

CONFIDENTIAL

MINUTES OF WORKS COMMITTEE MEETING

8:30 AM - February 15, 1967

Members Present: Ken Olsen, Mike Ford, Pat Greene, Win Hindle, John Jones, Pete Kaufmann, Bob Lassen, Harry Mann, Nick Mazzaresse, Stan Olsen, Dave Packer, Mort Ruderman, and R. Smart substituting for T. Johnson.

Members Absent: D. Best.

1. Displays (S. Ogden)

Stu described the status of display projects. Currently, most effort is going toward fulfilling commitments on the 338, 339, and Graphics. II (in conjunction with Bell Labs.).

The status of Graphics II was questioned by the committee. Several members felt that the extent of our commitment to the project should not be finalized until a better evaluation of the display program is developed. N. Mazzaresse, S. Ogden, and H. Mann will work in this area and report to the committee February 28th.

2. Pinkerton Recommendations (A. Hansen)

Specific Pinkerton recommendations were discussed. It was decided that the functions of the proposed Security Committee will be performed by the Personnel Committee.

David W. Packer

DW:tw

CONFIDENTIAL

MINUTES OF WORKS COMMITTEE MEETING

February 8, 1967

Members Present: Dick Best, Mike Ford, Win Hindle, Ted Johnson, John Jones, Pete Kaufmann, Bob Lassen, Harry Mann, Nick Mazzaresse, Ken Olsen, Mort Ruderman and Dave Packer.

Members Absent: Pat Greene and Stan Olsen.

1. Physics Marketing (J. Jones)

John proposed that physics marketing be done on a product line basis, with close coordination among the staffs. Marketing capability is now limited; requisitions are in for more people.

The specialized markets which we now sell to are:

Physics	8,9,10
Biomedical	L8
Typesetting	8
Oceanography	8
Displays	8,9
Communications	
(Switching)	8
Education	8S
Direct Digital Control	8,9

2. TU79 Tape Transport (E. Harwood)

Ed summarized the results of reviewing the project. Production is about a year away. Manufacturing cost estimates have risen to 4K. Specs and schedule goals need clarification.

It was suggested that better project management is needed. The project will be reviewed by the same committee at the end of March.

3. Closed Circuit TV (M. Ruderman)

Mort proposed buying equipment for about \$600. He will check to see what product lines would help pay for it.

4. New Products

The importance of security on new product information and good communications when release decisions are made was stressed.

David W. Packer

DWP:tw

MINUTES OF WORKS COMMITTEE MEETING

February 1, 1967

Members Present: Ken Olsen, Dick Best, Mike Ford,
Win Hindle, Pete Kaufmann, Bob Lassen,
Nick Mazzaresse, Stan Olsen, Mort Ruderman,
R. Smart substituting for Ted Johnson, and
Dave Packer.

Members Absent: Pat Greene, John Jones, and Harry Mann.

1. Back Panel Wiring (E.Harwood, D.White)

A DITMCO machine to check panel wiring was proposed. The machine generates programs by processing a good panel. We will explore renting Raytheon time on this machine before making a decision on buying one.

2. Late Orders (P.Kaufman)

A system to alleviate late shipments has been set up by Production and Sales Administration. Production works on a firm 3 month schedule for all items with a six month projection. Sales Administration uses the production schedule to set delivery dates. A delivery estimator sheet is supplied to field offices. The system is new this month and will take several months before its effectiveness can be evaluated.

Long delivery items now are the PC01, TC01, and the 338 system.

K. Olsen suggested we change the name from "Sales Administration."

3. Project Reviews (R.Best)

Four reviews were held this month, three of new projects.

Agendas will be sent to Product Line Managers.

A discussion of the written biweekly review resulted in a consensus that it is a useful supervisory tool but that its use should be determined by individual managers.

4. Supervisory and Management Training (R.Lassen)

The committee agreed that in-house training programs are desirable for both supervisory and management personnel.

Such programs would supplement, not replace, education being provided outside the company.

Teams were set up for planning and executing both programs. They are:

Managerial:

W. Hindle (Chairman)
S. Dinman
M. Ford
J. Jones
D. Packer
M. Ruderman
J. Smith

Supervisory:

P. Kaufmann (Chairman)
P. Greene
E. Harwood
R. Lassen
S. Mikulski

5. Discounts

Confusion exists regarding our blanket and cumulative discount terms.

N. Mazzaresse will publish a clear statement of terms in the Sales Newsletter.

Dave Packer

DWP:tw

CONFIDENTIAL

To: File
cc: Committee Members

MINUTES OF WORKS COMMITTEE MEETING

January 26, 1967

Members Present: Dick Best, Mike Ford, Pat Greene,
Win Hindle, Bob Lassen, Nick Mazzaresse,
Mort Ruderman, and Dave Packer.

Members Absent: Ted Johnson, John Jones, Pete Kaufmann,
Harry Mann, Ken Olsen, and Stan Olsen.

1. Cabinetry (L. Prentice)

L. Prentice and D. Nevala proposed a standard 19" black and grey cabinet with single wide doors. The committee agreed with all proposed specifications. It was recommended that we not offer a 31" expander cabinet option.

Cabinet prices should be reviewed. A notice of the new cabinet will be put in the engineering news.

2. Basic Programming Class (J. Drew)

The proposed class was unanimously approved. Text may be the Small Computer Handbook. Pressure to offer the course to prospects should be resisted. No in-house people will be allowed initially, although this need should be reviewed.

3. Customer Grading

A discussion of customer grading resulted in the following decisions:

- a. The "Monitor" status (sit in on course, don't take exams) should be dropped.
- b. Grades will be given to individuals taking the course.
- c. Grades will be available from the training department on request.

Dave Packer

DP:tw

MINUTES OF WORKS COMMITTEE MEETING

January 18, 1967

Members Present: Harry Mann, Win Hindle, Stan Olsen, Ted Johnson, Dick Best, Bob Lassen, Pat Greene, John Jones, Mike Ford, Mort Ruderman, and Dave Packer.

Members Absent: Ken Olsen, Nick Mazzaresse, and Pete Kaufmann.

1. Mailing List (Tim McInerney)

All field office lists should be in this week. Lists are coded by: Product Lines, Application, Status (customer or prospect). Updating will occur quarterly.

D. Packer suggested we evaluate processing the lists in-house.

2. Bookings (Ted Johnson)

First half books are about 20% below forecasts. All product lines are low except modules, PDP-8/S, and PDP-6/10.

The adequacy of calendar 1967 bookings estimates, which appear far above manufacturing capability, was questioned. Each product line will review estimates with Ted.

3. Inquiries (Ted Johnson)

Inquiries from sales representatives are answered by asking for detailed information. General inquiries (100-150 per day) are handled by sending literature and notifying the field office concerned. Bill Farnham controls inquiry processing.

Ted suggested that all RFQ's go through one area and that the internal mail system be overhauled.

Dave Packer

DP:tw

MINUTES OF WORKS COMMITTEE MEETING

January 11, 1967

Members Present: Ken Olsen, Harry Mann, Stan Olsen,
Nick Mazzaresse, Bob Lassen, Mike Ford,
John Jones, Dick Best, Mort Ruderman,
and Dave Packer.

Members Absent: Win Hindle, Pete Kaufmann, Ted Johnson,
and Pat Greene.

1. Public Relations (Ken Gold, Allen Kluchman)

The public relations and promotional program was described
in detail.

H. Mann suggested considering financial Public Relations
men in the search for a publicity consultant.

Both the Annual Report and our OEM brochure could be
used as a device for presenting items like heat testing
and marginal checking to the public.

2. PDP-8 Marketing (Howie Painter)

Graphical schedules for marketing work in oceanography,
communications, OEM, and typesetting were presented and
discussed.

K. Olsen suggested putting schedules on slides for
presentation and holding marketing review meetings.

3. Project Reviews (R. Best)

Dick distributed schedules for project reviews. Reviews
will be open to all that are interested. They are
schedule, not design, reviews.

Dave Packer

DWP:tw

MINUTES OF WORKS COMMITTEE MEETING

January 5, 1967

Members Present: Ken Olsen, Win Hindle, Stan Olsen, Nick Mazzaresse, Harry Mann, Ted Johnson, Bob Lassen, Pete Kaufmann, Pat Greene, Mike Ford, John Jones, Dick Best, Mort Ruderman, and Dave Packer.

1. PDP-8 Marketing (H. Painter)

Goals of the marketing group are to insure good sales over the next year and build a strong staff for future product marketing.

Over half of our sales are to OEM/Systems customers. An industrial sales support specialist will be added to the staff.

Specific markets with high potential are typesetting (5 per mo.) 680 Data Communications, and oceanography.

Ken Olsen suggested that we attempt to schedule marketing as we do development. Howie will return next week with a schedule for the projects planned.

2. Company Public Relations

Ways of promoting the company to our market were discussed at length. Consensus appeared to be that we should do some advertising and publicity work that conveys the type of organization we have.

3. Data Processing (D.Packer)

Burroughs System is up and in full operation. Most financial applications have been converted, work in Material Control is well under way, with initial applications in module production. Work on an order processing and invoicing system will be started next month.

4. Parking (R. Lassen)

An attendant will guard the parking lot. Four cars have been stolen recently.

A proposal for parking allocation was approved. The committee agreed that parking violators will be suspended without pay for two weeks if

- (a) They have 3 violations within a 1 year period

January 5, 1967

- (b) Their supervisor has warned them of the penalty.
- (c) They have received (through their supervisor) a letter detailing the penalties.

Work is underway to improve lighting in the Thompson Street lot. Also, the Maynard police chief should be called in to discuss prevention of vandalism in our lots.

5. Disk (M. Ford)

We are planning to take our small disk, modify control to allow up to 4 disks and sell the configuration as part of the PDP-8 line.

Hardware will be in production by April. Questions of personnel and environmental test will be considered by P. Kaufmann's Methods Committee.

M. Ruderman suggested that we promote this addition to the product line dramatically.

David W. Packer

DWP:tw

MINUTES OF WORKS COMMITTEE MEETING

December 28, 1966

Present: Ken Olsen, Stan Olsen, Mike Ford, Nick Mazzaresse, Jack Smith, Bob Lassen, Mort Ruderman, John Jones, Ted Johnson, Harry Mann, Win Hindle

1. Computer Utilization - (Phil Backholm, Roger Melanson, Dave Edwards, Larry Portner, Ed Gianetto, Jack Smith)

Harry Mann outlined the purpose of the computer utilization report and the results of the questionnaire concerning the report. Utilization will be reported on a 7-day, 3-shift per day basis. Downtime for lack of field service will be reported. Reports will be circulated to all in-house users to help in better utilization between users.

2. Model 35 ASR Teletype - (Mike Ford)

Mike Ford reported that the Model 35 ASR has bit dropout problems on long tapes. We have stopped selling them, but have back orders of some 25 units. Mike is holding a meeting this afternoon to determine what to do for the customers who have units or have them on order. The optimum solution is to convert the orders to a Model 35 KSR Teletype and a PC 02 Reader, and Mike will try to do this wherever possible.

3. How is SDS Selling the Sigma-2? - (Howie Painter)

Howie Painter reported that SDS is creating an illusion of bigness for Sigma-2. Both the hardware and software image they are creating is one of large capability and small price. They are also spreading information that Foxboro has dropped DEC and ordered Sigma-2. Ken pointed out that we have failed to stress many of our advantages in space advertising. Corporate public relations is a weakness which we agreed we had to overcome. Next week we will discuss these items in more detail.

4. Field Service in Europe - (Jack Shields, Ken Senior)

Because of the rapid buildup of computer installations in Europe, particularly in the U. K., we have been behind in field service staffing. Jack Shields feels that the staff is now there and merely needs more experience and training. We have to count on relatively new people for leadership. Jack has initiated a system whereby he personally is informed about an unsolved problem after several days. This should prevent long-term unsolved problems and unhappy customers.

W. R. Hindle

To: Works Committee Members

MINUTES OF WORKS COMMITTEE

December 21, 1966

Present: Ken Olsen, Stan Olsen, Pete Kaufmann, Mort Ruderman, Pat Greene, Dick Best, Nick Mazzaresse, John Jones, Ted Johnson, Harry Mann, Clayton Rix, Bob Lassen, Win Hindle, Mike Ford

1. Disc Needs - (Product Line Managers)

Nick and Stan have set 150 per year as the production rate for the 32K word disc developed by Ken Fitzgerald and Steve Lambert. We now need a schedule for getting the disc into production. Ken formed a committee of Saul Dinman, Mike Ford, Tom Stockebrand, Pete Kaufmann, Jack Smith, and Ed Harwood to review plans for getting the disc into production. Nick and Stan will work with Mort Ruderman to establish a price for this disc to give to Technicon.

Nick and Win have worked out plans for the large disc by agreeing to use the Burroughs 16 million bit disc. Nick will summarize the schedule for getting this disc into the product lines. Pricing for this disc will be done shortly, also.

Ken encouraged everyone to remember that additional engineers could be hired to speed up our in-house large disc development.

2. Bookings - (Ted Johnson)

Ted reported that we were behind our bookings goal by \$4 million thus far this Fiscal Year. He has thus revised his Fiscal Year projection to \$43 million, down from the original \$48 million. He summarized bookings by region.

It was pointed out that bookings goals are not worked out in detail between the product lines and Ted. This must be done product line by product line.

W. R. Hindle, Jr.

WRH:jeb

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digital EQUIPMENT
CORPORATION
MAYNARD, MASSACHUSETTS

To:File
cc:Committee Members

MINUTES OF WORKS COMMITTEE MEETING

December 7, 1966

Members Present: Win Hindle, Stan Olsen, Dick Best,
Bob Lassen, John Jones, Mike Ford,
Mort Ruderman, and Dave Packer.

Members Absent: Ken Olsen, Harry Mann, Nick Mazzaresse,
Pete Kaufmann, Ted Johnson, and Pat Greene.

1. Engineering Project Review (R. Best)

The committee agreed that the function of monthly reviews is to transmit information about engineering projects. Review should consist of scheduled dates for key check-points of major projects, such as:

- a. First shipment.
- b. Release to production.
- c. Prototype in operation.
- d. Software releases to customers.

2. Biomedical Market (M. Ruderman)

Mort outlined his ideas on the biomedical market. Key points were:

- a. Setting up of a distinct biomedical marketing group.
- b. Continuation and expansion of seminars.
- c. Product line representation at seminars.
- d. Improvement of application notes.
- e. Biomedical applications programming for PDP-8 and PDP-9.

A full presentation with specific proposals will be made to the committee in 2 weeks.

David W. Packer

MINUTES OF WORKS COMMITTEE MEETING

November 16, 1966

Members Present: Harry Mann, Win Hindle, Stan Olsen,
Nick Mazzaresse, Pete Kaufmann,
Dick Best, Bob Lassen, Ted Johnson,
and Dave Packer.

Members Absent: Ken Olsen, Mike Ford, John Jones,
Mort Ruderman, Pat Greene.

Guests Present: Bob Dill

1. Travel Agency (R. Dill)

Horizons Unlimited has offered to establish an office in Maynard if it can handle all DEC travel. This would free the half time girl who now handles reservations.

The committee agreed to the plan. R. Dill will give Horizons Unlimited the go ahead.

2. Expense Forms (R. Dill)

The question of whether both daily expense and weekly summary forms are needed was discussed at length. Consensus was to make no change, but T. Johnson and R. Dill will discuss the forms and make further recommendations.

A proposal to require an authorization form for all travel, independent of whether an advance is given, was rejected on the basis that unauthorized travel is not a serious problem.

W. Hindle suggested that accounting publish guidelines for advance amounts and that the authorizing manager be contacted if accounting feels excessive advances have been given.

H. Mann suggested using "On-Line" to explain our expense rules and policies, closing an obviously large communication gap.

3. Computer Handbook

All agreed the handbook was excellent. Only problem was not enough copies at the show.

4. Marketing Personnel Needs Evaluation

R. Lassen will summarize all open requisitions and give to managers. This item will be discussed at the next meeting.

5. Development Projects

Accounting will circulate lists of all discrete projects, which will provide the basis for review at the next product line managers meeting.

6. In/Out Devices

The committee agreed that responsibility for collecting and evaluating information on peripherals be formalized as proposed by K. Olsen.

Specific assignments of responsibility will be discussed at the next meeting.

7. Generator for Building 4

Postponed to a future meeting when L. Prentice is present.

David W. Packer

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MAYNARD, MASSACHUSETTS

To: File
cc: Committee Members

MINUTES OF WORKS COMMITTEE MEETING

November 2, 1966

Members Present: Ken Olsen, Harry Mann, Win Hindle, Stan Olsen, Nick Mazzaresse, Pete Kaufmann, Dick Best, Bob Lassen, Ted Johnson, Mike Ford, John Jones, Mort Ruderman, Pat Greene, and Dave Packer.

Guests Present: Stu Ogden.

Members Absent: None.

1. Displays (S.Ogden)

The 338 system will be released to production next month. To date, 3 systems have been shipped.

Display work will be centralized under one man in the near future.

Future work will probably be aimed at developing a 16" display. Development costs will be about 35K, selling price about 6K. Stu also believes better promotion about DEC's display work is needed.

Ken asked that when the display organization solidifies, the project manager present a business plan for display work to the committee.

2. Selling PDP-8 Time (M.Ford)

Mike proposed that PDP-8 time on training machines be sold for \$20/hour. Users would pick up and sign for a key from the guard to gain access to the unguarded building 11 area. Time available is always after hours, since the machines appear to be fully utilized during working hours.

H. Mann noted that we must make sure that all in-house equipment is utilized in the most effective way.

Minutes of Works Committee Meeting

November 2, 1966

3. Parking (R.Lassen)

Green stickers will be issued for the building 12 lot. This lot will be for people in buildings 11 and 12 only. Parking rules will be strictly enforced.

J. Jones suggested doubling capacity for visitors in the upper lot.

4. Harvard Business School Students

Four HBS students have approached us regarding a study. Committee reaction was favorable. Ken suggested that they concentrate on the question of staying with our current line or shifting to 16 bit machines.

J. Jones will be liaison for the group. He will bring their specific proposal to the committee for review.

David W. Packer



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MAYNARD, MASSACHUSETTS

CONFIDENTIAL

To: File
cc: Committee
Members

MINUTES OF WORKS COMMITTEE MEETING

October 26, 1966

Members Present: Ken Olsen, Harry Mann, Win Hindle,
Stan Olsen, Bob Lassen, Pat Greene,
Mort Ruderman, Mike Ford, John Jones,
Dick Best, Pete Kaufman, and Dave Packer.

Members Absent: Nick Mazzaresse and Ted Johnson.

1. Customer Alienation (M.Ford)

Two major causes of customer alienation are delivery slippages and installation of faulty equipment. Faulty equipment results from incomplete checkout or deliveries of new products in which engineering and production problems are not completely solved.

Field Service is now doing all acceptance testing. An attempt to have production perform its own acceptance checking did not succeed.

Products that have no clearly defined "home" are most susceptible to development lags and resulting customer pressures that tend to cause premature deliveries. K.Olsen commented that it is the product line's responsibility to assure that there is clear cut responsibility for every project undertaken. He suggested that were this done we would undertake fewer projects. Each project undertaken must have a firm schedule which includes evaluation by review committees.

Mike also documented and reviewed problems and solutions in the Foxboro situation discussed last week.

2. Department Sponsored Dinners (R.Lassen)

Bob proposed that dinners and parties for employees, occasionally used as a reward for completion of various jobs, not be covered by the company expense policy.

The proposal was unanimously approved.

-2-

3. Company Draft Status (R. Lassen)

Several deferments (really postponements for 1 year) have been approved. Contact with draft boards indicates that tie-in with government projects helps gain deferments, although nothing is guaranteed.

Our prime hiring problem lies in filling J. Smith's need for 50 computer production technicians. A suggestion that we attempt to utilize college-graduate, science-major housewives was made. Also, sophistication of testing procedures might enable use of less skilled help in place of technicians.

K. Olsen noted that we must identify the limiting factor in our plans, then revise budgets in all areas to conform with this factor.

4. Training Department Computers (R. Lassen)

A policy for handling customers or other individuals who want time on in-house computers should be developed.

Company people who want to provide such computer time will present a proposal for this policy.

David W. Packer

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EQUIPMENT
CORPORATION
MAYNARD, MASSACHUSETTS

To: File
cc: Committee Members

MINUTES OF WORKS COMMITTEE MEETING

October 19, 1966

Members Present: Ken Olsen, Harry Mann, Win Hindle,
Stan Olsen, John Jones, Mike Ford,
Dick Best, Bob Lassen, Mort Ruderman,
and Dave Packer.

Guests Present: Paul Chambers, Ed de Castro.

Members Absent: Nick Mazzaresse, Ted Johnson, Pat Greene.

1. Personnel (R.Lassen, P.Chambers)

Recently, most requests for draft deferments have been denied. R. Lassen will investigate deferment rules and report on actions we could take to minimize our loss from the draft.

H. Mann noted that overhead appears to be increasing. This might be caused by the relative ease of hiring clerical and administrative personnel and difficulties in finding technicians and other direct labor people.

2. Customer Alienation (M.Ford)

Some customers have been unhappy because of delivery slippages and bad delivery information. The recently adopted system for communicating delivery dates to the field should solve the information problem.

R. Wilson cited difficulties in acquiring modules for engineering changes as an example of the kind of action that alienates the customers. The specific case was discussed in detail. One conclusion was that Field Service, not the product lines, has the direct responsibility for ordering modules for modifications and performing the modification.

This topic will be re-opened again next week.

3. Foxboro Memory (E. de Castro)

Large scale memory problems with Foxboro machines are not yet totally fixed. An engineering change was required. K. Olsen noted that a complete fix was promised to Foxboro in the spring of this year.

4. Late Deliveries

J. Smith will prepare a list of all deliveries now late and those expected to be late in the future for presentation at the Manufacturing meeting.

David W. Packer

To: File
cc: Committee
Members

MINUTES OF WORKS COMMITTEE MEETING

October 5, 1966

Present Members: Ken Olsen, Harry Mann, Stan Olsen, Win Hindle, Nick Mazzaresse, Dick Best, Ted Johnson, Mort Ruderman, John Jones, Pat Greene, Mike Ford, Bob Lassen, and Dave Packer.

1. Building 12 Reception Area (J.Jordan)

Jim proposed improving the reception lobby by extending the area, refurnishing, removing the foyer, and adding an outside enclosure. Total cost would be \$6,000, of which \$2,000 is for exterior changes.

H. Mann suggested retaining the existing foyer and expanding the lobby inward. This would make exterior changes unnecessary. Jim will redesign and check with H. Mann and M. Ford.

Questions were raised about the future of this lobby. It now appears likely that the main lobby should be in building 5, considering the present layout and future space acquisitions.

2. Terms and Conditions (R.Dill)

The following points were stressed:

- a. Terms are F.O.B. Maynard. Customer owns and assumes responsibility at the point of shipping. Payment is based on shipping date. The acceptance form has no significance in terms of warranty or payment period. It is simply evidence that the equipment has been supplied as specified.
- b. Insurance. Normal carrier insurance, based on weight, is often grossly inadequate. Customers must be sure they are covered for the full value of equipment being shipped to them.
- c. Collections. Major problem is short shipments. The government requires complete shipments.

3. Sales Administration (A. Alexanian)

Al gave a description of his department's activities. Key communications are a "Q" sheet, showing delivery lead times based on production schedules, a "Bump Slip" for imperfect orders, LOI cancellation notices, and biweekly reports to field offices on delivery schedules for their customers.

4. Small Computer Shipments (N. Mazzaresse)

First quarter shipments met the plan of 5M dollars. October will be short by about 680K, because of critical module shortages in the PDP-8 line. The committee agreed that more effort was needed in module scheduling to improve the mix of output.

5. Technicians (J. Smith)

Jack cited the draft and intense demand as causes of concern in acquiring technicians. R. Lassen will prepare and deliver a report on the technician supply.

David W. Packer

DWP:tw



To: File
cc: Committee
Members

MINUTES OF WORKS COMMITTEE MEETING

September 29, 1966

Present Members: K.Olsen, W.Hindle, H.Mann, S.Olsen,
D.Best, N.Mazzarese, J.Jones, T.Johnson,
B. Lassen, M.Ruderman, M.Ford, P.Greene,
and D.Packer

1. Receptionist in Bldg. 5 (R.Lassen, H.Crouse)

Purchasing and Personnel suggested hiring a full-time receptionist for the lobby, because they have had trouble supplying their people for this job. H. Mann proposed that it would be more desirable to fill needs in the departments than to open a new requisition for a receptionist.

The consensus was to hire for Purchasing and Personnel and to continue the existing system, where these departments supply receptionists on a part time basis.

2. Teletype Deliveries (H.Crouse)

Deliveries of 50 cycle motors are far behind schedule. Teletype has run into problems with GE, who supplies the motors. GE is also likely to go on strike, compounding the problem.

R.Best and R.Newell will explore conversion of 60 cycle motors. If no complete solution is found, PDP-8 production and delivery schedules may have to be revised.

3. Telephone Strike (L.Prentice)

Strike is scheduled for October 15. All equipment moves must be made before the strike. A major decision that should be made quickly is where to put the TWX, now on the 2nd floor of Building 12.

David W. Packer

MINUTES OF WORKS COMMITTEE MEETING

August 3, 1966

Present: K. Olsen, S. Olsen, N. Mazzaresse, R. Best, J. Jones, M. Ford

1. PDP-9 Pricing (John Jones)

John proposed a price of \$35,000 for the basic PDP-9, based on comparison with competitive equipment (Sigma 2, ASI 6130 and CDC 1700) and on manufacturing costs. "Base" price, i.e., that quoted for standard system is higher than the SDS and CDC machines, but "normal" price, adjusted for 8K memory, multiply/divide, and reader-punch is lower (38K vs. 48-49K for the competitive systems).

The markup over manufacturing cost is estimated at 2.7, assuming an average discount level of 5.2%. John believes a salesman capable of selling 10-12/yr. at the \$35,000 price.

The price proposal was accepted and will be announced this week.

D. W. Packer

R. Best

To: Committee Members

COMPANY CONFIDENTIAL

MINUTES OF WORKS COMMITTEE MEETING

June 8, 1966

1. 570 Tape Transport

Eleven transports are now uncommitted. Nick Mazzaresse and Win Hindle will review the 570 status and recommend a course of action. Ken Olsen stressed the need for product line responsibility for this type of item.

2. New Tape Transport

The transport will be a single capstan 75 ips, 800 bpi device in a standard PDP-9 cabinet. Rough estimate of manufacturing cost is \$3500.

Schedule calls for prototype in late Fall, production in July 1967.

Evaluation of the Datamec transport is continuing. The choice of a tape unit will be made after the in-house prototype is running.

The tape situation will be reviewed again next week. We should decide when a new tape is required, how many will be needed, and whether the 570 should be sold in the interim.

Jack Shields will estimate the cost of an additional transport in the line.

3. Master Plan for Technicians - (Bob Lassen)

Technician need is 205 in the next 12 months. The plan for recruiting this number is:

Already hired	50
Trade Schools	60
Field Trips	24
Regional Office	51
Local Advertising	20

Personnel will need two more recruiters in-house to accomplish this objective.

Half of those hired will need training. Field service is developing a training plan.

Personnel will lay out technician allocation by department and will make regular status reports on hiring results.

4. Marketing the PDP-8 Family - (Howie Painter)

A plan for introducing the 8 Family was discussed. Initial focus will be on OEM customers. Sales agents for special markets (high schools, calculators) are being explored.

Ken Olsen stressed that the start of this program should not be delayed. The Disc-8 will not be included in the Family at first, because pricing cannot be done yet.

5. Softball - (Bob Lassen)

The softball league will receive \$200 for field rental.

MINUTES OF WORKS COMMITTEE MEETING

June 1, 1966

Members: Ken Olsen, Win Hindle, Harry Mann, Stan Olsen, Dick Best, Bob Lassen, Ted Johnson, Nick Mazzaresse, John Jones, Mike Ford, Mort Ruderman, Pat Greene

1. Industrial Design - (Jim Jordan)

Aims of our industrial design program are: a) to be involved in all products at an early date, b) schedule and budget activities, c) design and produce a reference manual, d) review product mix and update continuing products.

We will suggest that our consultants make a proposal for trade show work.

Win Hindle suggested that the design department should put more emphasis on the cost of new designs.

2. Evening Meeting - (Ken Olsen)

The agenda will be the review of the following projects:

LINC-8	Ceramic Module
PDP-9	Strates
PDP-10	Semiconductors
PDP-11	Tape Transport
PMA-8	Disc

A pert chart for each project should be submitted. Ken will keep a master schedule on his board.

3. DATEL System - (Ted Johnson)

Ted proposed a high speed (600 wpm) line to England. Cost is \$1300/month, compared to \$2200/month at present. The proposal was approved.

4. Guard Rates - (Harry Mann)

Cost is up \$.25 an hour. Harry Mann and Loren Prentice are reviewing security to see if we can use less guard hours.

5. Travel - (Harry Mann)

Some unused tickets are not being returned. Instructions will be put in newsletters. Harry Mann will look into the possibility of putting a full time travel agent here.

6. Warranty and Field Service - (Mike Ford)

Warranty is running about 1%, as opposed to 1 1/2% budgeted. Field Service people are good, but are too few in number. Service personnel should actively sell service contracts to customers.

Works Committee Minutes

June 1, 1966

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7. PDP-9 Schedule - (Nick Mazzaresse)

Nick reviewed the PDP-9 progress versus the original schedule. First delivery is about three months later than planned, with software lagging by six months.

Ken emphasized that the lesson learned here is that schedules should be actively reviewed by a committee.

8. Committees - (Ken Olsen)

An Engineering committee is being set up. Also planned is a Personnel committee which will propose personnel policies, bring personnel problems to management's attention, and discuss managerial responsibilities. It will alternate with Works Committee. Membership will be permanent members and revolving members.

Ted Johnson recommended another committee to review recruiting progress.

DWP:ecc

R. Best

To: Committee Members

COMPANY CONFIDENTIAL

MINUTES OF WORKS COMMITTEE

May 25, 1966

Present: Ken Olsen, Harry Mann, Win Hindle, Bob Lassen, Nick
Mazzarese, Gordon Bell

1. Employment Advertising - (Ken Gold)

Jonah Kalb, from our advertising agency, reported on an employment advertising campaign now being planned. The theme, "It takes a big man to make small computers" and woodcut illustrations will provide an umbrella for both general and specific ads. Appeal is aimed at junior engineers with three to six years experience.

Committee comments were:

- don't bypass more senior engineers, often available
- avoid overplay of "small" emphasis; may discourage some potential candidates (raise definition of small 100K to 200K)
- more emphasis on programmers; ads appear largely hardware oriented

2. Status of PDP-9 Software - (Len Hantman)

The programming schedule has slipped because of problems in developing system specifications. The original completion date of March 1967 cannot be met - July 1967 is now the earliest possible date for achieving original goals.

Lack of in-house programmers will necessitate more work by vendors.

A revised detail schedule will be presented in about one month.

Discussion of the problem in acquiring programming capability led to the idea of exploring centralizing programming efforts. Len Hantman, Larry Portner, and Henry Burkhardt will meet to discuss this idea and to assign priorities to jobs planned throughout the Company.

MINUTES OF WORKS COMMITTEE

May 17, 1966

Present: Ken Olsen, Harry Mann, Win Hindle, Stan Olsen, Gordon Bell, Nick
Mazzarese, Ted Johnson, Bob Lassen, Pat Greene, Dick Best

1. Committee Meetings - (Ken Olsen)

All committees will be reviewed and membership lists published. Committees are:

Product Line Managers	(Monday)
Components	(Tuesday)
Works	(Wednesday)
Manufacturing	(Friday)

An engineering committee is also needed, and will be set up.

2. PDP-9 Status - (John Jones)

A running PDP-9 will be shown at WESCON in August. Basic system deliveries start in December, 1966 with progression to a full set of peripherals. Software development is delayed for lack of system specifications to send to programming vendors.

3. Quality Control Procedures

Small Computers: An active QC force exists in the Production Engineering group. Final acceptance will be done by the product line. Internal manufacturing checks will be specified by engineering.

Large Computers: A QC inspector, reporting to the group manager, will be set up.

Modules: Will be reported June 1, 1966.

4. Digital Test Systems - (Pat Greene)

Sales this year total 834K, with 13% profit before taxes. Engineering costs are higher than planned (19% of sales) because of current driver problems.

Europe appears to be a potentially good market, with 500K projected for next year. Adding field service and marketing capability to Europe is being considered. Total FY 1967 sales are projected at 1300K.

The question of withdrawing from marginal product areas was considered. Of key interest was the question of how to determine when resources should be shifted from one area to another.

5. OEM Discount Schedule

Product Line Managers and Ted Johnson will propose a discount schedule that would be most desirable for marketing purposes. Legal considerations will not enter the proposal, but will be evaluated as a second step.

R. Best

COMPANY CONFIDENTIAL

WORKS COMMITTEE MEETING

May 11, 1966

Present: Win Hindle, Harry Mann, Dick Best, Gordon Bell, Ted Johnson, Bob Lassen, Nick Mazzaresse, Jack Atwood, Dave Packer

1. Short Order Modules - (Cy Kendrick)

Cy suggested that we evaluate setting up a separate section to produce small quantities of rush order modules. It was decided to wait to see how new procedures for handling these items work out before considering a change.

2. DECTape Deliveries - (Jack Smith)

We are adding manpower to DECTape production to reduce backlog. Delivery now is over four months. Normal production rate will be about 6/month, requiring three checkout technicians.

Dave Packer and Frank Kalwell will explore methods of improving information given to production.

Bob Lassen will report on total technician requirements next week.

3. University of Chicago - (Bill Long)

Bill described an order that was placed and accepted without adequate information and specifications.

Nick Mazzaresse suggested that we reject orders that violate standard procedures for special devices. Ted Johnson will remind Sales Force about the existing procedures.

4. Advertising Proposal - (Jack Atwood)

It was proposed that we combine five types of devices into a PDP-8 family. Specific devices are:

- "Great-8" -- Standard PDP-8
- "Big-8" -- PDP-8 with tape and DECTape
- "LINC-8" --
- "Serial-8" -- The PDP-10
- "Disk-8" -- PDP-10 with disk

John Jones suggested adding the "Display-8" -- 338. A joint marketing team (Large Computers, Small Computers, and Modules) will evaluate.

5. Authorized List - (Harry Mann)

It was decided to develop two authorized lists; a small list authorizing withdrawal of materials and larger list for authorizing visitors into the plant.

MINUTES OF WORKS COMMITTEE MEETING

April 13, 1966

Present: K. Olsen, S. Olsen, W. Hindle, N. Mazzaresse, J. Atwood,
D. Best, G. Bell, P. Greene, T. Johnson, H. Mann, R. Lassen,
and D. Packer

1. La Petite Auberge (H. Mann)

Currently we pay \$100/month for exclusive use of our room at the restaurant. Usage declined to 22 bills in January.

It was decided to terminate our agreement with the restaurant. We will explore establishing better luncheon arrangements in the plant. It was suggested that we sell existing furniture to La Petite Auberge.

2. Commissions to DEC Foreign Subsidiaries

The problems of handling sales made by representatives, paying commissions, and crediting offices were discussed. H. Mann will document current procedures in this area.

3. Bonded Warehouse (K. Olsen)

A proposal to put a stock of modules in a bonded warehouse in Europe was approved. Cologne appears to be a good location. S. Olsen will determine the quantity and types to be moved. T. Johnson will set up the operation.

4. Telephones, Xerox's, Expense Accounts, and Secretary Manual

a) Telephones

K. Olsen will request list of required unrestricted phones in each department. H. Mann will review. Goal is to substantially reduce the number of such phones and unnecessary equipment.

b) Xerox's

A log will be kept on each machine. Machines will be locked at night. We will evaluate other copying devices.

c) Expense Accounts

T. Johnson has developed a policy. It will be reviewed next week. Tipping guidelines will be included.

d) Secretary Manual

Elsa has developed a manual. J. Atwood will review and distribute.

5. Exchange Students (T. Johnson)

A proposal to participate in an exchange program that could yield future employees overseas was approved. The program involves no commitment to hire.

DWP:ncs

David W. Packer

MINUTES OF WORKS COMMITTEE MEETING

Evening
April 11, 1966

Present: K. Olsen, S. Olsen, N. Mazzaresse, G. Bell, R. Best,
H. Mann, T. Johnson, J. Jones, L. Prentice, E. de Castro,
A. Kotok, K. Fitzgerald, P. Greene, R. Lassen and W. Hindle.

1. Disc (M. Ford)

Proposed:

- a) Fixed head, 25 msec. access time, 500K word storage disc.
- b) Buy F-6 Data Disc and interface to PDP-8.
- c) Schedule - design, build, test and evaluate - complete Oct. 15. and decide whether to offer. Probable sales price with control \$17-20K.

2. Disc Module (K. Fitzgerald)

Proposed:

- a) Fixed head, 25 msec access time, 50K word capacity.
- b) Schedule began in March, expect to release to production in August.

3. Tape Transport (J. Jones)

Proposed:

- a) Life test major components on DEC unit for 3-4 months at cost of \$28,000.
- b) At the same time, evaluate two Datamec 3030's at cost of \$10,000.
- c) If we decide to build our own, cost for continued development is \$120K and development time 8 months. Manufacturing cost would be \$5K and sales price \$15K. Don't currently have people to do this. Gross profit per year expected \$600K.
- d) If we decide to go to Datamec 3030, cost for continued development is \$20,000 and time is 4 months. Sales price would be \$20K. Gross profit per year expected \$460K. No new people needed for this project.
- e) At decision point in 4-5 months (Sept. '66), we should decide which path to choose.

W. R. Hindle, Jr.

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COMPANY CONFIDENTIAL

MINUTES OF WORKS COMMITTEE MEETING

April 6, 1966

Present: S. Olsen, H. Mann, R. Best, P. Greene, T. Johnson, J. Atwood,
N. Mazzaresse, R. Lassen, and W. Hindle.

1. Heat Chamber (L. Prentice and P. Backholm)

A portable chamber for heat testing tape units, discs and computer prototypes was proposed and accepted. Cost will be \$855.

2. March and April Shipments (H. Mann)

In March, total shipments were \$2,229,400, making the 3rd quarter total billings \$5,759,500. This was lower than the January 1st projection of 3rd quarter billings of \$6,608,000. The projected shipments for the 4th quarter totalled \$9,098,000, a considerable increase over the 3rd quarter rate. Harry pointed out this substantial rise in deliveries and questioned our ability to do it. The Product Line Managers agreed we could meet this goal.

3. Benefits (R. Lassen)

Bob will announce the pension plan, new vacation plan, and the new tuition refund plan within a week. It was decided that the tuition refund plan would be increased from \$300 to \$450 per employee per year and that we would refund 50% of the tuition for a grade of C.

W. R. Hindle, Jr.

WRHj:ncs

COMPANY CONFIDENTIAL

MINUTES OF WORKS COMMITTEE MEETING

March 30, 1966

Present: K. Olsen, S. Olsen, T. Johnson, N. Mazzaresse, H. Mann,
P. Greene, W. Hindle, D. Best, G. Bell, J. Atwood, R. Lassen,
and D. Packer

1. Quality Control Function (K. Olsen)

Ken proposed reorganizing the Q.C. function to put prime responsibility in the hands of manufacturing areas. The central Q.C. would become an advisory staff function. Giving responsibility for incoming inspection to Purchasing was also suggested.

No action was taken on the proposal.

2. April 30th Audit (H. Mann)

A complete audit will be taken at the end of April. Although no decision to change the Fiscal Year has been made, information is being gathered to make this possible should the decision be made.

Harry stressed that all areas should begin preparing for the physical inventory in April.

3. Business Computer Recommendation (D. Packer)

Dave recommended that the company rent a Burroughs B300 computer system with card reader, card punch, line printer, disk storage, and a tape unit. Cost will be almost \$4300/month. Total data processing costs will be \$1000-1500/mo. greater than at present. However, the new equipment will increase our data processing capability substantially, enabling better and faster reporting and increased control.

The recommendation was approved.

4. New Socket (H. Crouse)

Henry outlined cost and availability of new socket possibilities. Henry and R. Best will develop and circulate a specific proposal. The question of a socket for the ceramic module will be included in the proposal.

5. Report on Inventory (H. Crouse and D. Packer)

Module production projections have been far in excess of actual requirements. This has resulted in a buildup of raw materials above that required. Controls on purchase commitments have been weak, so that commitments in excess of revised requirements have not been spotted soon enough for effective corrective action.

Recommended were:

- a) More effort in sales forecasting and production planning.
- b) Effective controls on purchase commitments.

H. Mann suggested that our inventory planning should include less stocking of finished items in areas, like modules, where cycle times are short.

6. Surplus Components (H. Crouse)

Henry reported \$34,000 of slow moving components. He is exploring ways to dispose of excesses.

Also noted was the large number of precision resistors that we stock. Steps are being taken to develop an engineering design list of approved components. Such a list would help to limit stocking and use of large numbers of similar items.

Ken suggested an analysis of the real cost of carrying one standard item as opposed to the cost of carrying several special purpose items.

7. Contribution to Northeastern (W. Hindle)

Northeastern wants a donation of all or a part of a 53K PDP-8 system. The system would not be accessible to many students, so is not beneficial from our point of view.

It was suggested that we donate a PDP-8 for the Engineering Department's use. T. Johnson proposed contributing lab kits instead of computers.

H. Mann noted that our past contributions give us the maximum tax relief for the next several years. Ken said we should develop a contribution program designed to take advantage of tax relief and provide maximum visibility of our equipment.

No decision was reached on Northeastern. Follow up will be handled by the Northeastern Sales Office.

8. Company Travel Arrangements (T. Johnson)

Travel is now being handled by a part time girl without adequate supervision. Ted will take over supervision of this function. In the future, we will hire a full time receptionist who will be responsible for travel and travel agency evaluation.

9. Foreign Patents (R. Best)

No policy now exists for foreign patents. H. Mann, T. Johnson, and R. Best will develop a policy.

COMPANY CONFIDENTIAL

MINUTES OF WORKS COMMITTEE MEETING

March 16, 1966

Present: K. Olsen, S. Olsen, H. Anderson, W. Hindle, J. Atwood,
N. Mazzaresse, H. Mann, G. Bell, R. Best, R. Lassen, P. Greene
and D. Packer

1. Switchboard Relocation (S.Olsen)

Stan proposed moving the Building 12 operators to a closed area and establishing a receptionist in the lobby. The plan will likely add one girl to the effort. Moving and building costs are estimated at \$700. The proposal was accepted.

Also cited for future consideration was moving TWX, Telex, and the Mail Room to the same area, consolidating all communications activity.

2. Review of Inventory (H. Mann)

Inventories rose to over \$6 million in February. Harry expressed concern over our position, especially critical in light of current economic conditions which are straining the nation's credit resources.

The February increase occurred in raw materials and jobs in process.

Stock levels in each inventory were reviewed. Areas where excesses appear to be present will be reviewed and corrective action taken.

3. Module Machine (R. Best)

Cost of the new module development program are estimated at 480K over the next 5 quarters. Of this, 93K is the consulting fee of John Hitch, partially in cash and partially in finished modules. Considering sales price of the modules, the total fee is 250K.

The discussion centered about two points. First, the concept of the ceramic module; there was broad agreement it is worth pursuing.

Second is Hitch's role in the project. He is ostensibly selling a process for 250K. We are, however, not sure he knows the process. Further, his contract specifies only that he supply information.

Several major points regarding Hitch are:

- We are unable to examine his credentials, to examine the legality of using his information.
- He is willing to share some risk for success, but only for more money.
- The contract may be fraudulent from the point of view of the government. If so, we could lose badly, for there is no fiscal backing to the activities in which he is involved.

It was decided to have R. Cesari meet with Hitch and recommend a course of action. Further steps may include a patent search and reference check.

DWP:ncs

Dave Packer

MINUTES OF WORKS COMMITTEE MEETING

March 14, 1966

Present: K. Olsen, W. Hindle, S. Olsen, N. Mazzaresse, T. Johnson, J. Atwood, G. Bell, R. Best, H. Mann, R. Lassen, P. Greene, and D. Packer

1. Vacation Policy

Various vacation policies were discussed. Sentiment was largely in favor of 1 additional day per year, up to 15 days total, after service of 5 years.

Scheduling of vacations was stressed to prevent unbalances during the summer months.

The reaction to allowing trade-offs between vacation days and money was negative.

R. Lassen will formalize the new policy .

2. Central Engineering Budgets

Initial budgets for central engineering projects were developed, as shown below:

<u>Project</u>	<u>Current Annual \$K</u>	<u>Additional Annual \$K</u>	<u>Total</u>
Basic Circuit Design	\$	\$ 50	\$ 50
DECtape and Paper Tape	50		50
IBM Tape	75	125	200
Disks (Small for Stan, larger for computers)	40	80	120
Memory			
Semi conductors	110	20	130
Strates	110		110
Module Machine	240	250	490
Displays	36	50	86
A-D	50		50
			<u>\$1,286</u>

TO: File
cc: Committee Members

MINUTES OF WORKS COMMITTEE MEETING

March 9, 1966

Present: K. Olsen, H. Anderson, W. Hindle, S. Olsen, T. Johnson,
R. Best, G. Bell, J. Atwood, P. Greene, H. Mann, R. Lassen,
M. Sandler and D. Packer.

1. Transfer Policy (K. Olsen)

Ken proposed a policy of allowing all interdepartmental transfers after a maximum 4 month period. R. Lassen will work out details of such a policy and present it to the committee.

2. Strategic Materials (H. Crouse)

A recommendation to increase stock levels of wire and transformers was accepted.

It was also suggested that we prepare for possible tighter controls by evaluating the amount of our business that carries DO ratings.

3. Long Term Plans (P. Greene)

The digital Test operation is now operating at about 1 million annual sales with a 14% profit margin. Strategy is to design and market standard products.

Three engineers have left the group; main personnel need is engineering replacements or a marketing man to do sales work.

Pat proposed consolidating memory design within the test group. He will attempt to sell this concept to the product lines.

Longer range plans include developing the computer test market, with various types of computer controlled test equipment.

Concern was expressed over the possible over-extension of the group, should it take on memory design, test, and product marketing.

4. Wire Wrap (J. Smith)

J. Smith proposed ordering a wire wrap machine at a cost of \$178,000. He estimates annual savings from the investment to be over \$187,000 before tax.

H. Mann pointed to the need for a capital equipment budget, to use as a basis for evaluating capital expenditures. K. Olsen said we will begin developing such a budget immediately.

Decision on wire wrap was to place a Letter of Intent now, and to make a final decision before the 3 month cancellation period expires.

5. Manufacturing Reports (D. Packer)

A program of consolidating information about manufacturing requirements and performance is underway. First objective is to develop a set of reports for management evaluation of manufacturing operations.

6. Night Meeting

Agenda for Meeting next Monday is:

- a) 1st Pass at Fiscal 1967 budgets.
- b) Capital Expenditure Budget.

New budgets will be presented to the Board the week of March 21st.

D. W. Packer

DWP:ncs

MINUTES OF WORKS COMMITTEE MEETING

February 16, 1966

Present: K. Olsen, W. Hindle, S. Olsen, N. Mazzaresse, T. Johnson,
J. Atwood, G. Bell, R. Best, H. Mann, M. Sandler, R. Lassen,
P. Greene and D. Packer

1. Public Relations (J. Nangle)

Joe reported on public relations activities, designed to reach employees (On Line, outings), customers (trade press), and the community.

Suggested were:

- a. Permanent displays and demonstrations for plant tours.
- b. A Career Day for high school students.
- c. A new periodical for customers and friends. DECUS was proposed as an existing publication that might be expanded to meet this need.
- d. Opinion research to evaluate PR work.

2. Maintenance (J. Culkins)

John reported on maintenance work. He proposed establishing coordinates for easy location of plant areas. Also proposed, and enthusiastically accepted, was his suggestion that the flag be displayed at the plant entrance.

3. Production D (R. Maxcy)

The D area is now producing about 100 power supplies per week. A PDP-8 will be used to check out these items.

Also being built are logic labs. T. Johnson suggested that at least 200 be turned out in the next few months, to satisfy customer demand and to use as demonstrators and give-aways.

4. Metal Shops (R. Richardson)

The shop has been changed from a specialist type of work flow to an operator concept. Individuals are rotated among various operating jobs.

Dick suggested:

- a. Better sales forecasting to aid in shop work planning.
- b. Setting up a prototype area.
- c. Fomal approval of budgets, followed by freedom to operate within the budget.

-2-

4. Metal Shops (R. Richardson) – Continued

- d. Design review of new devices, to improve metal parts design.

5. Production B (R. Belden)

B now has capacity for about 6000 modules/week, well above present demand.

Current problems are:

- a. Failure rate (20%). Half caused by assembly errors, half by component failures.
- b. Engineering changes. Need better methods of handling and performing initial tests.

6. Company Benefits (H. Mann)

Benefits include:

- a. Life Insurance, basic and supplementary.
- b. Medical Insurance.
- c. Accident and Sickness Insurance.
- d. Workmen's Compensation coverage
- e. Travel Insurance (\$100,000 on all employees)

We are currently exploring long term disability coverage and a pension plan.

7. Logotype (J. Atwood)

A proposal to reconsider decision to maintain old logotype was rejected by K. Olsen.

8. Personnel (R. Lassen)

Bob outlined changes he is considering in his department. They include:

- a. Setting up an hourly personnel section under P. Chambers.
- b. Hiring an interviewer.
- c. Hiring a senior man to direct professional personnel efforts.

David W. Packer

MINUTES OF WORKS COMMITTEE MEETING

February 9, 1966

Present: K. Olsen, H. Anderson, W. Hindle, S. Olsen, T. Johnson, J. Atwood, H. Mann, R. Lassen, M. Sandler, R. Best, G. Bell, P. Greene and D. Packer.

1. Strate Production (T. Stockebrand)

Strate production accomplishments and goals were described. Current rate is 6,000 3v's/month, with 10,000/mo. expected by April. Costs now are close to discrete costs, with \$.56 cost anticipated by July. With additional volume cost could reach \$.23. The major project for the next few months is to develop controls over strate production.

2. On Line (K. Gold)

Recent aims for On Line have included an increase in employee features, more pages and pictures, and stress on benefits and product quality.

On Line is being used as a recruiting and public relations tool, through copies sent to local officials, schools, and libraries.

Good cooperation has been evident in the plant and domestic offices; only weakness is in several foreign offices.

Improvements suggested were more stress on fringe benefits, more participation from employees, a "President's Column," and some type of Award Program for recognition of individual accomplishment.

Ken was commended for his work on the paper and his presentation to the committee.

3. Morale Considerations

A lengthy discussion on morale and supervisory problems resulted in the following ideas:

- a. Each committee member should prepare a job description, specifying functional aspects of his position.
- b. We should institute management training at both the Works Committee level and for young managers.
- c. The meeting next Monday (February 14) night will be devoted to this general topic.

- d. We will explore use of an industrial psychologist to analyze morale problems.

4. Review of Telephone Procedures

An "exception list" of people who can be paged for outside calls was approved.

5. Personnel Projects

R. Lassen will prepare a list and schedule for all personnel projects.

6. Hourly Pay Scales (R. Lassen)

Technician pay appears to be about 10% below industry standards. We will revise pay scales to be up to the standards by June, 1966.

Dave Packer

DWP:ncs

MINUTES OF WORKS COMMITTEE MEETING

February 2, 1966

Present: K. Olsen, H. Anderson, S. Olsen, W. Hindle,
N. Mazzaresse, J. Atwood, G. Bell, ~~R. Best~~,
R. Lassen, P. Greene, M. Sandler, and D. Packer.

1. Pricing the LINC-8 (N. Mazzaresse, M. Ruderman)

The prototype machine is running, with first deliveries planned for early July, 1966. Promotion consists of press releases, space ads, attendance at the Federation show in April, and regional seminars. Documentation will all go to press this month.

Mort proposed a price of \$38.5K. The proposal was accepted. Initial announcement may be "priced under \$40K". Volume at this price is projected at 30-50 machines/year.

Extensive discussion of LINC potential as a general laboratory instrument, as opposed to a purely biomedical system, resulted in formation of a committee to develop a proposal for plans in this area. Members are N. Mazzaresse, H. Anderson, G. Bell, and M. Ruderman. Their report will be presented next week.

2. History of the 570 Tape Transport (R. Best)

The 570 history was reviewed to ascertain what mistakes were made and what should be done with units still in the house.

Mistakes appeared to be:

- a. No evaluation of first production units, although the "handmade" prototype was thoroughly evaluated.
- b. Units never reserved solely for testing because of intense shipping pressures.

It was agreed that standard procedures for procuring, inspecting, and manufacturing all mechanical devices should be developed and adhered to. Roland Boisvert will present present procedures for the 570's to the committee next week.

3. Night Meeting

Will be Monday, February 14. Topic will be long term corporate plans.

4. In-House Decade Use (C. Stein, R. Melanson)

Decade in-house use will be started on a trial basis in March 1966, with full implementation by June 1966. Additional development expense will be about \$7,600 (for a total cost of \$38,000). Also, a plotter must be acquired at a cost of \$18,000. Savings from the system are estimated to be 5 draftsmen the first year and an additional 3-5 in the second year (at the present workload). The system will require one programmer part-time for maintenance.

Future possibilities include a wire list program to produce wire lists and Gardner Denver cards from computer stored schematics. Gordon is looking into developing this part of the system on the PDP-6.

D. W. Packer

DWP:ncs

MINUTES OF WORKS COMMITTEE MEETINGJanuary 19, 1966

Present: K. Olsen, H. Anderson, S. Olsen, W. Hindle, T. Johnson,
N. Mazzaresse, J. Atwood, G. Bell, R. ~~Best~~, M. Sandler,
H. Mann, P. Greene, R. Lassen and D. Packer

1. Display Program (C. Stein)

Decade system development has been held back by hardware problems since FJCC showing.

The current schedule is to finish system by 1 March. Further possibilities are to use system for wire list work, which would eliminate card operations, and to be capable of developing hard copy.

Works Committee will consider internal economics of system in two weeks. Chuck also suggested a demonstration for the committee following this presentation.

2. Computer Aided Design Symposium (H. Anderson)

The decision as to attendance at this symposium (New Orleans in May, 1966) was left with N. Mazzaresse. Cost is \$500.00 for registration.

3. Strates and Modules (R. Best)

We have hired a consultant to aid in a development program for a new type of module. If accepted, the program is scheduled for completion by January 1967, at a total cost of \$467,000 (including capital equipment).

The new program would have no immediate effect on existing plans for strate development.

Organization for the project consists of R. Best, G. Wood, and J. Hitch (consultant). W. Hindle expressed concern over staffing plans for the development work. It was suggested that formal staff requirements be prepared.

Two review points for the project exist, in March and May, 1966. We are now committed only through March. Major expenditures occur after the May review point.

4. Logotype Results

Survey results showed overwhelming preference for our existing logotype. Thus, we will not shift to the new logo, as previously planned.

5. ACM Membership

Decision was not to renew our ACM membership at annual cost of \$500.

6. Telephones (T. Johnson)

Lists of proposed equipment and outside line changes were distributed. Comments on these changes should be sent to Ted.

Several committee members expressed concern over the morale effects of immediate implementation of proposed changes, in light of organizational changes and tightening of controls over the past half year. It was agreed to delay implementation for some time.

7. Report on Inventory (H. Mann)

Inventory increased again in December. Greatest increases were in finished goods (modules) and raw materials. Inventory reports will be out by the end of the week.

8. Data Processing (D. Packer)

The PDP-6, IBM, and Honeywell equipment are being evaluated for in-house data processing work. A proposal for such equipment is planned for March, 1966.

9. Monthly Statements (H. Mann)

December operating results were summarized. Monthly performance exceeded the forecast, although year to date results are below that originally planned. Foreign operations appear to be improving.

Dave W. Packer

DWP:ncs

MINUTES OF WORKS COMMITTEE MEETING

January 26, 1966

Present: K. Olsen, H. Anderson, W. Hindle, S. Olsen, N. Mazzaresse, G. Bell, R. Best, J. Atwood, M. Sandler, R. Lassen, P. Greene, and D. Packer.

1. Northeast Sales Report (G. Rice)

George cited five areas for sales activity out of his office: Foxboro, Bedford, Charles River complex (MIT, Harvard, Mass. General, BBN), Connecticut, and Rochester. Foxboro is the largest now but is attempting to develop internal digital capability. New accounts totaled 65 in 1964 and 92 in 1965, 163 computers have been sold in the region, 86 PDP-8's and 18 PDP-7's.

The problem of over-involvement in plant business by Northeast sales people was discussed at length. Plans are to cut plant time from its current level of 25% to about 5%. The office desires to be treated like a sales office if it is to be evaluated as one.

The office's current location is not desirable for sales work. A new office location on Route 128 has been explored. A specific proposal for the office move will be made within two weeks. Plans call for a staff of 35 people, 24 of whom are Field Service. Current staff totals 10.

Cited as development needs felt by salesmen were:

- a) A disk
- b) Software ability to time share between real time and other applications.

2. Shipment Follow Up (K. Olsen)

Shipments in the first three weeks of January come to less than 40% of the month's budget. However, estimates gathered at the meeting indicated total shipments would be close to that budgeted.

3. Fire Prevention Plan (R. Pate)

Immediate implementation of a fire evacuation plan, including appointment of wardens, exit route maps and signs was approved. Total cost for materials will be about \$515.

R. Pate will follow up on other aspects to a good fire program, including fire drills, extinguishers, lighting, and a DEC fire brigade. Specific proposals on these items will be brought to the committee as they are prepared.

MINUTES OF WORKS COMMITTEE MEETING

January 19, 1966

Present: K. Olsen, H. Anderson, S. Olsen, W. Hindle, T. Johnson,
N. Mazzarese, J. Atwood, G. Bell, R. Best, M. Sandler,
H. Mann, P. Greene, R. Lassen and D. Packer

1. Display Program (C. Stein)

Decade system development has been held back by hardware problems since FJCC showing.

The current schedule is to finish system by 1 March. Further possibilities are to use system for wire list work, which would eliminate card operations, and to be capable of developing hard copy.

Works Committee will consider internal economics of system in two weeks. Chuck also suggested a demonstration for the committee following this presentation.

2. Computer Aided Design Symposium (H. Anderson)

The decision as to attendance at this symposium (New Orleans in May, 1966) was left with N. Mazzarese. Cost is \$500.00 for registration.

3. Strates and Modules (R. Best)

We have hired a consultant to aid in a development program for a new type of module. If accepted, the program is scheduled for completion by January 1967, at a total cost of \$467,000 (including capital equipment).

The new program would have no immediate effect on existing plans for strate development.

Organization for the project consists of R. Best, G. Wood, and J. Hitch (consultant). W. Hindle expressed concern over staffing plans for the development work. It was suggested that formal staff requirements be prepared.

Two review points for the project exist, in March and May, 1966. We are now committed only through March. Major expenditures occur after the May review point.

4. Logotype Results

Survey results showed overwhelming preference for our existing logotype. Thus, we will not shift to the new logo, as previously planned.

5. ACM Membership

Decision was not to renew our ACM membership at annual cost of \$500.

6. Telephones (T. Johnson)

Lists of proposed equipment and outside line changes were distributed. Comments on these changes should be sent to Ted.

Several committee members expressed concern over the morale effects of immediate implementation of proposed changes, in light of organizational changes and tightening of controls over the past half year. It was agreed to delay implementation for some time.

7. Report on Inventory (H. Mann)

Inventory increased again in December. Greatest increases were in finished goods (modules) and raw materials. Inventory reports will be out by the end of the week.

8. Data Processing (D. Packer)

The PDP-6, IBM, and Honeywell equipment are being evaluated for in-house data processing work. A proposal for such equipment is planned for March, 1966.

9. Monthly Statements (H. Mann)

December operating results were summarized. Monthly performance exceeded the forecast, although year to date results are below that originally planned. Foreign operations appear to be improving.

Dave W. Packer

DWP:ncs

MINUTES OF WORKS COMMITTEE MEETING

January 12, 1966

Present: K. Olsen, H. Anderson, S. Olsen, W. Hindle, N. Mazzaresse, T. Johnson, J. Atwood, G. Bell, R. Lassen, H. Mann, P. Greene, M. Sandler and D. Packer.

1. Analysis of Inventory Buildup (H. Mann)

An analysis of our current inventory plus a theoretical goal for each inventory was presented (attached). Current inventory levels are without exception for higher than the goal, indicating great potential for reduction without blocking the work flow.

H. Mann noted that the cost of carrying stock probably runs close to 20% of the stock value per year. Various methods of improved stock control are being explored.

Each Product Line will propose means of achieving inventory goals.

2. Treatment of Variances (H. Mann)

A proposal to merge development and sales expense overhead variances into the appropriate line on the P and L reports was accepted. Also, the difference between actual and budgeted expenses will be included on the statements.

W. Hindle proposed that allocation of manufacturing variances be based on most recent, rather than the initial, budget. Product Line Managers will consider this proposal and present their decision to the Committee next week.

3. Small Computer Sales Plan (J. Jones)A. PDP-7

First half bookings totaled 39; 45 had been projected. Reason was largely that sales effort ran below that budgeted. Bookings for second half are expected to total 30 machines. Our major competitive advantage is delivery, now running at 7 months.

The PDP-7X will be introduced at WESCON in August, 1966. The machine will be sold like PDP-8's, aimed at OEM buyers.

T. Johnson suggested earlier introduction, to take advantage of end-of-fiscal-year-buying. Selective introduction, to key prospects, could be made before general announcements.

Prime development needs are a disk and 7 and 9 channel tape.

B. PDP-8

First half bookings totaled 176; 110 had been projected. Sales effort is now running at about the budgeted rate of 14 men. Second half bookings will range between 110-210 depending on delivery. Sales effort will be boosted to 18 men, with space advertising starting in February.

No effective competition now exists for the PDP-8. We are planning no major design changes for about 2 years.

The OEM market predominates; there is a strong need for a contract administrator to handle post P.O. aspects of this business.

Pros and cons of GSA listing were discussed. No conclusions were reached. Topic will be reopened later.

4. Telephones (T. Johnson)

Paging for outside calls will be stopped Monday, January 17th. A system of pre-scheduled phone contacts with field offices will also be started.

David W. Packer

DWP:ncs

MINUTES OF WORKS COMMITTEE MEETING

January 4, 1966

Present: K. Olsen, H. Anderson, S. Olsen, W. Hindle, T. Johnson,
N. Mazzaresse, H. Mann, M. Sandler, P. Greene, R. Best,
G. Bell, J. Atwood, R. Lassen and D. Packer

1. Implementation of New Group Life Insurance Plan (R. Lassen)

R. Lassen proposed that we discontinue turning back "good experience" dividends on group insurance so that a hedge for bad years can be built. He suggested this plan be implemented at the time when long term disability coverage is added to the group policy to minimize adverse employee reaction.

There was strong objection to this proposal, based on the fact that it means raising rates in a good year and violates the initial concept of letting employees know what experience has been.

H. Mann suggested a stable rate with adjustments every 5 years. He pointed out this would be a good time to institute such a policy, rather than waiting until a time when a substantial rate increase would be necessary.

The decision will be postponed until this year's dividend is known. At that time R. Lassen and H. Mann will present a proposal for our policy.

It was also noted that new life insurance coverage requires a plant wide re-enrolling process. R. Lassen will implement.

2. Review of Telephone Expenses (T. Johnson)

Telephone, TWX, and Telex expenses are estimated at \$30,000/mo. Expenses grew 60% over the last year. We have 420 phones, of which 267 are un-restricted.

T. Johnson proposed:

- a. Cut unrestricted phones to about 40. Ted will provide a list of such phones next week.
- b. Eliminate unnecessary equipment (push buttons, etc.).
- c. Add a country wide WATS line (\$2,300/mo). Calls to sales offices will be scheduled in the Sales area.
- d. Install additional pay phones and add 1 receptionist operator.
- e. Eliminate paging from outside lines. Calls will be put through to secretaries or supervisors.

3. Advertising Program (J. Atwood)

The new agency appears to be working out well. Module advertising schedule, starting in January or February, is 1 new ad/mo with 3 insertions/mo.

4. Works Committee Meetings

Meetings will regularly be at 8:30 a.m. Wednesdays. Agenda will be published Mondays.

Meeting next Monday night will be devoted to review of new budgets.

D. W. Packer

DWP:ncs

WORKS COMMITTEE 8/11/64

APPENDIX A

Expense Categories in Forecast

- Sales:** Figures shown represent the sales estimates as received from N. Mazzaresse, P. Greene, B. Scudney, and the foreign sales offices.
- Cost of Sales:** Historic costs were used on our current lines and an estimated amount was used for PDP-6, 7, and Linc. Included in these amounts are field service charges for installation and warranty maintenance.
- Marketing:** Selling figures represent how the sales effort will be expended as estimates by N. Mazzaresse. Sales support costs represent selling activities of Customer Relations people, as estimated by B. Beckman. Space advertising, publicity, mailings, shows, literature and graphic arts figures were obtained from the technical publications budget.
- Engineering:** These figures were obtained from the engineering budget as presented to the Works Committee. They include both development and production engineering costs and the cost of manuals and graphic arts work.
- Other Expense:** Charges to this category represent field service training expenses along with various miscellaneous expenses.
- Contribution to Administrative Expenses and Profit:** This is the profit figure before any allocation of administrative expenses to product lines.
- Operating Profit:** This is the before tax figure for each product line after the allocation of administrative charges. (Administrative charges were allocated to product lines on the basis of sales).

RD/DP/ncs

FORECASTED PRODUCT LINE PROFITABILITY SUMMARY

Works Committee 8/11/64

(Thousands of Dollars)

Product Line	Sales	Cost of Sales	Gross Profit	Gross Profit Percentage	Marketing Expenses	Marketing Percentage	Engineering Expenses	Engineering Percentage	Other Expenses	Contribution Administrative Expenses & Profit	Percent Contribution
Computers:											
PDP-1	\$ 852.8	\$ 392.3	\$ 460.5	54%	\$ 44.4	5%	\$ 8.1	1%	\$ 8.2	\$ 399.8	47%
PDP-4	512.5	235.7	276.8	54%	41.0	8%	16.5	3%	17.8	201.5	39%
PDP-5	2,454.7	1,321.5	1,133.2	48%	344.4	14%	193.4	8%	48.7	546.7	22%
PDP-6	4,047.4	2,069.7	1,977.7	50%	410.5	10%	746.5	18%	56.8	763.9	19%
PDP-7	1,200.0	600.0	600.0	50%	181.9	15%	157.4	13%	31.1	229.6	19%
LINC	500.0	250.0	250.0	50%	52.8	10%	30.7	6%	2.9	163.6	33%
Computer Aided Design	-0-	-0-	-0-	-0-	-0-	-0-	119.5	-0-	-0-	<119.5>	-0-
Field Service Billings	120.0	36.0	84.0	70%	-0-	-0-	-0-	-0-	-0-	84.0	70%
Total Computers	\$9,687.4	\$4,905.2	\$4,782.2	49%	\$1,075.0	11%	\$1,272.1	13%	\$165.5	\$2,269.6	23%
Special Systems:	\$1,000.8	\$ 600.0	\$ 400.8	-0-	\$ 95.4	9%	\$ 107.0	10%	\$ 5.8	\$ 192.6	19%
Modules:											
Lab Modules	\$ 156.9	\$ 45.5	\$ 111.4	-0-	\$ 25.9	16%	\$ 15.5	10%	\$ 1.0	\$ 69.0	44%
System Modules	3,128.9	1,020.7	2,108.2	-0-	186.1	6%	201.3	6%	11.4	1,709.4	55%
Small Modules	913.2	302.3	610.9	-0-	262.0	28%	323.1	35%	13.7	12.1	1%
Total Modules	\$4,199.0	\$1,368.5	\$2,830.5	-0-	\$ 474.0	11%	\$ 539.9	13%	\$ 26.1	\$1,790.5	43%
TOTAL - All Product Lines	\$14,887.2	\$6,873.7	\$8,013.5	-0-	\$1,644.4	11%	\$1,919.0	13%	\$197.4	\$4,252.7	29%

DIGITAL EQUIPMENT CORPORATION
Product Line Profit and Loss
Fiscal 1965
(thousand of dollars)

Product Line	Sales And Rentals	Cost of Sales	Gross Profit	Gross Profit %	Marketing								Engineering D & P				Field Service Training and Other	Contributions to Adm. Exp. and Profits	% of Contributions	Allocation of Admin.	Total Operating Expenses	Operating Profit	% of Operating Profit	
					Selling	Sales Support	Space Advertising	Publicity	Mail	Shows	Literature and Graphic Arts	Total Marketing	% Total Marketing	Development & Production Engineering	Manuals and Graphic Arts	Total Engineering								% Engineering Costs
PDP-1	\$ 852.8	\$ 392.3	\$ 460.5	54%	\$ 20.8	\$ 20.6	\$	\$ 2.0	\$ 1.0	\$	\$	\$ 44.4	5.2%	\$ 7.1	\$ 1.0	\$ 8.1	.9%	\$ 8.2	\$ 399.8	46.8%	\$ 54.8	\$ 115.5	\$ 345.0	40.4%
PDP-4	512.5	235.7	276.8	54%	26.8	8.2		2.0	2.0		2.0	41.0	8.0%	7.5	9.0	16.5	3.2%	17.8	201.5	39.3%	32.8	108.1	168.7	32.9%
PDP-5 includes A	2454.7	1321.5	1133.2	48%	258.0	20.6	9.8	10.0	20.0	4.0	22.0	344.4	14.0%	141.4	52.0	193.4	7.8%	48.7	546.7	22.2%	158.8	745.3	387.9	15.8%
PDP-6 includes A	4047.4	2069.7	1977.7	50%	345.0	16.5	12.0	7.0	12.0	3.0	15.0	410.5	10.1%	661.5	85.0	746.5	18.4%	56.8	763.9	18.8%	261.7	1475.5	502.2	12.4%
PDP-7	1200.0	600.0	600.0	50%	129.0	16.5	6.4	5.0	10.0	3.0	12.0	181.9	15.1%	125.4	32.0	157.4	13.1%	31.1	229.6	19.1%	77.9	448.3	151.7	12.6%
Linc	500.0	250.0	250.0	50%	38.8		1.0	2.0	5.0	1.0	5.0	52.8	10.5%	27.7	3.0	30.7	6.1%	2.9	163.6	32.7%	32.7	119.1	130.9	26.1%
Computer Aided Design														119.5		119.5			(119.5)			119.5	(119.5)	
Field Service	120.0	36.0	84.0	70%															84.0	70.0%	7.7	7.7	76.3	63.5%
Total Computers	9687.4	4909.2	4782.2	49%	818.4	82.4	29.2	28.0	50.0	11.0	56.0	1075.0	11.0%	1090.1	182.0	1272.1	13.1%	165.5	2269.6	23.4%	626.4	3139.0	1643.2	16.9%
Special Systems	1000.8	600.0	400.8	40%	80.6		.8	2.0	5.0	2.0	5.0	95.4	9.5%	90.0	17.0	107.0	10.7%	5.8	192.6	19.2%	64.5	272.7	128.1	12.8%
Lab	156.9	45.5	111.4	71%	18.9			1.0	1.0		5.0	25.9	16.5%	14.5	1.0	15.5	9.8%	1.0	69.0	43.9%	10.5	52.9	58.5	37.2%
Systems	3128.9	1020.7	2108.2	68%	161.1			2.0	5.0	1.0	17.0	186.1	5.9%	194.3	7.0	201.3	6.4%	11.4	1709.4	54.6%	202.2	601.0	1507.2	48.1%
Small	913.2	302.3	610.9	68%	189.0		15.0	8.0	15.0	3.0	32.0	262.0	28.6%	311.1	12.0	323.1	35.3%	13.7	12.1	1.3%	58.7	657.5	(46.6)	(5.1%)
Total Modules	4199.0	1368.5	2830.5	67%	369.0		15.0	11.0	21.0	4.0	54.0	474.0	11.2%	519.9	20.0	539.9	12.8%	26.1	1790.5	42.6%	271.4	1311.4	1519.1	36.1%
Total All Lines	\$ 14887.2	\$ 6873.7	\$ 8013.5	54%	\$ 1268.0	\$ 82.4	\$ 45.0	\$ 41.0	\$ 76.0	\$ 17.0	\$ 115.0	\$ 1644.4	11.0%	\$ 1700.0	\$ 219.0	\$ 1919.0	12.8%	\$ 197.4	\$ 4252.7	28.5%	\$ 962.3	\$ 4723.1	\$ 3290.4	22.1%

G. Bell

PROJECT NO. **D 06 ARITH M1330**

ENGINEERING PROJECT FORECAST

INITIAL PLAN PROJECT NAME PDP-6 ARITHMETIC EST. STARTING DATE _____ SUBMITTED BY: G BELL
 REVISED PLAN PROJECT NO. D 06 ARITH M1330 EST. COMPLETION DATE _____ SUPERVISOR'S SIGNATURE _____

DIGITAL EQUIPMENT CORPORATION
 ENGINEERING PROJECT FINANCIAL PLAN
 PROJECT DESCRIPTION:

COST CENTER	MONTH #1				MONTH #2				MONTH #3				MONTH #4				MONTH #5				MONTH #6				MONTH #7				MONTH #8				MONTH #9				MONTH #10				MONTH #11				MONTH #12			
	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT	LAB	MAT	O/H	TOT
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
DRAFTING																																																
ENGINEERING																																																
PROGRAMMING																																																
MODEL SHOP																																																
MECHANICAL ENG.																																																
SUB SYSTEM ASS'Y.																																																
SHEET METAL																																																
MACHINE SHOP																																																
					</																																											

QUARTERLY EXPENDITURES AND RECEIPTS FOR PDP-6 PROJECT

<u>FIXED EXPENDITURES</u>	<u>2-1963</u>	<u>3-1963</u>	<u>4-1964</u>	<u>1-1964</u>	<u>2-1964</u>	<u>3-1964</u>	<u>4-1964</u>	<u>1-1965</u>	<u>2-1965</u>	<u>3-1965</u>	<u>4-1965</u>
Eng. & Prog. Development	37	109	131	186	255	254	157	105	78	62	48
Sales (Eng.)	0	4	1	8	6	6	6	6	12	12	18
Sales (Sales, OVH expenses)		10	20	25	25	25	25	25	25	25	25
Technical Publications		10	20	10	15	40	40	30	10	10	20
Advertising					4	12	12	12			
Field Service Manuals						25		25	10		
Field Service Operations					5	25	15	14	9	9	6
Quarterly expenses (K\$'s)	37	133	172	229	310	397	255	217	139	118	117
Total expenses (from beginning of project)	37	170	342	571	881	1278	1533	1750	1889	2007	2124

INCREMENTAL EXPENSES assuming 3 systems in 1964. 1 system/month in 1965

Incremental cost of goods for 12 months

650 650 650 650 650 650

3 systems in inventory

Total Expenditures

1928 2833 3700 4489 5257 6024

Quarterly receipts

1200 1200 1200 1200 1200

Total Receipts

1200 2400 3600 4800 6000

INCREMENTAL EXPENSES assuming 5 systems in 1964. 1.5 systems/month in 1965.

Incremental cost of goods sold

425 650 990 990 990 990 990

4.5 systems in inventory

Total operating expenditures

1306 2353 3598 4805 5934 7042 8150

Quarterly receipts

800 1200 1800 1800 1800 1800

Total receipts

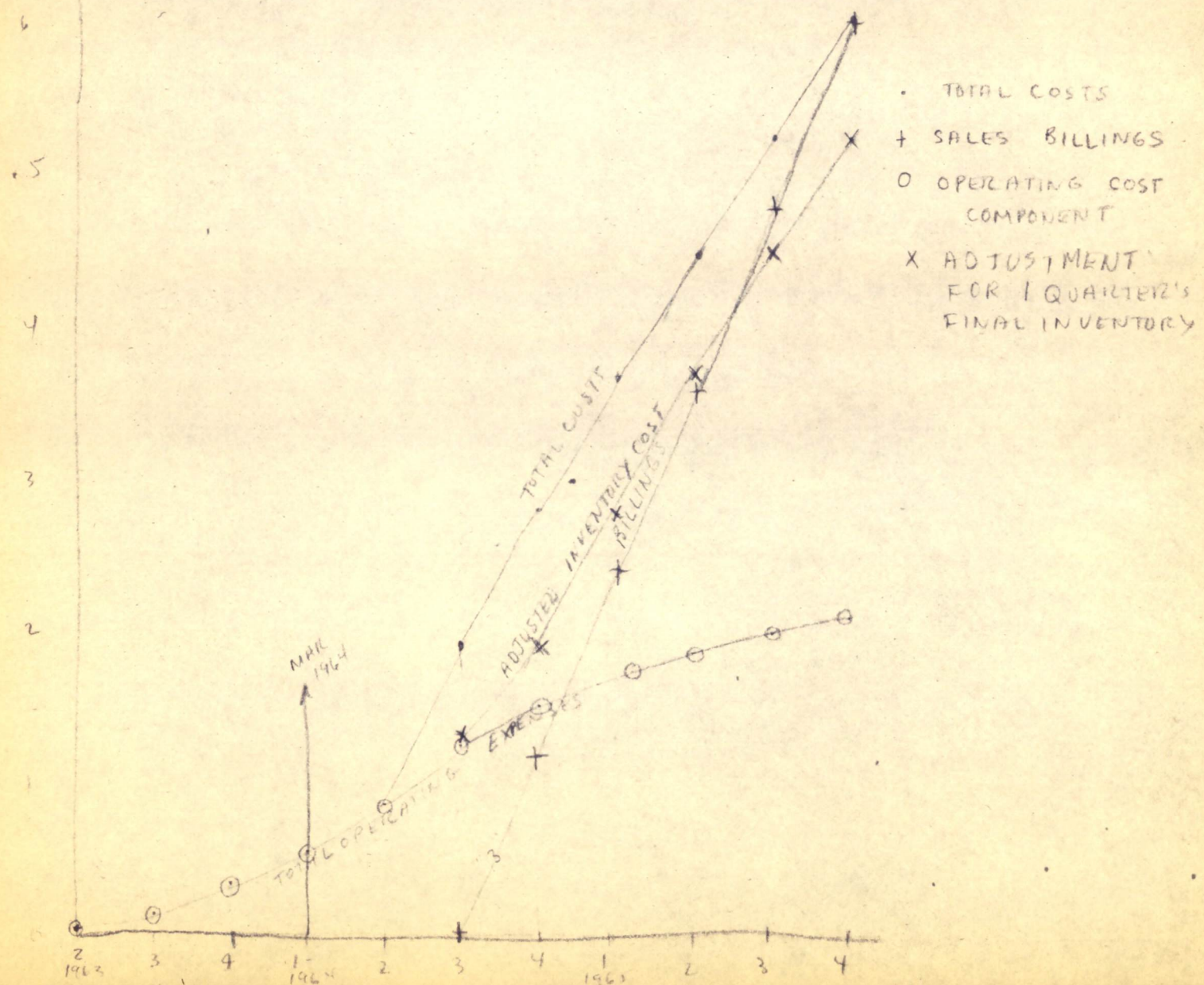
800 2000 3800 5600 7400 9200

\$10M

DOLLARS (\$M)
OF EXPENSES,
AND SALES
RETURN

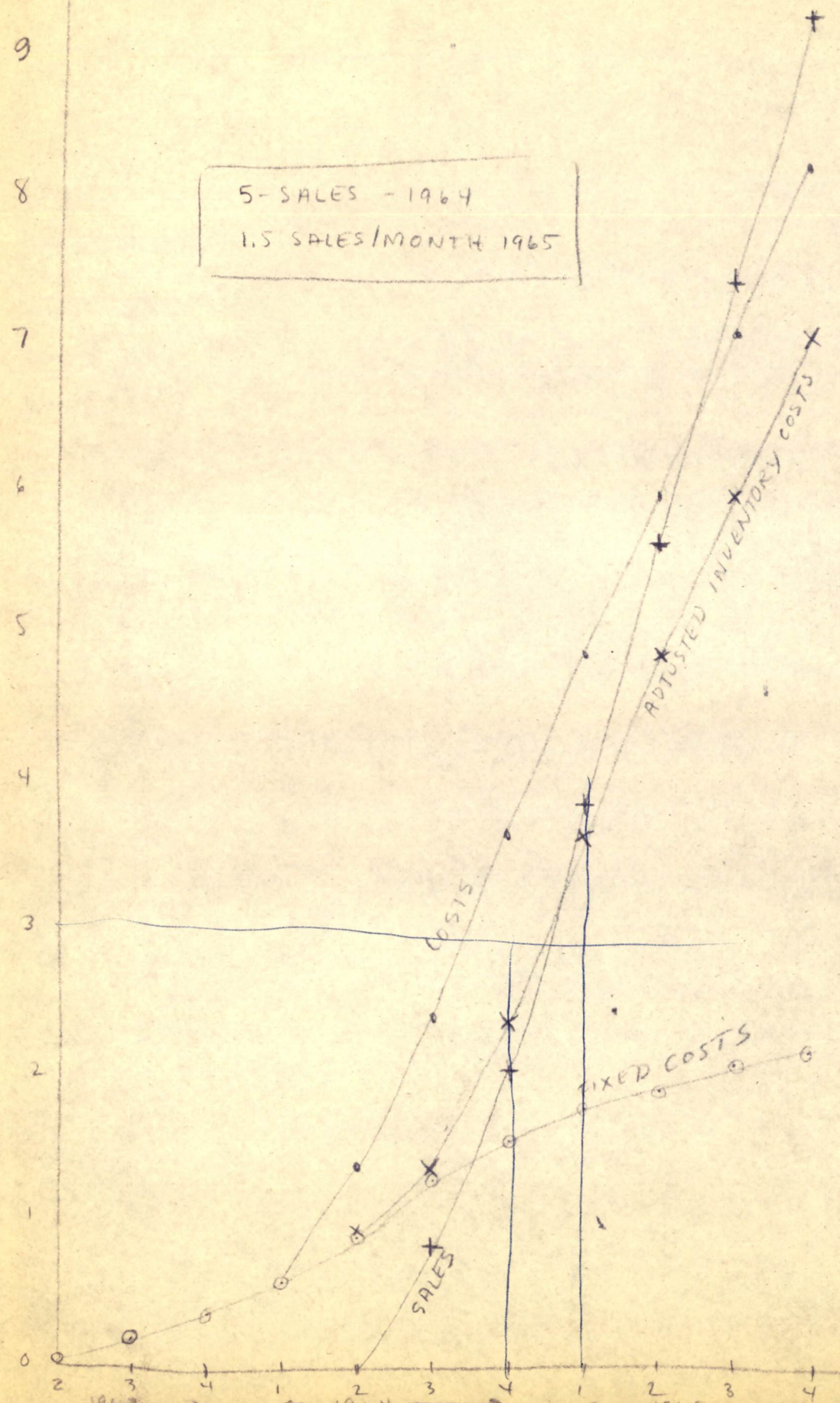
PDP-6 SALES, TOTAL COSTS, FIXED COSTS VS. TIME

3 SALES / QUARTERS
3 SALES IN 1964



\$10M

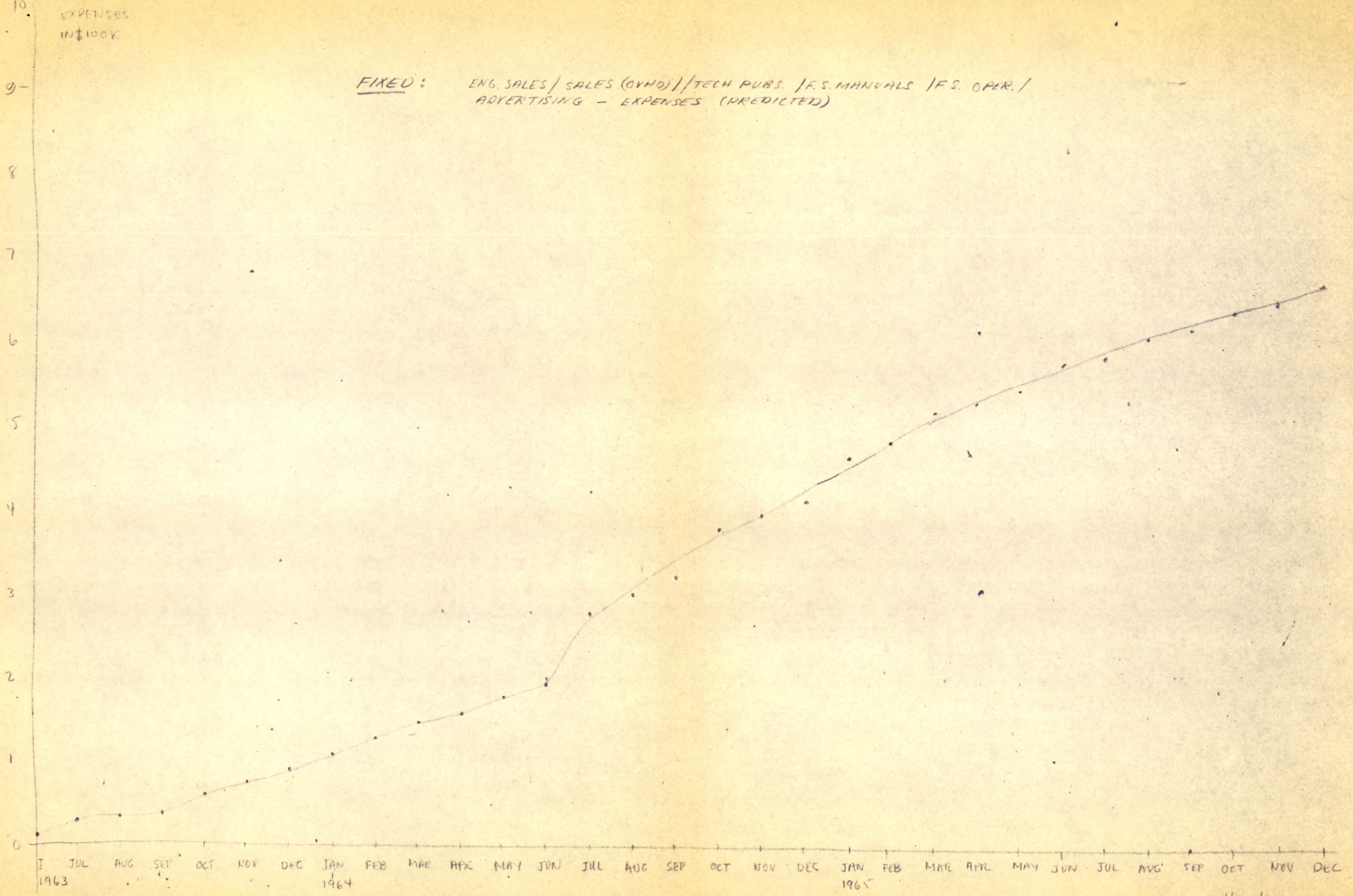
5 SALES - 1964
1.5 SALES / MONTH 1965



cqB 4/21/64

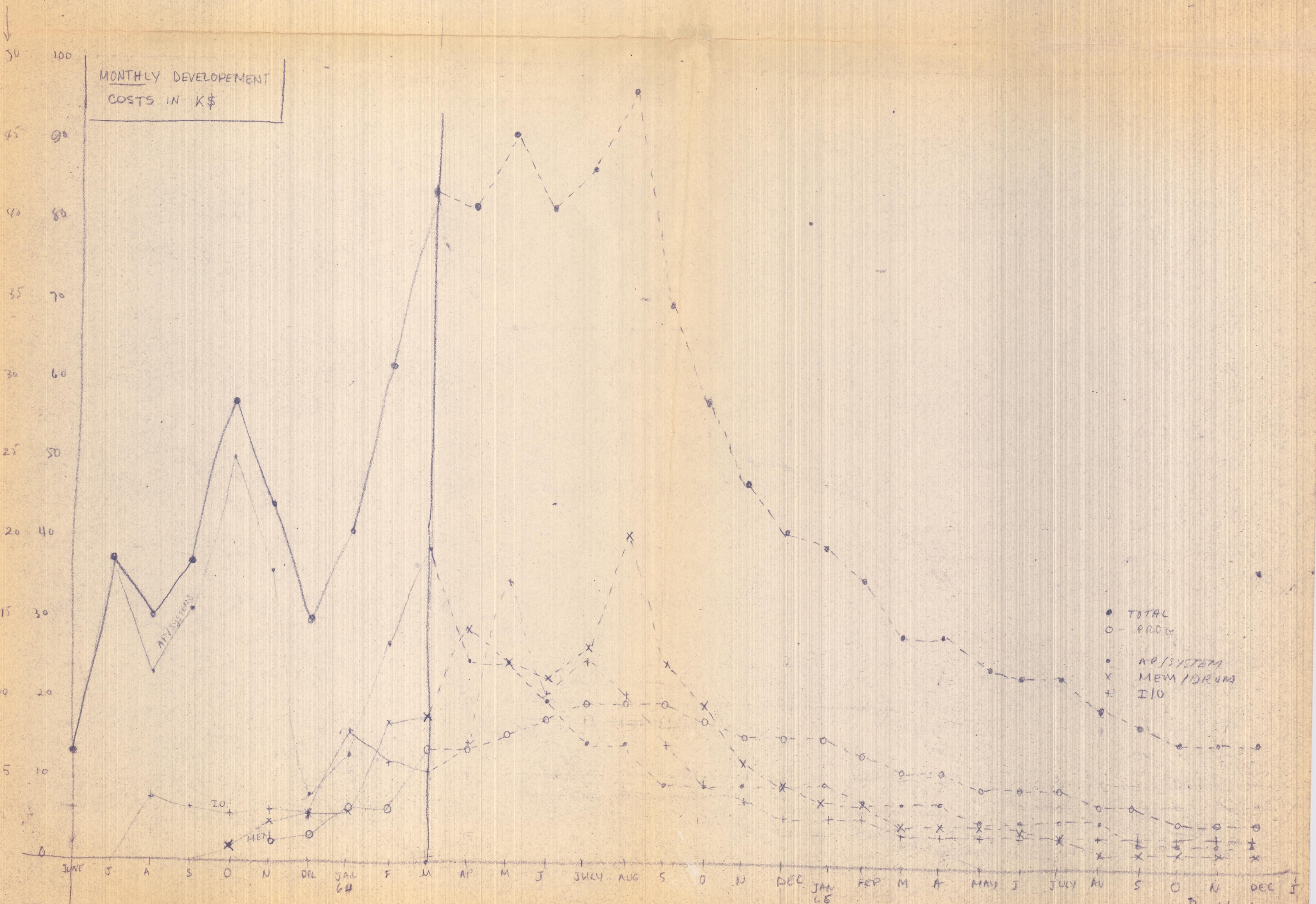
EXPENSES
IN \$100K

FIXED: ENG. SALES / SALES (OVHD) / TECH PUBS. / F.S. MANUALS / F.S. OPER. /
ADVERTISING - EXPENSES (PREDICTED)



4/24/64 c96

MINI POWER
@ \$2K / MONTH
(24K / YEAR)



COB 4/20/64

EN NUMBER

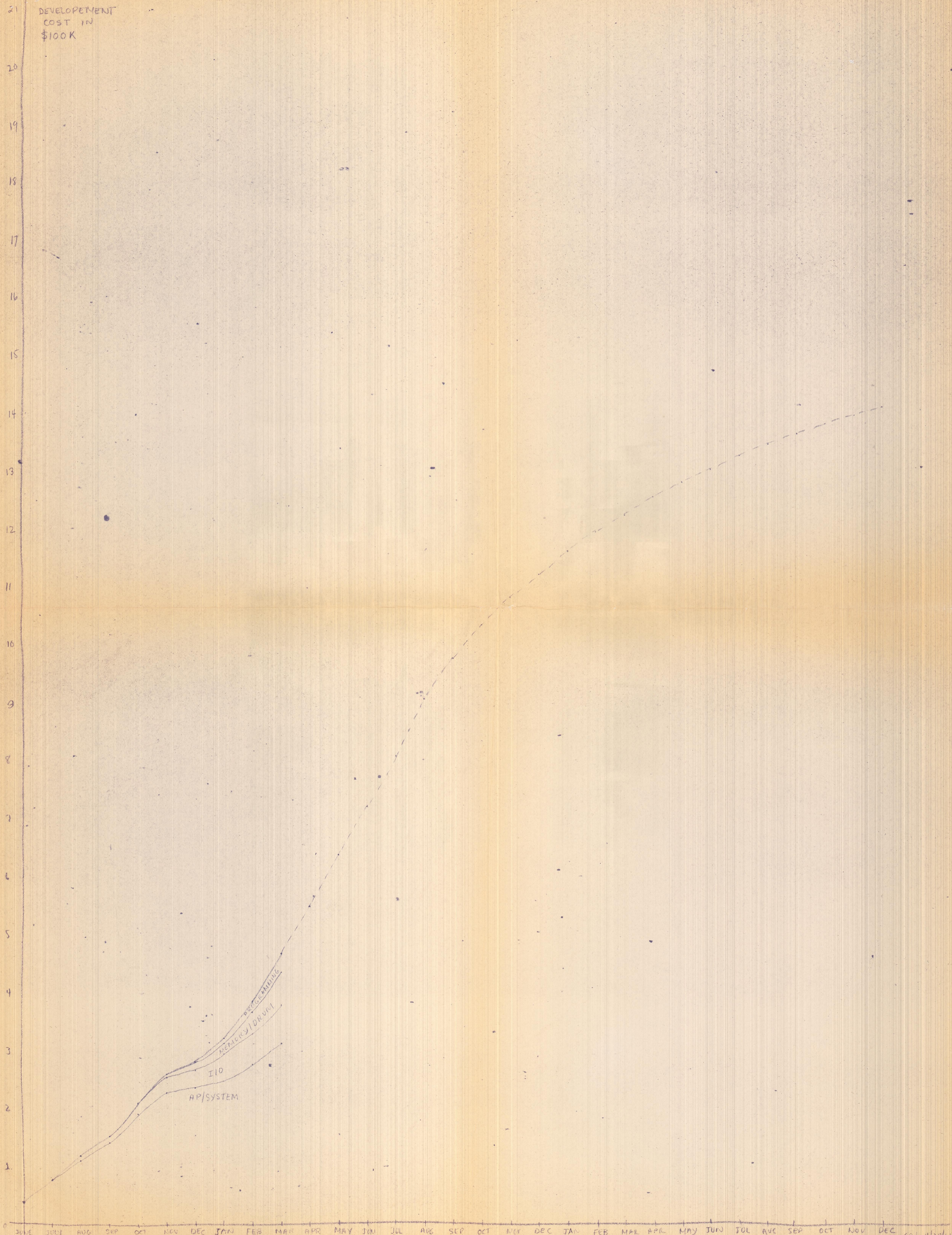
	1963												1964												1965												LARGE NAT'L LABS OUTSIDE	DEC PARIS	DEC LABOR TOTAL	TOTAL CQS	SPRINT W/ K\$
	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC								
I/O 1228 TELEPT					0	1	2	3	3	4	4	6																							1.9		6.1				
1229 300 LPM										0	0	1	(2)	(28)	(10)	(6)	(14)	(2)																20.2		30.0					
1230 PTR						1	3	5	6	6	6	7																						2.5		9.0					
1231 PTP						2	3	4	4	5	5	5																						.8		3.5					
1232 CR					7	7	9	10	10	11	13	13																						6.5		16.5					
1239 1000 LPM												0																						?		47.5					
1245 CP												0																						?		29.0					
1261 DC 136								1	3	6	8	9		(2)	(15)	(10)	(6)	(14)	(2)															0		10.0					
1262 TC 516									1	2	5	6																						0		18.0					
1271 UT 551									2	6	7	10																						0		15.0					
1283 DCS										4	7	7																													
1300 IO TEST											1	3																													
I/O TOTAL MONTHLY					7	11	17	23	29	44	56	67																													
EST. MONTHLY					7	4	6	6	6	15	12	11																													
EST. TOTAL													14	35	21	25	21	15	10	8	6	6	6	4	4	4	4	4	4	4	4	4	4	4							
MEM. TOTAL MONTHLY																																									
EST. MONTHLY																																									
EST. TOTAL																																									
1247 - FIF MEM									2	5	5	10	12	(8)	(4)	(2)	(2)	(1)	(1)																0.0						
1248 4 MS MEM							1	1	1	1	1	3	(8)	(4)	(2)	(2)	(1)	(1)																							
1249 2 MS MEM								1	3	7	14	27	(13)	(18)	(18)	(10)	(10)	(40)	(10)	(8)	(6)	(4)	(4)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)		126.0						
1269 LIN. SEL.								0	1	1	1	1	(1)	(18)	(18)	(10)	(10)	(40)	(10)	(8)	(6)	(4)	(4)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)								
1254 MEMEXER							0	2	3	5	10	12	(2)	(3)	(3)	(15)	(30)	(15)	(5)	(5)	(4)	(4)	(4)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)							
1251 DRUM/CONT																																									
MEM. TOTAL MONTHLY									1	6	13	19	36	57																											
EST. MONTHLY									1	5	6	6	17	21																											
EST. TOTAL															29	25	23	27	41	25	20	13	10	8	8	5	5	5	4	4	2	2	2	2	2						
1178 AP/SYSTEM	11	23	36	72	106	131	165	181	186	193	213	248																													
1205 PROTO.			2	1	1	1	6	22	42	45	51	58	62																												
1250 IO PROC														(2)	(4)	(10)	(10)	(8)	(6)	(6)	(4)	(2)	(2)																		
PROC. TOTAL MONTHLY	11	25	37	73	107	137	187	223	231	244	271	310																													
EST. MONTHLY	11	14	12	36	34	30	50	40	8	13	27	39																													
EST. TOTAL													25	25	20	15	15	10	10	10	10	10	8	8	8	6	6	6	6	4	4	4	4	4							
1256 PROG. (SYS)										1	4	7	12	23																											
1266 PROG. (MAINT)										1	2	4	7	9																											
PROC. TOTAL MONTHLY									2	6	11	19	31																												
EST. MONTHLY									2	4	5	8	12																												
EST. TOTAL														14	16	14	20	20	20	18	16	16	16	14	12	12	10	10	10	8	8	6	6	6							
														45	61	79	99	119	139	157	173	189	205	219	231	243	253	263	273	281	289	295	301	307							
DEV. TOTAL MONTHLY	11	25	37	73	114	143	204	254	279	318	382	465																													
EST. MONTHLY	11	14	12	36	41	34	56	50	25	39	64	83																													
EST. TOTAL													82	91	82	87	97	70	58	47	42	40	36	29	29	25	24	24	20	18	16	16	16	16							
														547	633	720	809	906	976	1034	1081	1123	1163	1199	1228	1257	1282	1306	1330	1350	1369	1384	1408	1416							

LSK
9K

() NUMBERS IN () INDICATE PROJECTED MONTHLY ESTIMATE.

DEVELOPMENT COSTS FOR: I/O, MEMORY & DRUM, PROCESSORS, AND PROGRAMMING FOR PDR6.

DEVELOPMENT
COST IN
\$100K



21 DEVELOPEMENT
COST IN
\$100K

20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0

JUNE JULY AUG SEP OCT NOV DEC 1963 JAN 1964 FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC 1965

