

46th IAA HISTORY OF ASTRONAUTICS SYMPOSIUM (E4)
Scientific and Technical Histories (2)

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HISTORY OF BRITISH ROCKET ASSISTED TAKE OFF UNITS

Abstract

The idea of using rockets on aircraft as either sole or dual power plants or, more commonly, to assist in take-off of heavily laden aircraft is fairly old – stretching back before the Wright brothers made their first powered flight in 1903. But it was not until the 1920's that practical experiments began mainly in Germany and by the 1930's most developed countries were investigating the use of rockets take off aids. The technology developed rapidly during and after the Second World War and saw extensive but short lived use. The development of high performance jet engines sounded the death knell for the RATO (Rocket Assisted Take Off) unit (called JATO's Jet Assisted Take Off in the States where the word "rocket" was seen as somehow unacceptable in the 40's). But the RATO experience was often the catalyst leading to larger rocket engine projects and provided excellent "hands on" experience for the country's rocket engineers.

This paper covers the work in this field in the UK, starting with the ideas in the early 1930's initially for use on our Imperial flying boats which linked the British Empire together, through the use of the solid fuel RATO units in WW2 for, among others, Catapult Armed Merchantmen (CAM), to the liquid fuelled version of the late 40's and 50's, before the technique became obsolete around 1960. The last major use was of the BS605 with the Buccaneer fighter. This paper discusses both the traditional RATO units as well as British power plants for rocket fighters.