



PORTLAND MARKET REPORT

A “STANDARD” 747 IN
MID-FLIGHT WILL BURN
APPROXIMATELY 4 LITRES
OF FUEL EVERY SECOND

August update



Flying away for a holiday this year? How much do you know about the fuel that is going to propel you through the skies?

If you're not going on holiday to a wet island off the west coast of Scotland for the 44th consecutive year of your life, then you might well be boarding a plane and flying off to somewhere hot and sunny (bully for you!). But how much do you know about the fuel that is going to propel you through the skies? Knowing a bit about jet fuel is not going to get you to your destination any quicker and nor is it going to get you through security without having your toe-clippers confiscated. But nonetheless, a few nuggets of knowledge may help pass the time at the airport or on the plane itself. So here goes.

Jet fuel is most commonly referred to as Jet A1, but its technical name is actually Avtur which stands for Aviation Turbine Fuel. Avtur is designed for use in turbo-jet and turbo-prop aircraft, which basically accounts for all modern planes of any real size. This grade of fuel should not be mixed up with Avgas (Aviation Gasoline) which is a specialist leaded petrol that goes into single-prop planes and older helicopters (new helicopters tend to take Avtur). But what Avtur can legitimately be mixed up with is bog standard kerosene (or paraffin if you prefer yet another name), because that is what it is and in the UK at least, this is the grade of fuel that is also used for heating oil in boilers and home-range cooking stoves! Who would have thought that a gas and jet engines have so much in common...?

If you consider the burning qualities of the three main combustion fuel grades (diesel, kerosene and gasoline), you can understand why kerosene is used for aeroplanes. Diesel has the highest boiling point of the three grades but is also the least flammable. So whilst diesel would easily give off enough energy for propulsion in the air, its lack of flammability would not generate enough initial power to get the plane off the ground (unless you had a 5 mile runway of course!). Gasoline (petrol) on the other hand is highly flammable and easily provides the required acceleratory power for take-off, but its energy pay back is poor and fuel consumption too rapid, meaning a plane would have to carry a disproportionate amount of fuel for even the shortest of journeys. So we are left with kerosene; more flammable than diesel (giving it the explosive burning qualities required for take-off), but at the same time more energy efficient than gasoline, which means that less fuel needs to be carried.

Even if kerosene is relatively fuel efficient though, an aeroplane is still a (very) thirsty beast. A “standard” 747 in mid-flight will burn approximately 4 litres of fuel every second, which based on a cruising speed of 565 mph, means consumption of 25 litres per mile (giving a not entirely convincing fuel economy range of 0.18 miles per gallon!). No wonder then that a 747 has the capacity to carry a staggering 220,000 litres and this still only

gives it a distance range of circa 8,500 miles – not enough to get to Australia from London non-stop and in the meantime, adding an incredible 175 tonnes to the plane's payload.

With all of this fuel consumption, it is no surprise that fuelling activities at the world's major airports are of breath-taking proportions. Total consumption of jet fuel in the UK is an impressive 15bn litres per annum, but an incredible 55% of this volume goes through Heathrow – that's over 20m litres per day and proving for the moment at least, that there is only one hub airport in Great Britain. All of Heathrow's jet fuel comes in by pipeline – either direct from refineries (Immingham, Fawley and Stanlow can all pump product directly into Heathrow's fuel farm) or via import pipelines from the Thames estuary (over 60% of UK jet fuel is now imported). Once at Heathrow, the Avtur is stored in the airport tank-farm (massive white storage tanks – easy to spot but still worth a surprising 25 points in your airport i-spy book) before being further distributed via another 80 miles of pipelines. This incredible underground “hydrant” system runs the length and breadth of the airport and has multiple fuelling points, allowing the airport's mobile bowzers to connect up and fuel planes across the whole Heathrow complex.

And that's where the supply-chain ends and your holiday starts. Who could have imagined the immense industry that lies behind the chirpy chappie in overalls and earmuffs on the tarmac – trying to catch the eye of the hostess, whilst filling your plane up – ready to jet you off to sunnier climes... Happy holidays!

For more pricing
information, see
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Portland Fuel Price Protection
www.portland-fuel-price-protection.com