

MY TSR2 MEMORIES - 'NOT ALL WAS LOST'

My involvement with the TSR2 aircraft was with the, at that time, Marconi Avionics Co Ltd at Basildon Essex, after which time the company name changed many times, up to the time I retired in 1998, when it was GEC Sensors/OPTICS. Then, after the collapse of GEC into BAE Systems, then to Italian Companies to present day Italian Co. Selex.

My time spent with the companies up until retirement was just over 50 years, my status on retirement was Principal Mechanical Designer.

The long distance radio being developed for TSR2 was a unique high output HF single sideband (SSB) transmitter-receiver. The transmitter power output was one kilowatt PEP (Peak Envelope Power). The power requirements with the circuitry required 2,000v. With this high power circuit being housed in a compact aircraft package of unit width 1ATR, it was necessary to have the front section housing the transmitter pressurised. The design calculation required to cool the output valve was carried out by Mr D West. It involved a heat exchanger which circulated dry nitrogen, fan driven internally against the aircraft, air, rack cooling system externally. The manufacture of the pressure box with its dip-brazed heat exchanger was carried out by Marsten Excelsior at Ford House Wolverhampton (I think they were part of ICI).

After the agony of the Wilson Government cancelling the TSR2, not all was lost to the avionics industry.

Although it is all well known, I will reiterate here, that the alternative requirements for aircraft would be purchased from USA, namely, the F111s of various types and 250 MacDonal Douglas Phantoms (for RAF and Royal Navy), part of the deal being that where possible they would be fitted with British avionics.

Therefore, work continued apace on the SSB radio designated Marconi Type AD470. It was also seen to be an ideal radio for the RAF Nimrod and its long distance reconnaissance and anti-submarine missions. It was in service for many years with Nimrod and I just wonder if it still is. This version was used with the full one kilowatt PEP. The sets for the Phantom were limited to 500 watts PEP by a simple change. They were exported and fitted by McDonald. The large ceramic and copper finned valve was supplied by EIMAC and as time went by, English Electric Valve Co,

Chelmsford made a very fine alternative. The rear box compartment (unpressurised) housed the receiver. Built before the advent of printed circuit boards with the dual-in-line components. The components of discreet type were mounted on glass fibre boards and hand wired. The individual circuits were housed in individual extruded 'module' cans, the bases of which were sealed and filled with dry nitrogen.

At the time, Marconi Avionics Headquarters was in Rochester, Kent, and headed by Dr B J O'Kane.

The Engineer responsible for transmitter development at Basildon, was Mr C W Rich. His team consisted of:

Mr W McNab

Mr R Keefe

Mr W Clarke

Mr D Hodgkin

Mr E Kemp

Mr B Williams

Mr M Chiltern

Mr J Gray

and others whom I may have forgotten. As I was not involved with receiver work I would rather not guess at the names.

All Mechanical Design work was carried out in the Design Office, headed by Mr G Payne. His team consisting:

Mr D West

Mr M Lawrence

Mr G Pearce

Mr D Aldridge

Mr D Stearn

Mr J Moody.

Additionally there was all the work required for teams in aerial tuning units and installation in high power transmission.

I think at the time this was considered the highest ever powered airborne radio. Perhaps it still is?

This particular project played an extremely important part in the following years in developing my skills in Mechanical Design, being in my early 30s at that time.

Geoff Pearce

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