



REACTION ENGINES

BAE SYSTEMS

INSPIRED WORK

SABRE™

THE NEXT LEAP FORWARD IN POWERED FLIGHT

Reaction Engines and BAE Systems are collaborating to develop Reaction Engines' SABRE – a revolutionary class of aerospace engine that can power aircraft from standstill on the runway to Mach 5, and then transition to a rocket mode allowing spaceflight at up to Mach 25.

SABRE

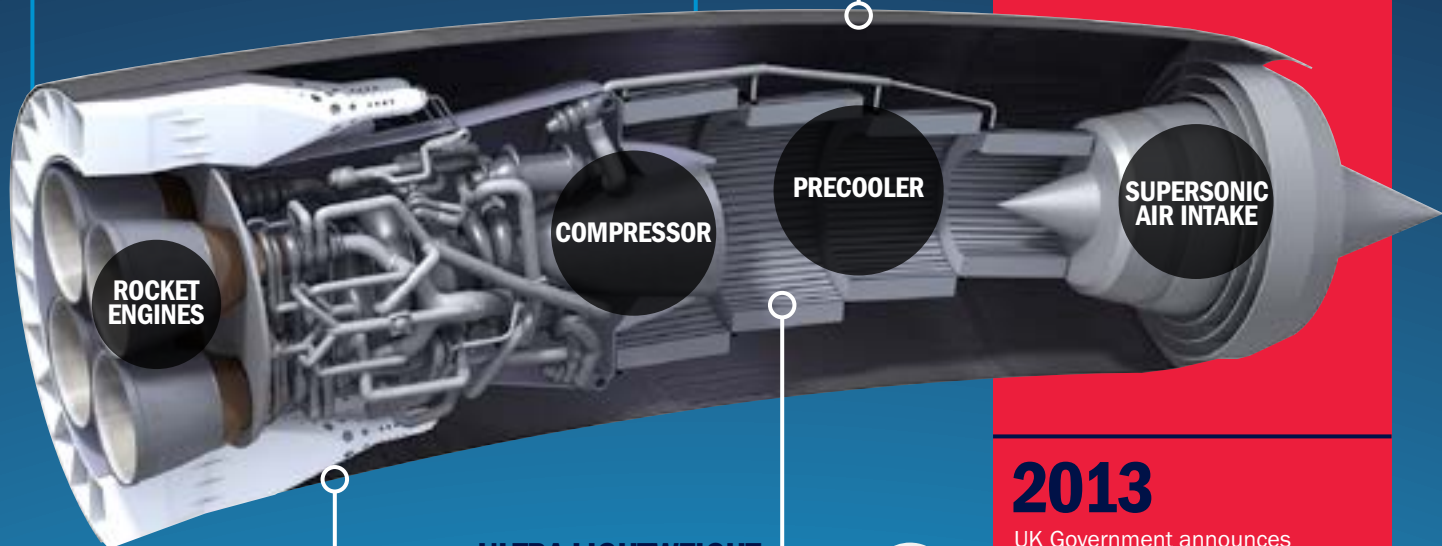


2015

BAE Systems invests £20m in Reaction Engines Ltd and the SABRE test engine.

ENGINE POD

SABRE engines can be installed in an engine pod like jet engines.



ROCKET ENGINES

COMPRESSOR

PRECOOLER

SUPERSONIC AIR INTAKE

2013

UK Government announces £60m support towards a SABRE test engine.

2012

Successful trials of the pre-cooler heat exchanger technology.

2003

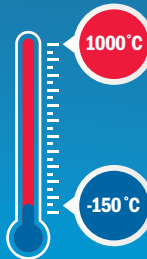
Frost control breakthrough.

1990

Development work begins on SABRE (Synergetic Air-Breathing Rocket Engine).

ULTRA-LIGHTWEIGHT HEAT EXCHANGERS

New technology cools incoming air from temperatures of 1,000 C to -150 C in less than 1/100th of a second, keeping the engine cool at high speeds. Frost control technology stops it becoming blocked with ice.



EFFICIENT THERMODYNAMICS

Heat energy absorbed by the heat exchanger powers engine components, significantly reducing fuel consumption at high speeds.



1903

Orville Wright piloted first recorded flight in North Carolina

1935

Piston engine propelled DC-3 flies, helping to open up mass air transport

1952

The jet age begins with the Comet allowing high speed, smoother commercial flights

1962

First commercial satellite launched, starting a new space industry

1969

The Boeing 747, 'Jumbo Jet', powered by high bypass turbofans makes long haul air travel accessible

1981

NASA Space Shuttle begins operation. Later used to launch Hubble and assemble ISS

TIMELINE OF POWERED FLIGHT

SABRE is an unregistered trade mark of Reaction Engines Ltd.