

The Second Report of the C O, Army Air Forces to the Secretary Of War

by H H Arnold 27 February 1945

Research & Development

One of the lessons that the war has driven home to the Nation is the necessity for continuing research and development, not only in engineering, but in all phases of military activity. The battle of the laboratories and factories and test bases has not been an easy one. Men have been killed and wounded in its campaigns, but that we are winning is evident in the reports which come back daily from our forces scattered over the world. It cannot be too strongly emphasized that our superiority is due not only to the weight of our production, but also to the *kind* of our production.

Jet Propulsion

First of all, I should like to mention our work with planes which fly by jet propulsion and to set down something of their history. During a stay in England early in 1941 I had occasion to examine various research and development projects on gas turbines and jet propulsion for aircraft. The possibilities of this new means of aircraft power led to the decision that we must initiate a similar gas-turbine and jet-propulsion program in this country without delay. To accelerate such a program from the start it was thought advisable to procure from England the production rights as well as the physical article of an engine which had already been successfully test flown—this was the Whittle engine.

Therefore, on Thursday, 4 September 1941, an initial conference was held in AAF Headquarters to determine the feasibility and desirability of going into immediate production in this country on the English Whittle engine project, as well as to determine which airplane manufacturer was at that time best qualified to carry out the jet propulsion development in conjunction with the General Electric Co., which had extensive experience with steam turbines and turbo superchargers. Present at this conference were (the then) Maj. Gen. Carl Spaatz Maj. Gen. O. P. Echols and other members

of the Air Staff as well as Messrs. Muir, Shoultz, Severson, Jr., and Puffer of General Electric. After an examination of the preliminary data and drawings received from England, General Electric agreed that it would be possible to produce a duplicate engine in 6 months with two more engines in an additional 2 months, the latter two engines to be flight articles. The vital necessity for absolute secrecy was stressed. A cable was dispatched to England to obtain complete information. It was further decided to invite Mr. Bell, of the Bell Aircraft Corporation, to Washington the following morning.

On Friday, 5 September 1941, Mr. Bell and his chief engineer, Mr. H. M. Foyer, reported to my office, together with Mr. Shoultz of General Electric and the AAF officers present the day before. The proposition was presented to Mr. Bell and after a brief discussion he stated his desire to participate in the project. It was then decided to build 15 engines, and 3 twin-engined airplanes designated as the XP-59A. The Bell and General Electric companies were to work in close collaboration. The contracts, under absolute secrecy, were prepared by (the then) AAF Materiel Command. Col. D. J. Keirn was project officer.

Never has a plane been built in this country under greater secrecy. At both General Electric and Bell, the men who worked on the project were investigated even as to their personal habits, so that not even through careless con-

viviality could mention of the project leak out. The workers were segregated in blacked out, heavily guarded buildings; even so, some of the workers were unaware of what they were doing. For instance, the men at Bell who were fabricating the wing sections were never allowed to see the fuselage. A year later the first jet plane was disassembled, crated, and sent west with military police riding on the train with it. On the bed of a dry lake in the Western desert it was put together, ground tested and flown. The plane was a success.

We have learned many things since then about jet propulsion. The absence of vibration and engine noise makes for less pilot fatigue. It appears that the planes are outstandingly safe, the use of kerosene as a fuel greatly reduces the fire hazard, and the low cen-

This report dated 27 February, 1945 relates the state of affairs existing within the Army Air Forces around the beginning of the last year of the war and coincides roughly with the mission of One February, 1945. The war in Europe was winding down as the Allies were capturing large chunks of German Real Estate. The German Luftwaffe was being squeezed for land and fuel. Strangely for the troops of the 484th Bomb Group, German opposition to our bombing efforts was as fierce as ever. This report by General Arnold is important to us as it reveals the strengths and weakness of the Army Air Forces that we were a part of.