INTRODUCTION

The Vintage Computer Federation VCFED is quite active preserving computer history. Our primary contact with them for almost 2 decades has been Duane Craps, who worked at the Norfolk Naval Shipyard on Naval Missile Systems which used 1219B [CP-848/UYK] computers which were also known as the MK-152 Digital Fire Control Computers. He was involved in the restoration of the 1219B's at the Vintage Computer Federation museum at Wall, NJ. These 1219B computers were formerly at Johns Hopkins University Applied Physics Laboratory where they were used in research for the Navy's Missile Program. "You 18-bit guys would be happy to know that the last Navy 1219Bs were just turned off in 2015! They were at a shore site AN/SPN-42 Automatic Carrier Landing System. Duane". https://vipclubmn.org/cp18bit.html.

VCFED volunteers posted a few YouTube videos, linked hereunder for reader viewing.

BACKGROUND

https://vipclubmn.org/Exhibits.html#VCFED

We were Mid-Atlantic Retro Computer Hobbyists (MARCH) from 2004-2015. That group was just a computer club. In 2015, we disbanded and reformed as a national non-profit, the Vintage Computer Federation (VCF), which then obtained 501(c)3 status. VCF then formed a Mid-Atlantic chapter to replace the old hobbyists group. The VCF local chapter operates as before; however, the national organization is doing far more activities. For example, we acquired the Vintage Computer Festival West (to supplement our existing Vintage Computer Festival East), and we also acquired Vintage Computer Forum which is our hobby's largest discussion site.

Our museum group in NJ has a Univac 1219B - This suite of equipment came from Johns Hopkins University Applied Physics Laboratory, where it was used to develop software for the Terrier Surface Missile System used on board many NAVY ships, i.e. the MK-152 system. The museum is part of the Info-Age Science History Museum and National Historic Landmark. Information Age Learning Center (InfoAge) is located at the old Camp Evans base in Wall, New Jersey which is listed on the National Register of Historic Places.

During the 1219B restoration, Duane developed a simulator now on his MeWe computer group files area: https://mewe.com/group/5fd552d31f79902b9084908f/documents. In the 1219B/CP848/mk152 folder then the 1219 emulator folder Link to the home page: https://mewe.com/group/5fd552d31f79902b9084908f. The emulator EXE and the memory.0 need to be in the same folder. The NUMB2OCT.ttf font needs to be installed in host computer to display the octal registers as blinking lights. Richard Carlson on the MeWe group is building beautiful simulators for the 1219B and 1218 that use the UNIVAC logic down to the gate level, but run too slowly. Mine is written in Visual Basic which just does the math and plugs the results into the registers. Direct any questions to the MeWE group. Link to video at the museum: https://www.facebook.com/vcfederation/videos'

VIDEOS

A) We acquired a Univac 1219-B mainframe six years ago. It's designed to control radar and weapons on a U.S. Navy battleship. Ours is the only known complete system in a public museum. Tonight we began its long-term restoration by temporarily modifying the paper tape I/O console for a modern power source. Enjoy the video of the first power-up! https://www.facebook.com/vcfederation/videos/1301870723164361

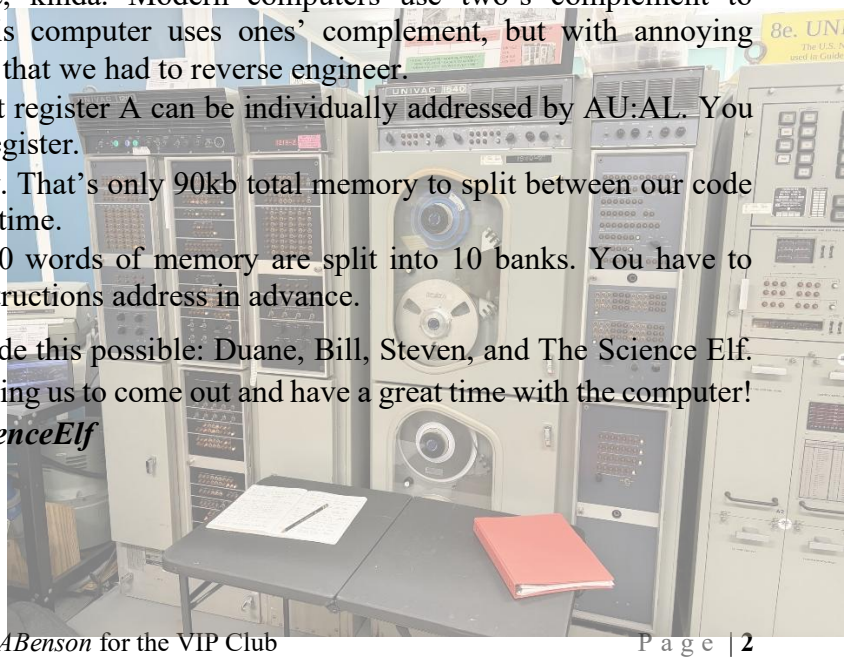
B) https://www.youtube.com/watch?v=s7VBoVpKhi4&t=20s . Here is a quick demonstration of the Univac 1219B system (Navy MK152) at the VCF Museum located within the InfoAge Science Center in Wall NJ. These systems were used for fire-control during the Vietnam War era on "Tartar", "Terrier" and "Talos" naval guided missile systems. This particular unit was used on a "Terrier" system as indicated by the mark 75 SDC cabinet next to the teletype. This particular functional example was donated by the Johns Hopkins applied physics laboratory and is under restoration by the VCF Museum team.

C) **We Programmed a 60s Computer**; you may want to click on the SKIP to bypass some of the ads: https://www.youtube.com/watch?v=rU8sCbwB8XU. Almost 19 minutes from a Vintage Computer East Festival.

D) **Heavy Duty Computing: Univac 1219 In Action**; Fran Blanche gives a hands-on tour of a fully operational **Univac 1219**, a ruggedized 1969 military computer once used in naval fire-control systems. She opens its sliding racks, shows the discrete-component logic modules, demonstrates the tape-loading system, powers the machine up, and marvels at its engineering quality and reliability more than 50 years later, https://www.youtube.com/watch?v=yv-AN1sy9w4

E) Posted The computer's original purpose was to be used by the Navy to read in radar signals and direct artillery. It really is an amazing feat of engineering. The UNIVAC 1219B is a super weird machine and is hostile to modern programming in almost every way:

- 18 bit words. Memory addresses and values are 18 bits! Not even a power of two.
- Ones' complement arithmetic, kinda. Modern computers use two's complement to represent signed integers. This computer uses ones' complement, but with annoying differences around signed zero that we had to reverse engineer.
- Just a few registers. One 36-bit register A can be individually addressed by AU:AL. You get that and another 18-bit B register.
- Only 40,960 words of memory. That's only 90kb total memory to split between our code and the memory it needs at runtime.
- Banked memory. These 40,960 words of memory are split into 10 banks. You have to configure which bank your instructions address in advance.



Thanks so much to the people that made this possible: Duane, Bill, Steven, and The Science Elf. Thanks to all the staff at VCF for allowing us to come out and have a great time with the computer! What an amazing experience. ***The ScienceElf***