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**Title:** INVESTIGATIVE RAMJET TESTS OF THE ERJV EJECTOR RAMJET – FINAL REPORT

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**Abstract:** An investigation has been carried out to evaluate the design of the ERJV ejector ramjet combustor. The performance has been characterised and suggestions made for improvements. A design methodology has also been evolved for rapidly attaining potential ejector ramjet combustor configurations, which are suitable for flight demonstrations.

A direct connect test facility, which included a subscale ejector ramjet combustor with four discrete angled air inlets, has been successfully commissioned. A novel cavity cascade integral fuel injector / flame stabiliser was successfully developed and deployed in the ramjet combustor. The critical test conditions were those corresponding to the transition from the ejector ramjet mode to the pure ramjet mode and the initial ramjet mode when the combustor would experience relatively low pressures and temperatures. The combustor has been carefully tested under these conditions and found to exhibit excellent ignition, blow-off and combustion characteristics.