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Fire in the BELLY

In 1939, after nearly a decade of official indifference, work was finally proceeding on the radical new powerplant developed by Frank Whittle and his colleagues at Power Jets. With the concept rapidly evolving into a flyable test unit, it was suggested that the new engine be test-flown in a modified existing airframe, rather than wait for the bespoke Gloster E.28/39. Enter the jet-powered Anson, as **NICK STROUD** explains

BY THE END of 1939, after nearly a decade of struggling to convince the British Air Ministry of the virtues of his innovative concept to employ gas-turbine technology to create jet propulsion for a new type of aircraft powerplant, Sqn Ldr Frank Whittle was finally on the road to seeing his efforts bear fruit — in the form of an airframe designed and built specifically to incorporate his nascent centrifugal-flow turbojet engine. After a great deal of work by Whittle and his team at Power Jets Ltd, the company he had formed in partnership with two former RAF officers and an investment bank in March 1936, the Air Ministry finally began to regard the project as the basis of a practicable propulsion unit. Accordingly, in July 1939 the Ministry awarded a contract to Power Jets for a flight engine and began discussions with the Gloster Aircraft Co regarding the design and construction of an experimental airframe in which to fly it.

Ten years later Gloster's chief designer, W.G. Carter, recalled his impressions on seeing the engine for the first time in September 1939:

"After some preliminary talk [Whittle and I] went along to the test bay, and I had my first sight of a gas-turbine-cum-jet-propulsion unit. It seemed to me to be a quaint sort of contraption — rather on the rough-and-ready side — and by no means the kind of thing to inspire confidence as a prospective power installation.

"It started working with a characteristic muffled thud as the fuel mixture was ignited and was quickly speeded up to register a modest amount of thrust, which to the best of my recollection was about 400lb. Some parts of the engine casing showed a dull red heat which, combined with an intensely high-pitched volume of noise, made it seem as though the engine might at any moment disintegrate into bits and pieces."

With work proceeding on the first flight engine, designated W.1, a contract was placed with Gloster on February 13, 1940, for a "single-engined single-seat aeroplane for research work in connection with the Whittle engine". Its primary purpose would be to flight-test the powerplant, but it would also "be based on requirements for a fixed-gun interceptor fighter as far as the limitations of size and weight imposed by the power unit permit".

Keen to start flight trials of the new engine as soon as possible, and with the first flight of Gloster's airframe to Specification E.28/39 at least a year away, Power Jets initiated discussions with the Air Ministry about the possibility of earlier trials using a modified existing aircraft. A letter (covered briefly in Air-

Britain's Autumn 2016 issue of *Aviation World*) from one of Power Jets' Directors, Scottish financier and industrial engineer Lancelot Law Whyte, dated December 8, 1939 (TNA ref AVIA15/211), addressed to Capt R.H. Liptrot, Assistant Director (Technical Investigation) at the Air Ministry, reviews a discussion between the two held a few days previously. Its subject was a proposal for "additional accelerated flight tests" for the new powerplant. In the letter, Whyte states:

"Squadron Leader Whittle and I have now given careful consideration to this proposal and we regard it as one of considerable importance. The advantage gained in time and safety appear to us to be out of all proportion to the relatively small cost and trouble involved."

Enclosed with the letter were three copies of a memorandum, "amplifying the rough note which Sqn Ldr Whittle left with you last week".

FINDING A SUITABLE AIRFRAME

The memorandum, written by Whyte, put the case for a series of flight trials to be conducted while the design and construction of the Gloster airframe was ongoing, in order to investigate some of the new powerplant's more general characteristics — it was after all brand-new untried technology. Whyte begins his proposal as follows:

"During July [1939], when the question of flight tests was first under serious discussion, it was suggested that it might be possible to test the Whittle engine in an existing aeroplane modified for this purpose. It was realised that this would not provide a proper test of the performance of the engine, but that experience of the behaviour of the engine in flight might thus be gained more rapidly than by any other method."

With German forces having rolled their way through large swathes of Europe by December 1939, there was now very much a sense of

The personification of grit and sheer determination, Frank Whittle overcame numerous obstacles and disappointments in his early years, including being rejected twice by the RAF on physical grounds. When he submitted his idea for a new type of gas-turbine engine to A.A. Griffiths at the RAE in 1929, it was dismissed as "impracticable".

