

I joined EMI in 1953 as a "trainee" in electronic engineering, working in various locations and departments. After qualifying in 1958, I joined the Advanced Techniques department of Airborne Radar division at Hayes, and around 1960 worked on the design of three aspects of the TSR2 electronics.

In its reconnaissance role TSR2 used a sideways looking radar. The aircraft would be flying supersonically at low level with radar radiating on both sides at right angles to the line of flight. This allowed it to radar-map the ground either side of its line of flight without being easily detected. The radar information was displayed on a crt which exposed a film strip producing a map of where it had been. One problem was that when the aircraft yawed the two beams became displaced from the line of travel. I had to design a simple correction to the crt display to bring the picture back into line. This type of radar mapping was tested in a Canberra and was very successful. On return to base, the film would be analysed for potential targets, and a flight plan generated using the film strip to automatically guide the aircraft in its bomber role onto the targets.

Rumour had it that the console containing the recording equipment and navigation radar display would chop off the legs of the navigator in the event of an ejection!

One potential problem in the recce role was getting the data back to base particularly should the aircraft be shot down. An idea to overcome this was for the aircraft to make a rapid ascent after a run and send the data back to base during a high level return flight. I had to design the

transmitter to do this and it was based on a frequency modulated 50 watt CW magnetron. The control and modulation circuits were fully solid state and the subject of a patent.

Although the navigation radar computers were to be digital (using germanium transistors) a method of measuring range was required which at that time was not easy in digital form. I designed a system of range measurement using synchros and resolvers but it never got beyond the concept proving stage.

The engineer developing the digital counters at one time had an accident and blew up a large number of the very expensive germanium transistors. He made the dud ones up into a necklace for his wife who was not impressed!

I left EMI in 1963 and joined Cossor in Harlow. During visits to Boscombe Down regarding their new radar (the one on the laid back tower!) I saw TSR2 several times.

John Pearce