File -
Hoffman 2/27/84

Developing a shared resource laboratory is much more complicated then it seems at first glance.

I. Physical facility.--alarms, air conditioning, (for continuous use), power requirements (surge protectors), wiring, table orientation, lighting and student flow. Channeling, inter com

II. Staffing.

i. Non academic - technically qualified maybe with a vocational certificate or a student at the local university or a member of the local amateur computer society. These individuals unpack the equipment, register the serial numbers, send in the warranties, make archive copies of system software, make 8x11 copies of manuals for laboratory racks, make and maintain sign up sheets, put together the traveling computer table, teacher upgrading, software review, software installation (compilers), and maintain expertise on all application software (spreadsheets, word processors, database management systems, specialized maintenance and utility software.), Research, interfacing Projects, Maintena

ii. Academic faculty users within all departments. These users consult with the technicians as they develop their course work.

III. Logical environment.

i. Hardware--computers, monitors (Crt units), disk drives (two often required), printers (letter quality, graphic capabilities -may require interfaces, 14 inch capabilities), modems, phone lines for data transmission, cables, splitters, spare parts, special purpose software cards (music for instance), clock boards, speech synthesizers, speech recognition boards extra hardware to use A/D or D/A converters for science simulations and perhaps hard disks, cables and switches for networking.

ii. software--compilers, interpreters and assemblers for teaching programming in such languages as Pascal, FORTRAN, BASIC, LOGO, COBOL, and assembler (new languages will soon be popular for the high school). Application software packages such as word processing, spread sheets, financial packages, music, art, graphics, maintenance utilities (see below), information utilities (Compuserve, Source, Dow Jones capabilities) and the myriad of courseware software for bilingual education, geography, arithmetic etc.

If you have an Apple I suggest each laboratory have utility programs such as: (1) the DOS tool kit for generating character sets and graphics (shape tables and Apple programming Assistant); (2) Beagle Brother's Alpha Plot (the graphics allows signs and letter development on an artists level; (3) Beagle Brother's Utility City (xlister allows a statement at a time listing of a basic program); (4) Beagle Brother's Apple Mechanic (has a disk

Merging, renumbering utilities for designing BASIC programs

fixer that helps save horrible errors); (5) Quality Software's

Technicians

Bag of Tricks (has disk maintenance routines); and (6) The 4.1 version of locksmith (this essential software Degausses and certifies disks, makes back up masters and has limited error recovery routines for crashed disks). A good book to get the technician that will allow him to function with these software packages is Beneath Apple Dos by Quality Software.

A CP/M environment allows the teacher to use software that is more ubiquitous then the machine specific material used without CP/M.

IV. Administrative Environment.

i. Outside of school. The district should have a knowledgeable administrator of computer services. Under this individual all purchasing, maintenance and appropriate curriculum should be coordinated. He should have a software library, catalogues, inservices scheduled and, I think, teach a few classes actively so that he knows what is really happening. The pontificating of administrators whose only experience is vicarious is usually worthless. This person must insure that equity between schools does not bring down the programs of schools that have been fortunate enough to have energetic and creative teachers. Pursuit of mediocrity in the name of equity is the great disease of this position. Suitable safeguards must be instituted so that the person in this position raises standards instead of lowering them. He must be strong enough to convince the individuals he reports to that this technolgy requires a more subtle handling than other disciplines. Text books, lesson plans and other summer writing programs may not be suitable.

ii. Inside schools. The high school should have a department chairman (or pseudo chairman) who gets things done. This individual works with the principal to set up the budget and fee card schedule to run the laboratory.

The principal will generally need the same type of education the upper division administrators needed to understand the costs and problems of this new educational field. Early openings, late closings, Saturday openings, and summer openings with their scheduling aberrations will drive him crazy. The costs of the program will be very upsetting to him. He will not understand that students will be entering school with most of the curriculum already finished with self instruction, that the field is so dynamic that curriculum and equipment is in a constant state of flux and that teachers will be on constant maintenance runs. The hardest thing for him to understand is the fact that most of the student work will have to be done outside of the normal class schedule.

Maintenance

a. instal Equipment (and testing)

b. Running Periodic and maintenance Routines

c. Isolating and replacing defective parts

- i. Memory tests
- ii Keyboard tests
- iii I/O tests
- iv CPU tests

} apple cillin XPS software

d. Care and maintenance of disk drives

- i test disk speed
- ii Read/write head alignment
- iii Tracking alignment

} DACS Long Tests

e. Physical replacement of chips - apple CILIN, apple Reference Manual

f. Liason with local Technician