Fuel Smart, a fuel conservation employee-driven program, which saves the carrier 96 million gallons of fuel a year.

cargo will not arrive; and avoid loading skids that are not attached to the shipment into containers, onto pallets or onto narrow-body aircraft.

- Flight — Cockpit crew can conserve fuel while on the ground by limiting APU usage, complete time engine start at the end of pushback, and single-engine taxi when safe and operationally possible;

adjust the cost index after departure if the estimated time of arrival differs from the scheduled arrival; update flight plans with new wind, payload and departure information; and follow cruise trim procedures.

- Flight service — Flight attendants can ask customers to close window shades and open air vents on warm days to keep



To decrease fuel consumption, ramp employees avoid making planes wait to be wanded in as well as promptly hook up electrical and ground air upon arrival. They also shut down any ground equipment while not in use.

the plane cooler for the next departure, avoid storing extra soda cans or catering supplies in extra spaces on the aircraft, indicate any over-provisioning on catering papers and begin safety demonstrations promptly to avoid departure delays.

- Reservations — Reservations agents can inform customers of baggage weight limits so they can pack accordingly or will be prepared to pay additional charges for overweight baggage.
- Management — Managers can seek ways to save electricity such as turning off lights after meetings and shutting down computers and monitors during non-business hours, avoid unnecessary business travel, and lead by example and reinforce Fuel Smart suggestions.
- All employees — The entire employee workforce can flight list as soon as possible when booking non-rev travel and cancel any non-rev flight listings when flight plans change.

“One of the reasons Fuel Smart has been so effective is that it has not been top-down, but has very much been a grassroots effort, with everyone — pilots, ramp workers, mechanics, dispatchers, planners and many other work groups — taking responsibility for saving energy,” said Arpey. “And it’s not just been about the ‘big hits’; even small changes in procedures or old habits can yield enormous savings because of the huge scale of our operation.”

The Fuel Smart program, as the old adage goes, kills two birds with one stone. With the current pressures on airlines to become more environmentally friendly, the program, in addition to saving millions of dollars for American Airlines, has helped reduce its carbon dioxide emissions footprint by 1.9 billion pounds per year. And that figure will only grow as employees continue finding ways to conserve fuel.

Considering that a one-cent increase in a gallon of fuel costs American Airlines an additional US\$33 million a year, Fuel Smart has become critical to the airline’s future success.

“Focused cost-reduction programs like Fuel Smart have become an essential practice at incumbent airlines like American,” Crandall said. “They need all the help they can get.”

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