

How green is Skytyping?

What is the Skytyping smoke made from and how is it delivered?

It's not actually smoke that creates the letters and symbols that are typed in the sky. It's atomised mineral oil. This mineral oil, which is non-toxic, organic and intrinsically biodegradable, is the same type used by the food industry to lubricate machinery used in food preparation.

We have smoke oil tanks fitted in the aircraft and the oil is delivered via a computer-controlled pump to our fuel exhaust system. The exhaust temperature (roughly 200°C) is hot enough to atomise the oil upon contact and the result is a pulse of 'smoke'.

OK, so the smoke oil is 'green', but what about the aircraft fuel?

There's no getting away from it – we burn fossil fuel to power the radial engines on our aircraft, just as a car burns petrol or diesel to power its motors. The type of fuel we use is called AVGAS, which is essentially a higher-octane grade of MOGAS (petrol).

Some facts about aviation fuel and its utilisation:

- Our aircraft are defined as General Aviation aircraft. General Aviation (GA) aircraft are defined as all types of aircraft (fixed-wing aeroplanes, helicopters, drones, microlights, business jets, etc.) except airliners and the military and account for roughly 90% of the UK's airborne fleet. According to the Civil Aviation Authority there are roughly 21,000 GA aircraft in the UK.
- The subset of GA that we fall into is piston-engine AVGAS aircraft, which makes up the vast majority of GA aircraft. Business jets, meanwhile, use Jet A1 fuel (kerosene), as do some other types of fixed-wing aircraft and some helicopters which are fitted with turbine engines.
- According to Hansard (the House of Commons archive) the amount of fuel that the piston-engine AVGAS fleet burns in one year is roughly equivalent to just 15 minutes of London rush-hour traffic.
- The UK Government's Department for Business, Energy, Industry Strategy (BEIS) publishes annual fuel consumption figures. According to the Department, the UK burns 37 million tonnes of road fuel each year and only 17,000 tonnes of AVGAS. In other words, one year's road traffic fuel consumption is equivalent to 2,176 years for the UK's AVGAS-powered fleet.

How much AVGAS and smoke oil do we use on a Skytyping sortie?

On a Skytyping sortie, including the flight time to and from base, our five aircraft use approximately 250ltrs of AVGAS and 100ltrs of smoke oil, which equates to around 575kgs of CO².

575kgs of CO² may sound like an awful lot, but according to online resource carbonindependent.org it's the equivalent of flying a Boeing 737-400 with 164 passengers onboard just 300 metres (or barely getting a long-haul Boeing 747 out of its hangar).

How do we offset our carbon footprint?

- We don't throw away our used engine oil, instead we use it to heat our headquarters, saving 500ltrs of heating oil each year.
- Those of us who don't cycle to work (some have further to travel than others) use electric/hybrid cars for our commuting.
- We are account holders with carbonfootprint.com and we 'pledge a tree' for every Skytyping sortie that we conduct (one tree is equivalent to one tonne of CO²), and we ask that our clients do the same.