Dave Norman (interview)

Naval Postgraduate School

Dave was hired by Doug in 1969 as manager of operations. Dave quickly expanded the job to include systems engineering and systems programming. He had worked as a systems programmer and computer operator for a small company in Palo Alto in 1963-64, at a time when all it took to get a job like that was (as Dave says) “blood pressure and a pulse.” It was the midnight shift, so there was plenty of time between requests to mount a tape, to do the systems programming. Yes, that was in Assembler. After that, worked for a year in LA, but life there was unacceptable. Came back to Monterey, distributed a number of résumés, including one to Doug Williams.

In those days, you could hire people as computer specialists; no degree requirements. You can’t do that today.

In the 1970 time period, there wasn’t much creativity. By being both management, and technical, Dave was able to do things he wouldn’t have been able to do if he’d been wearing only one hat. He was able to put a card reader in the user area, and let users enter their own card decks. There was concern that the next thing, there would be students doing operator work. Yes, that did in fact happen. Worked out fine. Also put a self-service printer in the user area. That was another idea that was not universally accepted at first. As an administrator with a strong technical background, he was able to assure everyone that he could set things up so that this level of user access would not cause trouble.

Departmental vs. central computing: Some applications, like DMDC’s work, to this day, require a mainframe. A number of functions, though, made sense to move from departmental computers to the central system – like, DNS, passwords, email. Departments resisted the idea, but Dave pointed out that maintaining such applications isn’t very interesting, and if the departmental systems support people gave them up, they would have more time for much more interesting work.

Research on the mainframe: quite a bit of weather simulation, simulation of logistics questions, helicopter rotor design, etc. OR was a major user of the mainframe for simulation work. There were big jobs that would run all night long. They, and DMDC’s jobs, would have to be optimized so that they wouldn’t interfere with each other – so that DMDC’s work would get more machine capacity than it was allotted. A number of applications moved from the mainframe to departmental computers in the 1995 – 96 timeframe, as departmental computers grew more powerful. It became more feasible to have students set up applications on departmental computers.

It was when the 360 was replaced by the 3033, that remote terminals, 3270’s, were distributed around campus. Cards were no longer the only way to enter jobs.

The advent of PC’s was a big challenge. There were two big issues: budget, and control. Who would maintain the PC networks? Departments began to bring in local PC networks about the same time the Data Center did. PC’s would be networked within a lab, or among half a dozen professors on a section of hallway.

The purchase of a new computer: the national Board of Contract Appeals’ mandate was extended to oversee computer purchases – and guess whose purchase was the first to go before them? Doug and Dave really were clearing new ground. Amdahl won the contract fair and square, for one of the mainframe replacements, and there was real trepidation whether it would work out. It worked fine. Dave notes that in the days of the 360’s, it

wouldn’t have – when the mean time to failure was on the order of 35 hours. Also scary: when IBM lost the contract to support the mainframe. That too worked out fine.

The first real computer Dave worked on was the Q32, the SAGE system, for missile defense. Its console was 32 feet long – because the controls for everything, tape drives, card readers, everything, was on that console. Diagnosis would include backing up to where you could see both ends of the console in one field of view, and you’d watch the pattern of lights. Computer operators would walk up and down the rows looking for tubes that were starting to show a bluish haze, which would mean they were getting ready to fail. [Only one Q32 was ever built (1960-61). It was located in Santa Monica. Since computers of the day could run only one job at a time, there was a tremendous amount of in-between time that was wasted, and this on a machine that used a tremendous amount of electricity. It was made by IBM for the US Air Force Strategic Command. The program it was designed for was scrapped by the Air Force before the Q32 became operational. After that, research was done on it to explore ways to implement multi-processing, to make the machine more efficient.]

What about Doug? He brought mainframe computing, and then time sharing, to NPS. Crucial: the big innovations. He had the goal that there would be a keyboard on every desk, before anyone realized that would be valuable.