

# STRUCK BY LIGHTNING

## ARMSTRONG WHITWORTH'S AW.58 PROJECT

The English Electric P.1 (to become the remarkable Lightning) and world air speed record-shattering Fairey F.D.2 are iconic examples of British post-war supersonic development; far less well-known is Armstrong Whitworth's series of designs to the same requirement. Using contemporary brochures **TONY BUTTLER AMRAeS** tells the story of the AW.58

**I**N 1946 THE BRITISH Air Ministry (AM) cancelled the incomplete Miles M.52 turbojet-powered research aircraft, which had been intended to fly at supersonic speeds. Had it flown, the M.52 would have been the first British aircraft to break through the "sound barrier". In October 1947 the USA's rocket-powered Bell X-1 became the first machine to achieve supersonic speed anywhere in the world.

As a result, in 1948 the AM became interested once again in supersonic flight, and the Advanced Fighter Project Group (AFPG) was established at the Royal Aircraft Establishment (RAE) at Farnborough on March 1, 1948. Over the following summer, momentum began to build for a "hardware" project to go ahead. Indeed, the time was ripe for a new British supersonic project, and eventually a request was issued to selected aircraft manufacturers for design studies for a single-seat research aircraft, but also with an optional fighter capability.

Accordingly, a draft requirement was raised, which appears not to have been given an official designation. The quoted performance figures in this document included a maximum speed of 700kt or Mach 1.21 at an operating altitude of around 45,000ft (14,000m), with consideration

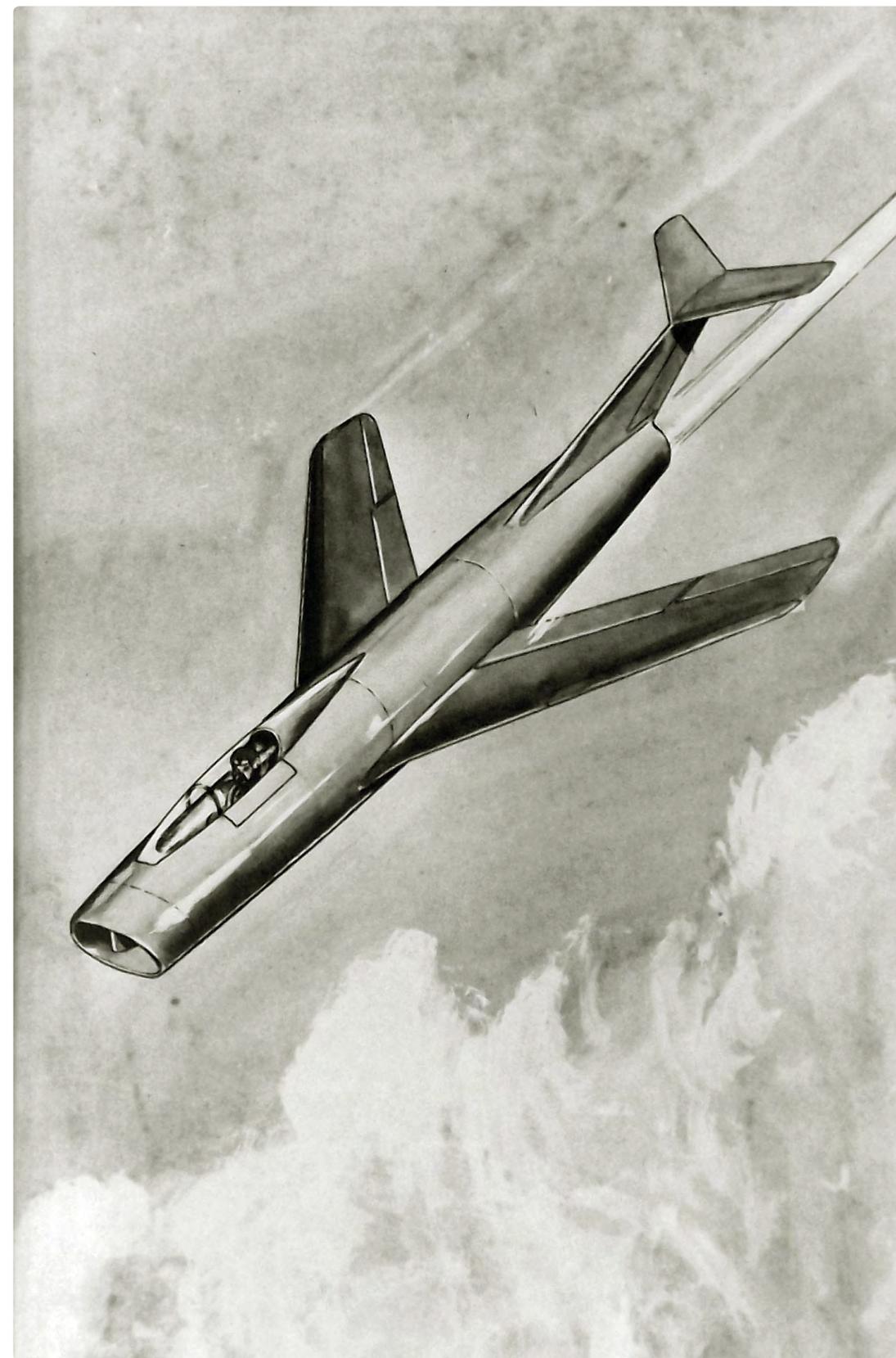


to be given to increasing the speed to Mach 1.4. The powerplant was to be one Rolls-Royce AJ.65 Avon turbojet, and the fighter version was to be armed with two 30mm cannon. Designs were submitted by Boulton Paul, Bristol, English Electric, Fairey, Gloster, Hawker Aircraft Ltd and Armstrong Whitworth Aircraft (AWA). English Electric's P.1 was ordered in prototype form and first flew in 1954, a development later entering service as the famous Lightning. A swept-wing design from Fairey was also looked on favourably, but this was eventually replaced by a delta-wing design which became the F.D.2, which also first flew in 1954 and later set a new world speed record.

At one stage, however, there were also plans to build a third supersonic design, proposed by AWA. This was the AW.58, and the first project brochure is dated August 3, 1948.

### THE ORIGINAL PROPOSAL

The basic aircraft described in AWA's brochure is a single-engined Avon-powered type with a wing area of 190ft<sup>2</sup> (17.67m<sup>2</sup>), incorporating 59° sweepback on the leading edge. It was believed that such an aircraft would reach Mach 1.1 in level flight at 56,000ft (17,000m) without reheat. In the brochure, the manufacturer regrets that it



MIDLAND AIR MUSEUM VIA AUTHOR

**TOP** A sketch of the delta-winged Armstrong Siddeley Sapphire-engined AW.58 design from the January 1950 AWA brochure. **OPPOSITE PAGE** This anonymous brochure illustration depicts the original single-engined AW.58 design, in the classic diving (sometimes climbing) attitude for which AWA's PR department clearly had a penchant.