



OxygenToGo
www.OxygenToGo.com
(877) 736-8691

Airline Fuel Savings: POCs vs. Traditional Tanks

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Ted Ladd

OxygenToGo

tedladd@oxygenwego.com

Abstract

Passengers using POCs on short haul flights carry 42 lbs. less in equipment weight on a round trip flight than those using traditional oxygen tanks, which is a 70 percent reduction in weigh. Passengers using POCs on long-haul flights carry 110 lbs. less in equipment for a weight reduction of almost 85 percent.

Methodology

OxygenToGo first calculated the weight of traditional oxygen equipment and contrasted it with the weight of a POC, its accessories, carrying case and power cords to determine the difference in per passenger weight for both short haul flights with four hours of flight time and long haul flights with nine hours of flight time. A typical oxygen user needs about 2.5 liters per minute of oxygen and each oxygen tank weighs approximately 10 lbs. In addition, most airlines will place empty oxygen tanks into the cargo hold for delivery back to their point of origin, doubling the weight for a roundtrip flight.

For short-haul flights, a typical oxygen user would require three oxygen tanks for a total of 30 lbs. Figuring in 30 lbs. for returning the empty tanks, each oxygen-dependant passenger will require the airlines to transport an extra 60 lbs. of oxygen equipment for each leg of their trip. On long haul flights, the same oxygen user will require six oxygen tanks plus the associated regulator for a total of 65 lbs.

Adding in the “dead head” return of 65 lbs. for the empty tanks results in 130 lbs. of additional weight per passenger.

In contrast, a portable oxygen concentrator and its accessories, carrying case, and power cords weigh only 15 lbs. For short-haul flights, a passenger would carry three batteries, each weighing one pound, for a total of 18 lbs. of oxygen equipment. For long-haul flights, passengers would carry five batteries for a total of 20 lbs. The batteries provide enough power for 150% of estimated flight time (terminal to terminal) to provide buffers for delays. In addition, because a POC stays with the passenger as carry-on luggage, the airline does not have any “dead head” obligations.

Conclusion

Using market and in-house data, OxygenToGo concluded that using portable oxygen concentrators (POCs) instead of traditional oxygen tanks reduce the weight of oxygen equipment by at least 70 percent on short-haul flights and almost 85 percent on long-haul flights. With the high price of aviation fuel, these savings in weight correspond directly to a cost savings.

In the near future, the demand for oxygen during travel is expected to rise sharply as physicians prescribe oxygen for both a broader range of medical ailments and the Baby Boomers who are preparing to retire and travel. These factors will dramatically increase the number of both rented and owner-provided POCs onboard aircraft.

Besides carrying less weight onboard, the cost for passengers who obtain a POC from OxygenToGo will be much less than if they opted for traditional oxygen tanks. OxygenToGo will also provide pre-qualification, technical support and medical information to passengers who bring their own POCs onboard.