Bristol Type 188

For FS2002 & FS2004

Freeware aircraft by TransGlobalAircraft
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Acknowledgements

Afterburner effects files courtesy of Toshikazu-Shimizu http://flightinfo.ens.ne.jp/FS_KBT/

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The model

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TransGlobalAircraft are pleased to announce that forty years after the Type 188 first flew we have successfully solved the performance problems with the aircraft and she will now cruise smoothy at M2.1+.

You are now the proud owner of your very own highly polished Silver Dream Cruiser. Concorde may be retired but you can continue to travel in comf ort at high altitude and high Mach, provided your journey is no more than 45mins or so as the 188 is still thirsty and lacking in fuel tank capacity. Enjoy.

Pilots Notes

Note: For low speed handling, it is essential that you use the ASI situated below the turn co-ordinator. For high-speed work, use the CSI (Combined Speed Indicator) which gives a more accurate representation of the relationship between Mach and IAS.

Depending on your configuration, when the aircraft is loaded, the engines will already be started and be at idle power of about 15%. EGT will be about 375 degrees C and fuel flow will be about 180lbs/hr.

Pushing the throttles to full power and clicking the afterburner button (below the engine EGT gauges) will ensure that the take off will be brisk and with one stage of flap, lift off speed will be in the order of 160kts (plenty of excess thrust!). Cleaning up the aircraft and trimming will give you a comfortable rate of climb in excess of 6000'/min at 200 -250kts.

Breaking the sound barrier, level off at about 30,000 feet, trim the aircraft so it is perfectly level, and engage the afterburners. Watch the aircraft accelerate. You will probably reach M2.1 but after that, due to the fuel hungry engines and poor intake design of the 188, that i s as far as it will go.

Descending, idle power and trimming will give about 350kts and a rate of descent of about 2000'/min. The aircraft is very slippy, and so you will need to use your airbrakes to slow down to intermediate approach speed of 200kts. Int o final approach, gear and 2 stages of flaps down, and 25% power at 160kts will give a nice 500'/min rate of descent and at the correct landing attitude. Over the threshold and pull the throttles back, giving a touchdown speed of about 140kts.

Needless to say, with so much excess power, the best performance and manoeuvrability will be at low level. Vne (never exceed speed) is not set, however the aircraft will become progressively more unstable above 1200kts at low level.

Stalling clean will occur at abo ut 120kts with a rate of descent of about 3000'/min. Apply full power, level the nose and wait for the airspeed to build before climbing away. Stalling with gear and flaps down occurs at 100kts. Simply apply full power, raise 1 stage of flaps, raise the gear, then complete raising of the other stages of flaps and climb away.

Bristol 188

The Bristol 188 was developed by Bristol Aeroplane Co to meet specification ER134T for a M2.5 research aircraft. It was intended to investigate the thermal effects of high speed flight, with a view to the development of supersonic bombers and transports. It was powered by two Gyron Junior engines with 10000lbs static thrust.

During the development of the Avro 730 supersonic long-range bomber Avro suggested a 3/8 scale analogue to investigate performance, a common approach in Britain through the fifties. The Bristol 188 was initially designed to fulfil this role but the concept was expanded to become a general purpose platform with which to investigate various aspects of sustained high Mach flight. The airframe was constructed from stainless steel and proved to be very difficult to fabricate. Special puddle welding techniques had to be developed

The 188 finally flew in 1962, but due to the Gyron Junior engines' tendency to surge severely at high speed and their excessive fuel consumption, it failed to meet its full potential and never exceeded Mach 2.

What little information gleaned from the Bristol 188, mainly on fabrication, led to Concorde being constructed with conventional alloys, with a resulting Mach limit of 2.2.