

Pre-ATHENA Recollections

By Warren Burrell, November 2010 – edited by LABenson

A recent e-mail which included some Magstec and Transtec notes from Harry Wise stimulated a herd of interesting and unique thoughts!

1. Transtec I and Magstec I were test beds for transistor and magnetic core logic. They were not computers but a rack of self testing logic.
2. Transtec II and Magstec II were 24 bit stored program computers. Each had 4,096 words of core memory. They were program compatible. They could be considered a follow on to the 24 bit Atlas/1101 vacuum tube computers. They remained around the plant for years being used for all sorts of things.

Back when Frank Mullaney and I were at Rome NY regarding the Digital TAC Study, Capt. Dale Ashcroft, our interface, relayed to us that at that date Sperry and Remington Rand had announced their merger. Further, Sperry was expected to be able to get better management from this. Both Frank and I had some trouble suppressing our reactions.

Sometime later, I was part of a team to visit Coco Beach, Florida – I now believe it was because of 1100 and Digital TAC experience and being receptive to a forthcoming Request for Proposal (RFP). All I really remember: An AF Major taking me along for a spin to a restaurant at over 100 mph. Otherwise Thornton Dennis was a marketing genius. I believe Burroughs had already been given the award for Range Safety.

The other TAC – ANALOG and Rome, Georgia had people such as George Hanson and Dick Gehring – now both deceased. Dick died at an international railroad conference in Cuba, that dragged out the process of releasing his body to family. At George's funeral was the only time I ever saw Frank Mullaney have a breakup in observance. I had known George for a long time, much before he became Chief of Univac Military Engineering and Noel Stone, Commercial Engineering. Without what I thought should have been made available, George invited me to consider a major position on the NTDS project [the only time I could remember.]. I thanked him, saying that I knew too little of the NTDS Programs and had what I thought was major commitments to the 11xx Programs. So much for the 30 vs 36 bits and going down a submarine conning tower!!

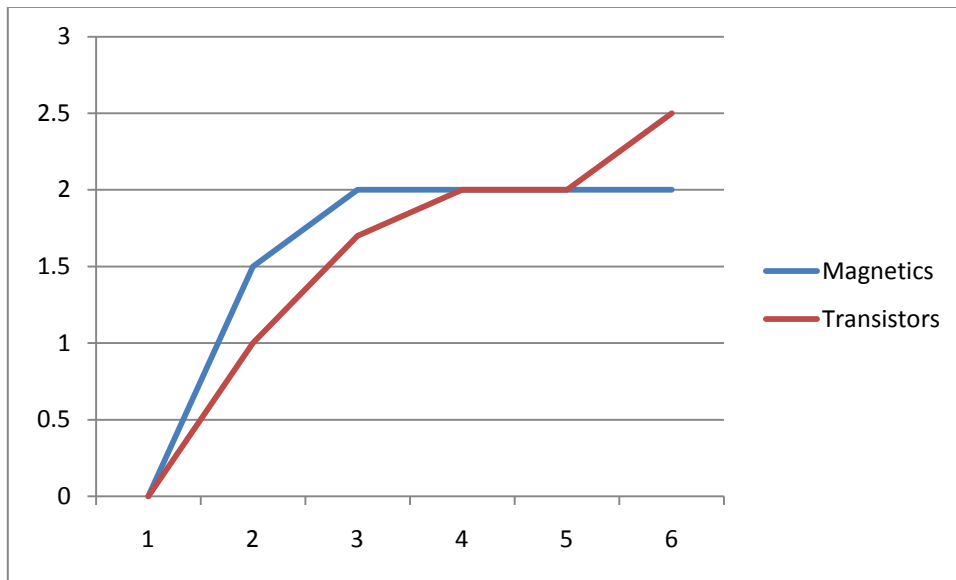
P.S. One of my UM EE classmates was unhappily leaving because he came to UNIVAC to learn digital and was stuck on another analog computer design (in the Rome GA TAC.)

Next: Byron Smith handed me part of a proposal response to an RFP for the Atlanta Missile Range with maximum reliability requirements. This was with the temporary tag of RELA-bility. My role was to define the two equal alternative circuit choices – magnetic or transistor. I was given open access to the restricted demo area of the tests in progress. All the required data and objective answers to my questions were provided, maybe it was because of Jim Thornton. I did the best I could to prepare as

objective descriptions of the two technologies for the proposal and they received OK's by Mullaney and Smith. I thought that this was an achievement on my part in that dimly illuminated test room.

At the subsequent briefing at the Western AF Development Procurement Office, I met with Erv Tomash, UNIVAC marketing, and Major Gerry Probst. In response to their queries about circuit choices, I promptly read from my data in the proposal. When they kept asking for more information and for my personal leanings - I told them that I had been directed and even bound to say no more until the comparative tests were completed!

Several engineers [including myself] did try to graphically create values for the comparisons between magnetic logic and transistor logic after the tests and decisions had been made. It showed a later ascendancy of transistors though time. The two curves were very close for a period before the transistor forged ahead gradually. Note: As depicted in the chart below, the graph ordinates are quite arbitrary as the ultimate value was a combination of many factors. {Editor's note: *The vertical axis has somewhat arbitrary numbers. The horizontal axis is time in years – the illustration is not factual, rather to illustrate the recollections of the author.* } .



At the beginning of the Rome NY Digital TAC study some imaginative algorithms were employed (Kerker-Peterson) to depict the transformation of the Vacuum Tube SAGE computers into applications of various technologies. Some of us thought (Bill Price and I) that this gave some applications for the evolving transistors. Especially for Arne Hendrickson who had circuit definition responsibility of our study. Also on communications were Ken Bergen and Ed Casey.