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Contrails

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CAvSoc

Britain's Last Airliner - the BAe146

The talk on the future of flight data recorders could not be given as the speaker had to go abroad for business reasons. Instead, Stephen Robson gave us his talk about the British Aerospace 146 and AvroRJ airliners.

The aircraft had an prolonged development phase as it started from a deHavilland design in 1959 designated DH123 a twin turboprop T tail configuration designed to be a Dakota replacement. The design evolved into the DH126 as a rear twin jet with T tail by 1961 because there were several aircraft in the field such as the Fokker F27, HP Herald and HS 748. Major changes in the aircraft industry resulted in deHavilland becoming part of the Hawker Siddeley Group. The aircraft now became HS136 as a hybrid using the front fuselage of an HS748 to reduce costs. By 1969 the designation had become HS144 as a low wing twin jet with T tail using the new RR Trent engines of 9,600lbs thrust each. In 1970 – the bankruptcy of Rolls-Royce resulted in the cancellation of the Trent engine. The only other engine available was the Avco Lycoming 502 of 6,700lbs thrust. By 1972 the configuration resulted in the HS146 as a high wing, 4 engine T tail. In 1973 the Heath government agreed to 50/50 funding with the Hawker Siddeley Group and all seemed set but then the Labour party gained power against a background of rising oil prices and inflation. In 1974 the HSG announced cessation of the project. The Labour government wanted to nationalise the industry and needed a project, hence, low level funding was given to keep the project alive. After nationalisation in 1978 the project was given the go ahead as the BAe 146. To compete against turbo props and ageing small jet airliners the aircraft had excellent field performance. The 4 engines gave more power than the twin engine concept and, more importantly, were high bypass ratio engines giving a very low noise footprint - very important in the environment conscious USA market - and mounted on pylons to give a 'clean' wing. This enabled large and long flaps which avoided the need for leading edge slats which would have needed a moving tail plane to cope with pitch changes. The addition of tail mounted speed brakes further aided short field performance. Aileron and elevators were cable operated with a power operated rudder to cope with asymmetric engine conditions. Equally the main landing gear was kept simple by using a single

main jack with twin wheels each side, and a wheel span greater than a C130 to cope with poor airfields



Photo Mike Phipp

Hydraulic and electrical systems had redundancy built in, such as an electric motor which could power the hydraulic systems and vice versa. The APU could also be run in the air providing another back up. The first customer was the USA operator Air Wisconsin in 1981 with an order for 4 aircraft to operate in a feeder liner role followed the same year by Pacific South West Airlines (PSA). The RAF evaluated the aircraft which was subsequently bought for the The Queens Flight. An update in 1993 was named the AvroRJ and providing a 'glass' cockpit and more powerful FADEC equipped LF507 engines. This model was bought by major airlines such as Swiss, BA, Cityjet (Irish airline) and Brussels amongst others. A key feature was the ability to operate out of London City airport. Many of these airlines have moved on to Airbus as utilisation increased but 146 and RJs can still be seen flying into London City. A new model, the RJX was cancelled by BAE Systems in 2000. A new role has been found for both BAe146 and AvroRJ aircraft as tankers being able to carry and drop nearly 10 tons of fire retardant. One of these in particular has been busy in the recent Australian bush fires. A total of 221 BAe146 and 166 AvroRJs were produced.



Tronos

Bournemouth Air Festival 18th -21st August

Meetings - at Druitt Hall commencing 8pm

Wednesday 4th May 2016 - AGM then Charles Rolls and Bournemouth's International Aviation

Wednesday 7th September 2016 - Flying the Vulcan by Phil Nelson