digital INTEROFFICE MEMORANDUM

DATE: September 30, 1969

SUBJECT: Proposed Fire Drill

TO: Members of the Operations Committee

FROM: Al Hanson
R. Lawrence Best, Safety Office

The Plant Engineering Department would like to propose that the company have a fire drill on or about October 15, 1969. The exact day will depend on the weather. The fire drill will be executed by zones; therefore, there will be three separate fire drills on that day.

The Plant Engineering Department feels that evacuation of personnel is by far the most important element in the Plant Safety Program.

The long-range plans of the Safety Program include:

1. Two fire drills per year
2. Complete re-organization of the Safety-Security Committee
3. Plant Emergency Organization
4. Business Rebound Committee
5. Employee education
6. Emergency communication system
7. Two mutual aid fire drills per year (Five of the local towns participating - Maynard, Concord, Stowe, Acton, and Sudbury)

digital INTEROFFICE MEMORANDUM

DATE: 30 September 1969

SUBJECT: Air Travel

TO: Operations Committee
File

FROM: Nick LoRusso
Office Services Manager

PURPOSE: To seek final approval for continued use of the TWA teleticketing system and to replace existing airline credit cards.

REASON: The Companies presently serving our needs have manual billing systems. Invoices come from three sources: Horizons Unlimited, American Airlines and TWA's Write-Your-Own-Ticket System. This results in six to seven invoices per month that do not give sufficient details for analysis and efficient accounting.

Also, unnecessary manhours are consumed by the Accounting Department apportioning the charges.

RECOMMENDATION: I recommend we continue using the teleticketing machine and drop American Airlines and Horizons Unlimited as sources for airline travel. The benefits are as follows:

1. All tickets will be transmitted directly into the building. We will no longer be dependent upon delivery from outside sources.

2. By changing our credit cards, all of airline travel activity regardless of where ticket originates will be processed by the TWA computerized billing system, resulting in one monthly bill giving details numerically by Cost Center and alphabetically by employees in that Cost Center, making the total for each employee the Cost Center total and indicating the first class fares.

I believe implementing the above is necessary if we are to eliminate unnecessary work and provide us with a means of controlling some portion of the two million dollars plus in travel expenses.

Your consideration will be greatly appreciated.

Nick

NLoR/dam

digital INTEROFFICE MEMORANDUM

DATE: July 23, 1969

SUBJECT: TRADE SHOWS

TO: Operations Committee
CC: Roy Gould
Richard May
Howie Painter

FROM: Bill Long

I believe these were approved, but not sure Ted

Roy Gould's memo dated June 12, 1969, lists the Fiscal '70 Trade Show Schedule; no trade shows in the education area appear.

I feel that DEC should represent itself at:

NAIS (National Association of Independent Schools)
March 5-7 in Washington, D.C.
Attendance 3,800

We have been very successful in the independent schools and will get nationwide exposure at this show.

NCTM (National Council of Teachers of Mathematics)
April 1-4 in Washington, D.C.
Attendance 4,500

We have established a solid base in this market; we will have good promotional literature by this date which can be distributed nationwide at this one show. We were very well received the last two years at this show.

Please add these two shows to the Trade Show List.

WHL:pc

Bill

OPERATIONS COMMITTEE MEETING

September 29, 1969

AGENDA

1. Additions and Corrections to Minutes of the September 22nd Meeting

2. Proposed 1970 Company-Paid Holiday Schedule - (Win Hindle)
   (See attached report from Bob Lassen)

3. Proposed Canadian Benefit Changes - (Paul Chambers)
   (See attached report)

4. Clinical Laboratory Overview Report - (Ray Lindsay)
   (See attached report)

5. Proposed Program Change for Programming Product Line - (Larry Portner)
   (See attached report from Mike Dowling)

6. Marketing Review Committee Summary - (Ted Johnson)
   (See attached minutes of the September 22nd meeting)

7. Commercial Applications - (John Cohen)
   (See attached report)

digital INTEROFFICE MEMORANDUM

DATE: September 30, 1969

SUBJECT: Minutes of the Operations Committee Meeting
September 29, 1969

TO: Operations Committee FROM: W. R. Hindle, Jr.

Present: Ken Olsen, Pete Kaufmann, Stan Olsen, Ted Johnson, Nick Mazzarese, Brewster Kopp, Win Hindle (Secretary)

1. Minutes of the September 22, 1969 Operations Committee Meeting were approved.

2. Referring to the Marketing Review Committee minutes of September 22, 1969, Pete Kaufmann asked that future delivery commitments for RS08 disks be made by Jack Smith, not Joe St. Amour.

3. 1970 Company Holidays - Approved as proposed by Bob Lassen.

4. Clinical Laboratory - Ray Lindsay and Bill Segal answered questions about Ray's report. Competition from IBM in the future could become tough if they get their system programmed on an 1130. We also discussed the problem of competing with our OEM customers, as we do with Berkeley Scientific Labs. We must be careful not to say derogatory things about our OEM customers.

5. Christmas Gifts - We will ask the Personnel Department to make a five year plan for giving Christmas Gifts to employees. We like the idea of giving a gift package that contains gifts from each country where DEC does business.

6. PCP Programming Product Line - We accepted Roger Pyle's proposal for the Programming Product Line. We received Mike Dowling's report that suggested we budget a 40% pre-tax profit starting in Quarter 4 of FY1970. The Programming Product Line will be watched closely to see if 40% pre-tax profit can be reached.

7. Northeastern Management Program - Ted Johnson will select one of his regional managers to attend the Northeastern Management Program starting in January.

8. Special Salary Reviews - We approved Stan's three special reviews. We approved Ken's proposal on Dick Best.

bwf

digital INTEROFFICE MEMORANDUM

DATE: September 17, 1969

SUBJECT: PROPOSED 1970 COMPANY PAID HOLIDAY SCHEDULE

TO: Operations Committee

FROM: Personnel Committee
(Bob Lassen)

The Personnel Committee approved the following Holiday schedule for calendar 1970:

Holiday	Date	Day of Week
New Year's Day	January 1, 1970	Thursday
Assignable Day	January 2, 1970	Friday
Patriot's Day*	April 20, 1970	Monday
Memorial Day*	May 25, 1970	Monday
Independence Day	July 3, 1970	Friday
Labor Day	September 7, 1970	Monday
Thanksgiving Day	November 26, 1970	Thursday
Assignable Day	November 27, 1970	Friday
½ Day (Christmas)	December 24, 1970	Thursday
Christmas Day	December 25, 1970	Friday

*Massachusetts law requires that Patriot's Day and Memorial Day be observed on the Monday as stated above.

This proposal is in keeping with our present policy of 9½ company paid holidays (including 2 assignable days).

July 4 falls on a Saturday; therefore, we propose to designate Friday, July 3, 1970, as a company paid holiday.

jfr

digital INTEROFFICE MEMORANDUM

DATE: September 11, 1969

SUBJECT: CLINICAL LABORATORY OVERVIEW REPORT

TO: Operations Committee FROM: Ray Lindsay

In March, 1968, the Clinical Lab project received full support from DEC management to design and implement a Clinical Laboratory System, based on the University of Wisconsin's basic chemistry system and oriented to the typical community hospital. Although this was the primary goal, it was also realized that commercial laboratories (service centers), University Hospitals, Research Centers, and OEM's were prime markets also. Within the past year it has become very clear that the OEM market, for the Lab systems, is more advanced than we originally anticipated, and some of our efforts have been devoted to securing their business and giving them limited support.

OEM customers in the lab field want to provide a service to the commercial or hospital laboratories, set up multi-phasic screening centers, or integrate the lab system into a larger total hospital system. In addition, many of the larger pharmaceutical firms are purchasing smaller labs with the intent to automate them.

The various market segments and their sales potential are shown below. These figures are based on our average selling price, and immediate potential is within 2 to 5 years.

MARKET	HOSPITALS	COMM. LABS	RESEARCH	OEM'S (all market segments)
# of installations	7500	3000	1000	50
Immediate potential	1500	450	100	20
Immediate potential ($)	200 million	36 million	5 million	10 million

Bookings & Billings

If we refer to the marketing report submitted in September, 1968, we find that we are about at the stage of Q3 for 1969 which implies

about a five to six month lag. Following is the picture for fiscal 1970, and programming commitments will not delay any of the indicated shipments.

FY 70	Q1	Q2	Q3	Q4	Totals
Projected bookings (as of 6-1-69)	588K	756K	1092K	1274K	3710K
Projected billings (as of 6-1-69)	200K	588K	960K	1248K	2996K
Actual shipments to date	85K				85K
Scheduled shipment of present firm P.O.'s	131K	608K	406K	225K	1370K

Additional firm purchase orders scheduled beyond fiscal '70 increase total backlog to 1580K.

FY 71	Q1	Q2	Q3	Q4	Totals
Projected bookings	1520K	1710K	1900K	2090K	7220K
Projected billings	1330K	1520K	1710K	1900K	6460K

As can be seen in the above chart, the 1971 picture is even brighter for bookings and billings, and a realization of profits of over 34%.

The Clinical Lab system is based around the LINC-8 computer with 8K memory, RS08 disk (½ million words), 300 LPM printer, 6 Teletypes, and a Clinical Lab interface, all working in a time-shared environment. After the LINC-8 system has been thoroughly checked in the laboratory environment (University of Wisconsin), which should be by December, 1969, the programs will be converted to the PDP-12 and will become Public Domain as agreed to by the University of Wisconsin and DEC. At this time the advanced system will be installed in a few locations (LINC-8) and the advanced system, based on the PDP-12, will be available about February, 1970. After this step is completed, a more powerful monitor will be developed to accommodate more peripheral equipment including a card reader, data phone, and various types of digital inputs.

The programming effort to date has produced a time-shared monitor, and almost a dozen user programs necessary for a successful Clinical Laboratory system. Although the RS08 disk situation has delayed the project by approximately six months, we have been able to make many programming refinements and have gained considerable insight into the application and market area in the interim.

The philosophy of the system is to provide a modular, expandable system with a feature which enables each hospital to tailor make its own system.

Since this market is really in its infancy, we have had to try and educate it in various ways. One of the more common means is to run various ads which dwell on important aspects of the system. We have also printed a brochure on both the Basic and Advanced Systems. The most important phase of this indoctrination, of course, is the education of the field salesmen. There have been four formal sessions held on the Clinical Lab system, which have been followed up by marketing support from Maynard. In addition, a few important shows, such as the Association of Clinical Chemists and American Association of Clinical Pathologists have been attended with working hardware and software over the past 1½ years. Many seminars have also been held in each region.

The DEC Field Service organization readily volunteered to support the Clinical Lab application. They are not only responsible for the installation of the system, but also train the lab personnel on-site in the use of the system and acquaint them with the various laboratory interfaces. Thus far, only Basic Systems have been installed. Since March, 1968 we have consulted with Field Service in every aspect of the system that concerns them and have had excellent cooperation. We anticipate that they will continue on this course when Advanced Systems are installed in the very near future. Field Service support and maintenance is absolutely imperative to the success of the Clinical Laboratory system. This is a critical application which will test DEC Field Service as never before. However, the potential of the market and its rewards will place DEC in an enviable position.

DEC's major competition in the Clinical Lab application are Spear, Inc., and Berkeley Scientific Laboratories in the small computer class, and IBM in the medium and large scale computers. Most of the other major manufacturers are trying to provide total hospital systems which include the Clinical Laboratories. Univac and NCR seem to have an interest in having DEC do the Clinical Application and interface

to their larger systems. DEC's entrance into this field, and our system philosophy has definitely alarmed our major competitors and they are moving much faster and promising a lot more.

Our backlog of orders will really climb as soon as several of our Advanced Systems are installed and proven beyond a doubt to be a workable laboratory system.

Ray Lindsay

Ray Lindsay

djc

attachment

Clinical Labs As Big Business

In an era of activity characterized by size and efficiency, the clinical laboratory has often seemed an anachronism.

In the past ten years the laboratory has been hard pressed to grow apace with the proliferation of diagnostic procedures. To do so requires space, personnel and massive infusions of capital — all of which largely have been lacking. In too many cases, the clinical laboratory has lacked business resources, administrative acumen, and marketing vision. This collection of of factors has led to the brink of crisis and to the development of crash programs.

Automation is part of the answer. But the cost of automating prices this relief out of the range of all but the largest hospitals and those fortunate few who have become federal grantees or demonstration centers for instrument and computer manufacturers. Much of the slack is now being taken up by the independent clinical laboratory, and herein lies a tale of emerging big business.

The most dramatic recent move was that of Damon Engineering, Inc. of Needham Heights, Mass. Last spring, the firm acquired four clinical laboratories; on July 24 it picked up three additional clinical labs and a standards lab; and it has constructed a clinical laboratory at its Massachusetts headquarters. This brings the network of clinical facilities to eight in 12 locations.

And the parade of acquisitions and innovations is not at an end. Upjohn now owns two large clinical labs via acquisition, and another is on the waiting list for construction this fall. American Biomedical Corp. has announced plans to acquire Morrison Clinical Laboratory of Midland, Texas. Smith Kline and French is favorably impressed with its new acquisition, Leary Laboratory of Boston. We have even seen the beginning of franchising in the clinical laboratory field — a kind of medical Chicken Delight.

The advantages of such combines from a business point of view are obvious: Major sources of investment capital are immediately available; consolidation of services becomes eminently practical; automation emerges as a budgetary reality; centralized purchasing brings significant price breaks; management and personnel functions become more clearly defined; and for the parent company, a built-in proving ground exists for new instruments and supplies.

The ability to perform esoteric tests on a volume basis also makes it feasible for such labs to become safety valves for those hospitals who cannot profitably cope with the vast numbers of routine tests if they have to divert their attention to smatterings of "oddball" analyses. This last factor has altered the customer mix of some independent labs to the point where their executives have told us their sources of income are now split about 50-50 between private practitioners and hospital contracts.

The independent laboratories, however, are not the only ones being pressured into combination and/or cooperation. Pooled facilities are, as a matter of efficiency, profitability and convenience, becoming more and more of a reality among hospital laboratories. Some combines are generally recognized as exemplary, such as the Youngstown Hospitals Association Laboratories under the direction of Dr. Arthur Rappaport. Others, such as the laboratories serving hospitals affiliated with the University of Pittsburgh, are less than satisfied with their early attempts at cooperative automated ventures and are engaged in intensive redevelopment programs.

The Federal Government is also tacitly abetting this trend toward concert of action in its direction of research dollars toward automating clinical laboratories. The NIH has budgeted just over $2 million for contracts and research grants for automated clinical laboratories this year, and by 1974 the amount budgeted will grow to $13.5 million. Some of this research is already bearing fruit under the joint General Medical Sciences/Atomic Energy Commission program. However, automated clinical laboratories are today few and far between; they are expensive to purchase and program; and though laboratories will be forced into the posture of implementing more of them, only the largest laboratories, or groups of laboratories pooling their resources, will be able to buy and profitably operate them.

It would seem inappropriate to view these acquisitions and cooperative ventures as suspect. The old bugaboo about "bigness" — at once respected and damned — is not especially applicable to clinical labs at this time or in the foreseeable future. The reason: The laboratory is not seeking size for the sake of size; rather, size is being forced upon the lab as a means of meeting the challenges of better diagnosis and patient followup.

The price of innovation will continue to be high, but sound business practices, such as feasible cooperative ventures, is one way of keeping a leash on investment and operating costs. □

digital INTEROFFICE MEMORANDUM

DATE: September 16,-1969

SUBJECT: Programming Product Line PCP

TO: Operations Committee

FROM: Mike Dowling

CC: Roger Pyle

The attached PCP from Roger Pyle regarding the Programming Product Line has been carefully reviewed by the Financial Analysis Department. We agree with the proposed plan with the following comments:

1 I believe that the Product Line should budget a net profit beginning in Q/4 FY 70 of 40% instead of the 30% presently proposed for the following reasons:

(A) I believe the Programming Product Line activity is comparable to the special systems. The computer special systems group attains a 50% gross margin on its own engineering input to the systems. If the Programming Product line budgeted this same 2 to 1 markup, it would project profits of approximately 42%.
(B) Engineering and programming talent is the most valuable resource of the company. Therefore, we should expect a higher return on a product composed entirely of this resource than we would on a product which also contains a significant amount of materials.
(C) A sample of invoices from other software firms doing work for DEC showed that their prices ranged from $125 to $160/day, plus expenses. The Programming Product Line can achieve a 40% profit margin if it sustains an average charge of $170 per day. The customer should be willing to pay a somewhat higher price in order to have the software provided by the same company selling the hardware.

2 The plan as proposed will mean an increase in corporate billings of $98K and gross margin profits of $37K for FY 70. The remaining $112K billings and $39K related gross margin profits represent a transfer of a project previously budgeted by the PDP-10 product line.

3 Programmers are a limited resource, and I feel that the Company should insure that they are not assigned to the Programming Product Line if it means a shortage in quality programmers for the hardware product lines. The company earns a much greater return on its programming investment when this investment leads to increased hardware sales than it does if it sells its programming services as individual products. While much of the work of the Programming Product Line is expected to generate additional hardware sales, we can not expect this type of programming effort to be as effective in this respect as systems and diagnostic programming which is deliberately undertaken to sell hardware.

MJD/am

digital INTEROFFICE MEMORANDUM

DATE: September 16, 1969

SUBJECT: PROGRAM CHANGE PROPOSAL (SOFTWARE PRODUCT LINE BUSINESS PLAN)

TO: Operations Committee FROM: Roger Pyle

The attached Profit and Loss Statement, Cost Center Worksheet, and P & L Balance Sheet constitute the revised business plan for the Software Product Line. The changes included reflect the addition of programmers on the Stock Exchange of Melbourne Project. Staff levels are shown below.

	Q1	Q2	Q3	Q4
Manager	1	1	1	1
Secretary	1	1	1	1
Programmers	7	7	5	5

As for-sale software is an entirely new market area, the figures leading to the Per Cent Profit are based on estimates derived from limited experience. This profit level is considerably higher than that achieved by the average software house, but through the us the DEC sales force I feel we should achieve this kind of return.

ec

BUDGET STATEMENT OF OPERATIONS

PRODUCT LINE SOFTWARE

DATE 9/5/69

		Fiscal Quarters 1970				Total Fiscal Ye 1970
		First	Second	Third	Fourth	
	BOOKINGS					
1	Equipment Sales of Parent	--	19,000	131,000	60,000	210,000
2	Equipment Sales of Subsidiaries					
3	Contributions					
4	Allowances					
5	Discounts					
6	INCOME FROM SALES OF EQUIP					
7	Rental Income					
8	Maintenance & Service Income					
9	**NET OPERATING REVENUE**	--	19,000	131,000	60,000	210,000
10	Domestic Job and Standard Cost	--	11,700	85,100	37,200	134,000
11	Subsidiary Job and Standard Cos					
12	Manufacturing Overhead Variance					
13	Variances From Standard					
14	Allowances					
15	Warranty & Installation Expense					
16	Royalty Expense					
	COST OF SALES - EQUIPMENT					
18	Depreciation of Leased Equipmer					
19	Maintenance & Service Expense					
20	**COST OF NET OPERATING REVENUE**	--	11,700	85,100		
21	Margin on Equipment Sales (6-17)					
22	Margin on Rentals (7-18)					
23	Margin on Maintenance & Servic					
30	**TOTAL GROSS MARGIN** (21 + 22 +	--	7,300	45,900	22,800	76,000
40	Product Line Engineering					
41*	Shared Product Engineering	--	380	2,620	1,200	4,200
42*	Manufacturing Projects	--	90	660		
43	Cross Product Engineering					
49	**TOTAL ENGINEERING EXPENSE**		470	3,280		
50	Product Line Marketing					
51	Domestic & Foreign Selling					
52	Advertising & Promotion					
53	Cross Product Marketing					
	TOTAL SELLING EXPENSE					
61*	**ADMINISTRATIVE EXPENSE**	--	1,050	7,210		
62*	**OTHER (INCOME) & EXPENSE**					
70	**PROFIT BEFORE FEDERAL TAXES**		5,780	35,410	1	
	*To be completed by accounting	--	30.6%	27.0%	30.0%	

PROFORMA P & L AND BALANCE SHEET

	SALES				
	BEGINNING BACKLOG	112,00	145,00	151,00	85,00
2	BOOKINGS (+)	33,00	25,00	65,00	65,00
3	BILLINGS (-)	0,00	19,00	131,00	60,00
4	ENDING BACKLOG	145,00	151,00	85,00	90,00
	INVENTORY				
5	BEGINNING (FROM CC REPORT)	51,30	64,30	90,60	37,90
6	+ SALARY	13,00	38,00	32,40	33,40
7	- COST OF BILLINGS	0,00	11,70	85,10	37,20
8	ENDING	64,30	90,60	37,90	34,10
	INCOME STATEMENT (FY '72)				
9	SALES(BILLINGS 3)	0,00	19,00	131,00	60,00
10	COST OF SALES(EX II)	0,00	11,70	85,10	37,20
	GROSS PROFIT (BT) 9-10	0,00	7,30	45,90	22,80
12	PROFIT MARGIN (%)	----	38,4	35,0	38,0
	INCOME STATEMENT (FY '71)				
13	SALES (BILLINGS 3)	90,00	90,00	120,00	150,00
14	COST OF SALES (PROJECTED)	55,80	55,80	74,50	93,00
15	GROSS PROFIT (BT) 13-14	34,20	34,20	45,50	57,00
16	PROFIT MARGIN (%)	38,0	38,0	38,0	38,0

DIGITAL EQUIPMENT CORPORATION
BUDGET WORKSHEET FOR COST CENTER NO.

Prepared by R. Pyle Approved by _____ Date 25 Aug. 69

Acount Number	Activity Code	R.S.	Acount Name	Fiscal Year First Quarter	Fiscal Year Second Quarter	Fiscal Year Third Quarter	Fiscal Year Fourth Quarter
7?81		1	Project Material Direct				
7?88		1	Mtg. Transfer - Direct				
7?89		1	Material Requisitioned Dir.				
7?84		1	Project Labor Direct				
7?01		2	Base Labor (A)	8.2	24.5	21.0	21.0
7?01		2					
7?01		2					
7?02		3	Overhead Labor (B)	1.6	5.0	5.0	5.0
7?11			Holiday and Vacation (Budgeted for in A & B above)				
7?53		3	Agency Personnel				
7?03		4	Overtime Premium				
7?04		4	Personal Allowance	0.1	0.1	0.1	0.1
7?05		4	Sick Pay	0.0	0.1	0.1	0.1
7?15		4	Fringe Benefits (10% A & B)	1.0	3.0	2.6	2.6
7?25		5	Occupancy Charge (27¢ Sq. Ft./Mo.)	0.2	0.8	0.6	0.6
7?26		6	Stationery Misc.	0.2	0.2	0.2	0.2
7?28		6	Production Materials				
7?29		6	Materials Requisitioned	0.5	0.2	0.2	0.5
7?40		7	Airlines	0.4	2.3	0.8	1.0
7?41		7	Auto Rentals	0.1	0.2	0.2	0.3
7?42		7	Lodging	0.2	0.6	0.6	0.7
7?27		8	Equipment Leased				
7?31		8	Repairs & Maintenance				
7?33		8	Depreciation				
7?52		8	Dues & Subscriptions				
7?58		8	Tel & Tel	0.3	0.8	0.8	0.8
7?59		8	Tuition Assistance	0.2	0.2	0.2	0.3
Total Cost Center			Av cost/man qtr.	13.0 / 5.6	38.0 / 5.4	32.4 / 6.5	33.4 / 6.7

EXHIBIT II

BILLINGS AND PROJECT COST FISCAL YEAR '70

PROJECT	BILLING QUARTER	COST		BILLINGS	
ALLIED COMPUTER	Q 2	8,60		14.00	
CATER	Q 2	3,10		5,00	
TOTAL			11.70		19,00
AUTOMATIC LIQUID LOAD	Q 3	11,80		19,00	
STOCK EX *	Q 3	73,30		112,00	
TOTAL			85,10		131,00
PPG	Q 4	9,90		16.00	
OTHER	Q 4	27.30		44,00	
TOTAL			37,20		60,00

* INCLUDES COSTS FROM P/L AND APPLICATIONS PROGRAMMING

digital INTEROFFICE MEMORANDUM

PM 39-4

DATE: September 25, 1969

SUBJECT: Commercial Applications

TO: Operations Committee

FROM: John Cohen

This memorandum describes the accomplishments to date in commercial applications and proposes the next step towards gaining a foothold in the small business application market.

I. Accomplishments

A. Systems Software

Work is two weeks ahead of schedule on DIBOL and the associated systems software. This is due to the excellent performance of our new employees and the success of our "secret weapon" technique of compiler implementation. The first version of the DIBOL compiler and associated run-time system has been operational for almost two months. During that time, approximately 25 application program modules have been debugged using the DIBOL system.

Scheduled to be complete before December 15 are the DEC tape sort, the report generator extensions to 8K DIBOL, the DIBOS mini-monitor and the 4K stripped-down paper tape version. The current version of DIBOL was completed at a total cost, including overhead, of approximately $8700 (about 5 programmer months). This is well below the usual cost of a COBOL-like compiler.

B. Application Programs

Work on the application programs is also about two weeks ahead of schedule. This is due to the excellent systems design help we are getting from our laboratory customer and to the ease of coding and debugging application programs in DIBOL. Early in September we completed the "Model I" system for G. E. Stimpson, Inc. It produces invoices, the daily invoice register, the billing verification report and generates inputs to inventory control, accounts receivable and sales analysis. The accounts receivable and inventory control applications have been coded and are being debugged. Also to be completed before December 15 are sales analysis, payroll, general ledger and accounts payable.

The customer was delighted with the results of the Model I runs. He is busy building a room for his PDP-8 business system to be delivered on December 15.

C. Further Interest in DIBOL

Dave Packer and I have discussed the use of the system for some in-house applications. He intends to use DIBOL for purchase order writing in the purchasing department and for order file maintenance in computer administration. DIBOL makes these applications very simple to implement.

Rick Bennett (PDP-8 Marketing) would like to use DIBOL for a CPA Computerpac. Norm Doelling and I are looking at another package for the investment management industry. Finally, Norm Doelling plans to put DIBOL on TSS-8 immediately. He will charge $5000 for DIBOL on each system and expects to sell more than 20 before the end of the fiscal year. We have agreed to split this revenue between TSS-8 and Commercial Applications.

II. Proposal for Next Phase

A. Background on Office Product Distribution Market

There are approximately 10,000 office products dealers in the country. Of these, Massachusetts has about 100. The vast majority gross between $500,000 and $2 million yearly. Very few (less than ½%) use any type of computer system or service now.

Most of the dealers belong to the National Office Products Association (NOPA) and read Office Appliances magazine as the industry authority. NOPA, in conjunction with a number of dealers, is investigating alternatives of bringing EDP into their industry.

Attached are two Office Appliances articles on EDP inroads. The first describes the system currently used by G. E. Stimpson and the second is concerned with a small service bureau operation.

B. Competition

There is no meaningfull competition to the proposal in the next section. Time sharing services, such as that now used by G. E. Stimpson are too expensive and provide the user too little control over his files and system operation. Stimpson complains that reports are often late and incorrect. Whenever they want to make any minor change or correction, they are told "it will cost $100."

Regarding service bureaus, the only one G. E. Stimpson knows of is described in the second attached article. They may provide competition in a few years with dealers with gross of one million or less.

Other manufacture's hardware, including the IBM System/3, is not, in itself, competitive. This is because IBM does not provide the pre-packaged systems design, programs and operational training. The office products dealer does not want a computer with which he must become technically familiar. Rather, he wants a special purpose box which solves those data processing problems peculiar to the office products distribution industry.

C. Action

Based on the above considerations, I want to market the office products system as a Computerpac (OP-8). There will be two configurations, OP-8 and the larger OP-8/A. OP-8 is designed to cost the user about $1000/month. Its print speed is 30 characters/second. OP-8/A will cost the user about $1400/month. Print speed is 300 lines/minute and the system will contain an additional DEC tape.

It is essential to note that we will not lease OP-8 directly. Office products dealers have access to many leasing alternatives. They can arrange their own leasing terms better than we could do for them (contrast this to, say, the education market).

Both systems will have the same software, except OP-8 will omit some of the longer periodic print runs (for example, sales analysis by customer). Both system prices include a program tailoring charge, 100 programmer hours for OP-8 and 150 hours for OP-8/A. This is a conservatively high cost, for all we need tailor is the price and discount computation, the dealer name at the top of report pages, certain field sizes and the tax computation depending on the state.

The price breakdown is:

OP-8		OP-8/A	
PDP-8/L	$9000	PDP-8/L	$9000
4K extra memory	3500	4K extra memory	3500
SDI printer	4000	MDS printer	20000
3 DEC tapes	14500	4 DEC tapes	17000
program tailoring	2000	program tailoring	3000
share package costs	1000	share package cost	1000
training	500	training	500
	34500		54000
premium	2000	premium	3000
	36500		57000
monthly lease	766	monthly lease	1097
field service	198	field service	280
	964		1377
rounded lease/mo	$990	rounded lease/mo	$1390

How many such systems could we sell? G. E. Stimpson's system will cost them approximately $1500/month. I posed the following question to Herb Zarling, G. E. Stimpson president: "If we had a slower system than yours, but which did almost as much for $1000 or under per month, how many could we sell?" Zarling responded that we could, without question, sell hundreds each year. I am conservatively estimating sales of 50 systems/year, with a product life of two years. Even this low estimate gives a profit before taxes of about 1.5 million dollars.

How will we sell to this market? The National Office Products Association meets sometime in March, 1970. Well before that time we will be able to demonstrate a complete hardware/software package. Mark Nigberg feels an article in Office Appliances would be appropriate about in February. He feels that no advertisements should be necessary. Names would be gathered at the show and we might buy a mailing list from either the dealers association or from Office Appliances. Then demonstration/seminars would be given in 3 or 4 major locations, preferably coinciding with reginal NOPA meetings. As Mark puts it, "this is really all you need to do to reach this narrow market, no razz-a-ma-tazz is necessary."

The timing is right. The office products distribution industry is ready and willing to bloom into EDP. Most are aware of the need, but fewer than ½% have it. We've got the hardware, the software and the knowledge of the market. It is a unique opportunity and I want to take advantage of it quickly.

D. Profit/Loss Projections

The following table shows the actual and projected costs for implementation of OP-8 as a product.

item	description	cost	
1	systems programming (to date)	$9000	
2	systems prog (to completion)	6000	
		15000	
	return from TSS-8 usage . .	(25000)	
			(10000) profit
3	application prog (to date) .	5000	
4	application prog (to model II)	10000	
5	application prog (to model III)	5000	
6	OP-8 market support development	30000	
		50000	
	margin on G. E. Stimpson machine	(20000)	
	total OP-8 start-up cost	$20000	

The $20,000 start-up cost is remarkably low in relation to the potential benefit to DEC. Given a conservatively low estimate of 50 systems per year for two years, the P/L for each year would be approximately:

line	desc	amount ($000)	
1	equipment sales parent	2350	(This table is based on a brief conversation with Clayton Rix.)
6	income from sales	2350	
9	net operating revenue . . .	2350	
30	total gross margin	1175	(50% net)
41	shared project engineering . .	47	
42	manufacturing projects . . .	12	
59	total selling expense	235	
61	administration expense . . .	141	
70	profit before federal taxes .	740	

III. Future

OP-8 offers, in itself, the opportunity for a good profit to DEC over the next two years. But possibly more important is the fact that we will have a strong foothold into the small business package area, which will become a multi-billion dollar market before 1975. From the standpoint of DEC now, the implementation of the OP-8 product is ideal. Risks are virtually non-existent and the opportunity is enormous.

The plan involves hiring two marketing specialists, which we can do within our present 1970 budget. No further programming or other talent will be needed.

* * * * * * *

I would like immediate approval from the operations committee to proceed with this slightly accelerated plan to put DEC solidly into the commercial EDP market.

Reprinted from

March 1968

Office Appliances

Automation Clears the Way For Future Growth

G. E. Stimpson Co. wanted to grow. But it was snowed under with paperwork and couldn't. After considerable soul-searching, the problems were licked. These four men helped do the job.

Joseph *Zurling* *Bickford* *Schuman*

Automation Clears the Way For Future Growth

Herb Zarling was an unwilling listener—perhaps a skeptic—when talk about automation started filtering through the office products industry four or five years ago. He admits that. After all, automatic data processing (ADP) and electronic data processing (EDP) were extremely costly and still in their infancy so far as use by office products dealers was concerned. Not much has actually changed, in the dealer's view, over the years, either. The skepticism, reluctance, fear of cost, fear of time-consuming adjustment—all of these considerations and many others have kept the so-called automation revolution on the outside—something to talk about and consider but not to rush into.

"Each guy figures he's worked this business out by the seat of his pants over the last 25 years and now has it just the way he wants it," analyzes Zarling, the soft-spoken president of G. E. Stimpson Co., Inc., a million-dollar-plus dealer in Worcester, Mass. He says he was no different three years ago. With years of experience—about 40 of them, in fact—how can a man believe that a computer will think the way he thinks, will do what he wants to do?

"This is what we had to learn," he now says: "That the guy who thinks this way is wrong; the computer, we have found out, can think a lot better than I've been able to think for the last 20, 30 or 40 years."

Going back to his pre-automation days, Zarling said, ". . . we were doing business I guess like 95 per cent of our industry was and is doing business. We had files and books and memory and catalogs, and we were constantly looking up things. We were in dread of pricing an order because a customer might not get the same price twice. I'm sure others have the same problem."

The problem was compounded by the sheer size of the Stimpson inventory, which runs now as it did then at about 15,000 product items. Sales volume was moving ahead at roughly seven per cent annually, corresponding closely to the growth rate of the nation's gross national product. Not bad, concluded Zarling, but not good enough, either, especially in an industry where the chain phenomenon was gaining momentum, where discounts were the rule and not the exception, where contracted business was where the bright gold was found. But, perhaps most important to the Stimpson president was the growing difficulty in maintaining control over his increasingly complex business.

"We weren't so interested in the bookkeeping end of it," he recalls. "We were interested in sales. This is the thing that first caught my interest in automation. What it could do with the 15,000 items that we carry in conjunction with sales. What it could do for our salesmen. What it could do for our customers. What it could do to bring our volume up and our gross profit up."

While accepting the fact that ADP and EDP were the realities tomorrow's businessman would have to accept, Zarling had little trouble deciding which piece of equipment he wanted for his operation. He puts it this way: "We picked out the cheapest one because it was the cheapest one—not that it was the best one . . . although I think that the cheapest one was the best one for us at the time because it had the capability of doing what a computer does. . . ."

The 6405 made by International Business Machines, Inc., was the equipment selected by Zarling, Harrison (Mike) Bickford, Stimpson's data processing manager, and Sid Schuman, vice-president.

There has been a great deal of discussion in the past as to what a dealer should do to prepare for the advent of data processing in his business. A good manual system encompassing all phases of the business is frequently mentioned as a prerequisite to data processing. Zarling disputes this thinking. In answer to a question concerning his manual operating procedures, he said: "We did not have a well-organized manual system, nor do I think you can have a well-organized manual system. And the fact that it wasn't good made us more and more anxious to change." Says Bickford: "I don't think we did have one (a good manual system) or we wouldn't have been looking for other equipment."

Maguire Saw a New Market

While much of the early decision-making—for instance, to go or not to go into EDP—was done on their own (with advice in technical areas, of course), today Stimpson is setting up its second phase under the watchful eye and guidance of Jerry Josephs, assistant vice president of John P. Maguire & Co., Inc., a New York-based commercial banker, which for 35 years has offered such services as factoring, financing, leasing and floor planning. In quest of offering clients more services, keeping better records and generating better office efficiency, it was only two to three years ago that Maguire itself entered data processing. Says Josephs: "Initially our thought was to offer data processing services in invoicing, for example, to our financing clients. But we discovered through an interesting route that this had broad market appeal to many, many other people who do not necessarily need our financial services, Stimpson being one.

"We feel that for the man who is basically a distributor, some 90 per cent of his total data needs are on his invoices. He has to use some device to create invoices, that is definite. So we defined our problem as making it as easy as possible for him to create that invoice and at the same time capture all the information on it which can later be used as feedback in various forms and reports."

Josephs is a young man who says precisely what he means. He's well-read on the subject of ADP and EDP

Management's concern: What EDP can do, not how it works

and is deft at getting to the soul of a company considering his firm's services. He waxes enthusiastic about the service his firm can render to office products dealers, which will be discussed later in greater detail. He describes Zarling and his management team as "energetic merchandisers" . . . "overly modest about themselves" . . . "pretty savvy people" . . . etc.

"I'm sure that if they had been satisfied with the level of sales at the time they were using the manual system, they would have stuck with it," Josephs declares. "But as they began to grow, they could see right away that this thing was just not going to be adequate." Time is precious, he says, and as sales volume keeps increasing, more time is used in less essential, fringe matters—those that should not require constant attention.

Zarling concurs, saying that the company did reach the point in volume where it was impossible to effectively control operations with manual systems. One problem that plagues all dealers was in personnel. "We just couldn't hire enough people or train enough people in the time we had, or the amount of time we thought we had," he remarked. Maximizing efficient use of time, information and manpower, therefore, became critical. Without getting this, stagnation in many phases of the business were apparent. And the effect of the status quo had a malignant overtone that Zarling felt made data processing no longer just a possibility, but an essential he could no longer do without.

The 6405 Relieved Pricing Confusion

Bickford observed that Stimpsons was ". . . pretty much at the point where to expand business it had to get into an area where it could reduce prices in the *second* and third increment of sales," giving salesmen the equipment or information they needed without the time consuming recourse to catalogs, files, brochures and the like.

"Right," says Zarling, "our competition—and we have it—is the type that would give you (the customer) 20 per cent off on anything bought, or 30 per cent, or whatever they chose as a per cent off discount. We must admit that we've done this ourselves. But for years I fought it. I fought it because it is not a true method of pricing. If we buy from 200 different manufacturers, we buy at 200 different sets of terms. We might get discounts as low as 25, or as high as 40 and 50, or 50 and 20. If we said we're giving you (the customer) 20 per cent off, we're cheating you on something and we're cheating ourselves on others. It's not a fair method of pricing. So, the first (automatic data processing) equipment that we got had the capability of taking three prices that we programed in advance."

That was the IBM 6405, which is akin to a card-fed calculating typewriter with "some decision-making capability," according to Josephs, who added: "The basic decision it can make is what Mike was talking about: Comparing a quantity to a price level, item by item, and, of course, this level of sophistication in the machine enables you to do other types of comparisons. . . ."

Flow charts which indicate the channeling of work and paper often are discussed as though they are a critical preliminary tool to data processing. Zarling takes a different view:

"If you are talking to me about flow charts, I really can't say that I do or do not understand them. I'm not completely dense about them—I can follow them. But I don't think I'd ever take the time to study them. . . I think the average dealer feels the same way. . . ."

EDP Creates a Communications Gap

Zarling had a lot to say on this subject, much of it in accordance with Josephs and Bickford. In a nutshell, it was concluded that top management of a medium size business should concern itself primarily with *ends* more than *means* of an accomplishment. Those concerned with means, in this case, most likely would be Bickford, Josephs, naturally, and those who daily and routinely are using the means as their own working tools—namely salesmen. This does not mean Zarling does not care about how the system works. He does care—and he knows the system—generally. But beyond a certain technical point, there comes a level where experts, such as Bickford and particularly Josephs, must be on hand to cope with what is—(or isn't)—going on and be able to explain it.

Continuing, the Stimpson president noted: "It is not how it's done anymore because I don't know how a computer works. But it is what is done. I am now thinking of myself. If you are trying to sell me a system to better my business through data processing, you would only confuse me if you threw flow charts at me. But if you said, 'we will do this, pay our salesmen in this manner,' that is the thing I'm interested in. How much will it cost and what will it produce? What will it do to sales? What will it do to gross profit? Those are my concerns as head of this company. I think if I read an article that was loaded with flow charts and calculations . . . I think I would be prone to skip over that part . . . and see what the end result is."

Josephs comments: ". . . recognize that the average man that is going into any kind of automation generally has a lot of difficulty communicating with an EDP service representative . . . they are in different worlds . . . the rep is trying to figure out what is there about this guy's business that fits into what I know my machine will

The IBM 360 Model 30 computer, shown above, is the foundation of the tele-processing system connecting Stimpson with John P. Maguire & Co., Inc., New York City. On-line time-sharing users throughout the country are connected directly to the computer, get instant information.

do? Now the client is sitting here and he doesn't care what the machine can do. He knows what he needs to run his business . . . and there is a gap there—a real communications gap! These guys don't talk the same language, so the problem basically is to find whatever middle ground there is that they have in common, determine that there are some basic, common interests." Bridging that gap is a crucial step. "It's the only way available to . . . a dealer," asserts Josephs, and this includes the definition of the potential user's problems.

"Once you have defined the problem, the system can be turned over to technical people who have seen this kind of thing a thousand times. And they do what needs to be done," Josephs continued.

Getting to the heart of the users' problems means intensive interrogation by the EDP systems expert. Josephs calls this extracting of information his toughest nut to crack in selling a useful system. Questions he needs answers to include the following: What areas of your business are most important? What areas are not so important? What do you want to accomplish now? Two months from now? Do you really need this or that report this way? Are you going to use it?

"These are all considerations that are basically the responsibility of whoever is trying to sell the system," Josephs claims. "And if he is honest and knows what he's doing, he will extract this information and be able to come up with some answers that are reasonable. The system will not be perfect, I'm sure it won't. But it will address itself to all the needs that have been successfully defined to that date."

Penetrating new markets, broadening the company's sales ground, and what both of these meant in the long run both to salesmen in the field and to the company's administrators were instrumental in G. E. Stimpson's interest in ADP and EDP. Discussing these, Josephs said:

"There was a strong recognition . . . that the manual method of doing it (routine paperwork and maintaining administrative control) could not support their marketing strategy."

At this time Josephs was not involved; his conclusions are based on what he has learned through his interrogation of company officials and study of company procedures. "It (the manual method) did not allow them the tactics necessary in support of that strategy," he continued. "So, they designed their system primarily in support of their marketing needs . . . (and) whatever *by-products* they got out of it, while not accidental, had to be

ancillary benefits. . . ." Ancillary benefits in this case turned out to be the capture of statistical data that could be used in analyzing inventory; but to do this it meant reverting to manual work.

If anything was proved by the use of the IBM 6405 it was that Zarling and his executive staff could better keep up with such matters as gross profits, accounts receivable, discounts, taxes, extending, invoicing, and, above all, pricing on the some 15,000 items in the company inventory.

"The direct result of the 6405 was an immediate increase in volume in our business," Zarling claimed, "and when we increased our volume, the machine became insufficient to meet the volume."

A most desirable problem, Stimpson executives say, but, nevertheless, one that called for more decision-making. This volume increase was apparent after three months of the 6405's installation at Stimpson. If skeptics of EDP or ADP want to level a criticism here that various systems only create headaches, Zarling says:

"It points up the fallacy of the whole thing as far as dealers are concerned. If you wait until the manufacturer's hardware salesman is ready to sell you something else (another piece of equipment), it's too late. Remember, he's only interested in the sale of hardware; he's not interested in you and your problems. He likes to see you grow and expand on his equipment, but the main thing he likes is the monthly rental and the commission he gets on his company's equipment. He's selfish that way, and rightly so. We (dealers) probably are too . . . in our sales. So the thing is not to wait for him to come to you but you (the dealer) starting looking right away. When we finally made the decision to go ahead, we looked at manufacturers and service bureaus, saying, 'Let's look and see what else we can find.'"

Choosing the Right Avenue

According to Josephs, G. E. Stimpson had three avenues open to it in advancing the state of its automation capability: bring in another, more sophisticated device to replace the 6405; farm out all work to a service bureau; take on an even greater sophistication by hooking up with an on-line system, such as the Maguire company offered. Use of a service bureau had been done before by Stimpson while using its 6405. Zarling acknowledges that "we desperately needed" other equipment in support of that machine.

"What they did was very clever," says Josephs. "They said, 'we need a minimal piece of equipment, and we can go buy, at certain periods, time on more sophisticated equipment to handle our specialized, infrequent needs . . . .'"

To this Zarling said: "When we reached the point where we were convinced our present equipment wasn't capable of supporting us any longer, we studied those three avenues Jerry Josephs mentioned. We turned down the avenue of putting in more sophisticated equipment

Josephs Schuman

"capture and control this information and you'll be running your business better . . ."

here, the reason being that we didn't think we could support the equipment personnel-wise. We could not hire, literally at any price, not only the people we needed to program, but the personnel we needed to operate this kind of machinery. We were even having trouble with (the hiring of) key punch operators."

What does a company with problems such as those do? "In effect, we said we'd like to lay our problems in someone else's lap," Zarling recalled, "and this was the primary reason why we went to Maguire. They were able to do for us what we didn't think we could do for ourselves."

One vital *thing* the company wanted to do was incorporate a newly devised pricing system, now trademark registered as the "Tru-Price-Plan." Briefly, in the Tru-Price Plan Stimpson is offering a *fixed* price on every item it sells; it is fixed as to unit sales and as to larger increments; products, increments and prices are cataloged in a catalog which codes and describes all inventoried items. The catalog is loaned to customers under contract strictly as a confidential document, to be returned upon termination of the contract. (This pricing plan will be explained later in greater detail.) This played an important role later when the decision was made to use Maguire's program with the IBM 360/30 on-line computer system.

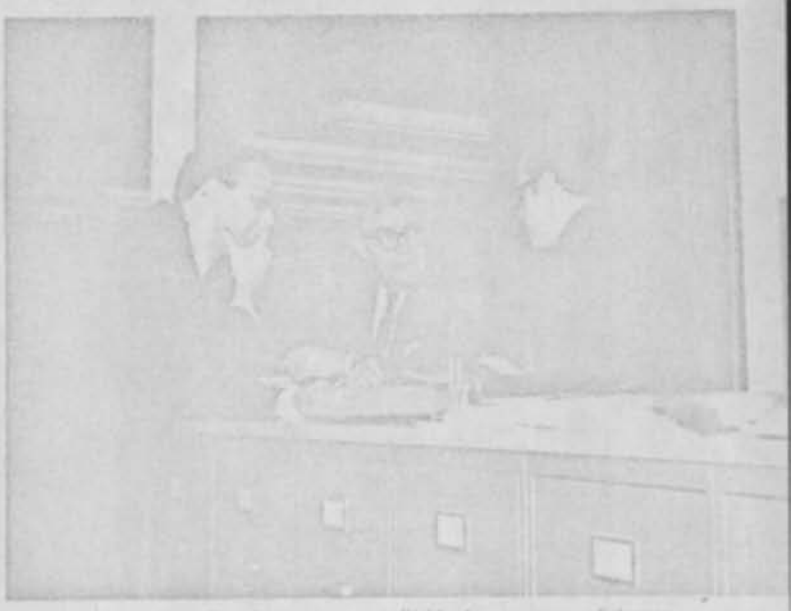
Inventory Control, a Scary Matter

"The thing we realized at this point as we looked for new and better equipment," Zarling said, "was that inventory control, which was the thing that scared everybody most, was probably the next most important matter after sales analysis that we could use data processing for. It was becoming so expensive to receive merchandise, because of transportation costs and coping with a multitude of pricing plans of Stimpson's hundreds of suppliers! It had gone beyond my scope; I'd lost the ability to be the best buyer for my company."

Part of the problem in businesses like Stimpson's, as Josephs sees it, is that management is forced to suffer consequences because of its limitations in being able to absorb (without computers) all the data that is available to it. He will drive home the point that there is a "pot-load" of information in any distribution type company. But some—perhaps most—firms are not able to harness it and convert it into useful energy, such as reports which can be used to make pertinent decisions.

"If you are able to capture this kind of information, control it and make decisions based on it, you've got to be running your business better than if you were not doing these things," Josephs asserted. "The name of the game in any distribution business, because its cycle is so simple, is cash in the bank, which gets turned into inventory, which is turned into receivables, which is turned back into cash in the bank!

". . . So, the goal here is primarily to increase the volume as quickly as is humanly possible on the minimum resources necessary to support that activity."



Josephs Bickford Schuman

"... with EDP and Tru-Price we can compete with anyone; we're ready on any terms ..."

Without a data processing system, this is no easy trick, he says, simply because many dealers get involved in areas of business that they are not especially rigged to handle. "You are not a bank," Josephs says of the office products dealer. "You are not in the business of carrying or lending money to your customers, and you are not in the business of lending money in effect to your suppliers by having more inventory than you need."

What dealers must remember, Josephs advises, is that their business is keyed to "getting the goods in one end and out the other as quickly as you possibly can, never having any more on hand than you need, never having any more receivables on the books than are necessary."

For growing companies like Stimpson, which plans to double its business in five years or less, management must be free of routines that inhibit the ability to direct the "in" and "out" flow of goods by their companies.

Zarling's experience with the 6405 proved to be the turning point in his thinking about what data processing systems could do in "freeing" him of routine sales checks, etc., for other—say marketing—tasks.

"I said that our little 6405 equipment increased our sales and part of that sales increase was due to our salesmen being more professional (by virtue of having preset prices in three sales increments, etc.)," said Zarling, verbally backtracking to make his point.

The IBM 6-605, shown above, was the first equipment in Stimpson's automation program. It automatically priced and figured accounts receivable.

Invoice Illustration Key

1. Operator at Stimpson enters the customer's account number on the IBM 2740 Selectric tele-processing machine.

2. Computer responds with the name and address of the customer, writing it in both the "bill to" and "ship to" sections on the invoice.

3. Variable information, such as territory, department, account number, terms, shipped via, customer's order number, Stimpson's order number, etc., is typed by Stimpson's operator.

4. Operator then enters customer order with product codes and quantities and any other applicable data.

5. Once the computer receives coded order, it responds with product descriptions, prices and extensions. (Products inside the square denote two-line product description.)

6. After products have been described by the computer's memory, Stimpson operator depresses "Total" key and enters any discount to which customer is entitled.

7. The IBM 360 Model 30 in New York then responds with totals for the completed invoice.

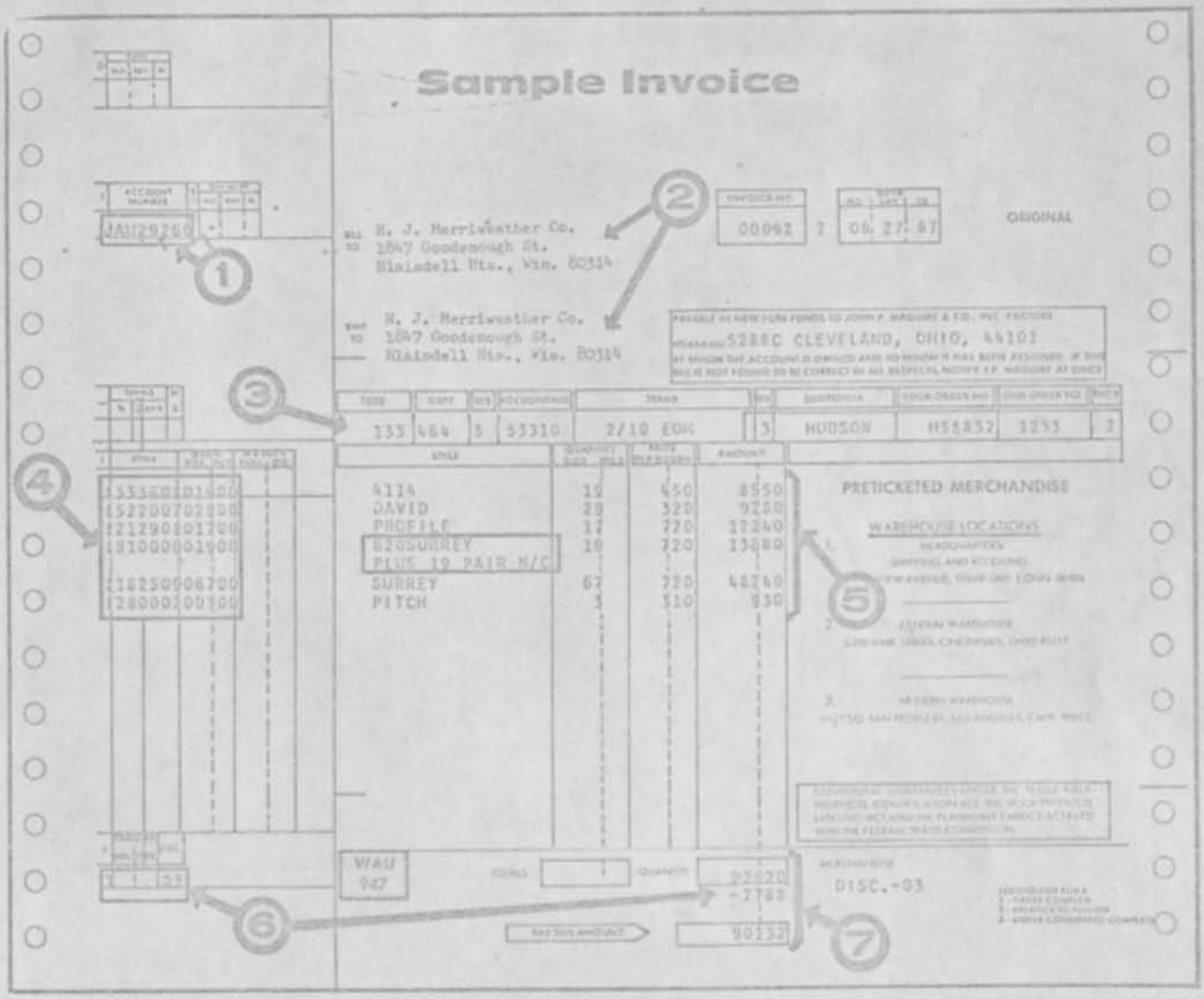
"But the key word," he continued, "is *part* of our sales increase. The *rest* of our sales increase came about because we had the *equipment* and *management* able to figure out how they (salesmen) could use that equipment to make more sales to *other* customers. So, when we put that system into effect, we evolved a new plan of selling, particularly to the larger customer, which has been very successful. That plan is our Tru-Price Plan . . . and it is only profitable because we have all of the information we need coded. . . . But the fact of the matter is that this information had to come first. No matter how many years I might have thought about this plan of marketing, and it amounted to quite a few years, I couldn't have implemented it until we got the data processing equipment.

"We got the equipment and the plan that had been in the back of my mind now became possible," he continued. "We started it, it grew. So much did it grow that we're ready now (after a year and a half) to make it bigger."

Another of the reasons for the success of the Tru-Price Plan is that EDP has cemented a closer relationship between customer and Stimpson, Zarling noted, adding he is talking about the big contract customer. Not only has this led to increasing turnover of Stimpson's existing inventory, but it has also brought customers to order items from that company which it didn't previously stock.

Josephs' explanation for this turn of events is that Stimpson has, through its marketing system, relieved some of the burdens off the shoulders of purchasing agents it deals with. "Put yourself in the shoes of the purchasing agent," he says challengingly. "His responsibility is to get goods when they are needed at the best possible price. Because of their marketing strategy and the techniques they've developed in support of it, Stimpson is able to support the needs of any major purchaser, and fulfill for that purchaser his basic responsibility. They (Stimpson) have the inventory to support his demands, their prices are competitive, and they can solve many of his problems, which they are doing. In addition, this customer might purchase many other things as any big customer might. Take this burden off the purchasing agent's back, substituting Stimpson's expertise for off-the-cuff judgment he might use . . . well, this is an ideal solution for this guy!"

Creating a system such as that developed by Stimpson and which soon will be rounded out and enhanced by the Maguire company did not develop without the question of "how much is it going to cost us?" being raised. Zarling readily admits that the cost factor was a "very, very big" consideration indeed. While he is not as impetuous as it sounds, he said going into EDP was done on the basis of an educated impulse. "We did it the same way we decided to build a new building," he laughed: "I'll take that one!"



There are risks in going into data processing. In the situation of Stimpson, the gamble wasn't as great as it might be for some companies, both large and small. The complexity of a given firm and the start-up costs to overcome this complexity, its ability to absorb costs during the shake-out are two of many important matters to consider when thinking about plugging into EDP's mainstream.

"This is a very difficult problem to discuss because it will vary with every guy you talk to," Josephs contends. He said there are certain basics involved: "Any time you go into a change from a manual operation to an automated operation, you are gambling slightly. So you want to keep your risks down. That's why Stimpson went to the cheapest machine. When Mr. Zarling went on the 6405, he did not have the Tru-Price Plan in effect. He couldn't have. He had no idea what the gain of the Tru-Price Plan was going to be. And while he probably suspected his salesmen were going to become more professional, he *really* didn't know that.

"'So let's limit our risks right now,' he said, 'let's go to the thing we think will work at the minimum expense,'" Josephs continued.

Measuring cost of entering into data processing is made difficult because of the varying costs to different dealers of the coding of file materials; training of inside personnel; retraining of salesmen; the patience required to develop a workable and efficient system.

"It's very, very difficult to attach dollars to," Josephs said, "because there's an enormous emotional cost here . . . particularly when starting out from scratch."

The example Stimpson has set—starting from scratch a year and a half ago—seems almost unbelievable to Josephs. "I'm in awe of these fellows seeing what they've done in such a short period of time and with the degree of professionalism," he praised.

Schuman interjected that the initial decision to go into data processing was much more difficult than the company's second decision to hook onto Maguire's on-line tele-processing system. "It was at first real tough to justify

"the toughest step was
the first . . . accepting
the 6405's rental cost"

Zarling

how we could go into it . . . but I think we saw the handwriting on the wall: that in order to grow or even stay the same size, which you can't afford to do and stay alive, we had to go to automatic data processing equipment sooner or later. . . . So it was a question of thinking of more expense and saddling ourselves with an $800 to $900 rental or else. . . ."

Zarling concurred: "That was it! That was the toughest step we had to take. From a bookkeeping machine that we bought 10 years ago for $3,500, and we almost died when we bought it, to a $900-a-month rental. This was a very, very tough decision to make."

At that time, in fact, Zarling didn't actually know what machine would best fit Stimpson's needs, a point brought out by Schuman: "I think we kept looking for IBM or National (Cash Register) or Burroughs to tell us of someone in our industry who was using their equipment, if anybody they knew was successful, how they solved their problems. We weren't able to come up with any answers, even though we thought, 'Surely somebody these national companies deal with was like us, with 15,000 to 20,000 items of inventory, with problems of color, styles, sizes and stock numbers.' But they couldn't give us any help. So we felt we had to pioneer it if we were going to go into it. This was our gamble."

The Questions Other Dealers Face

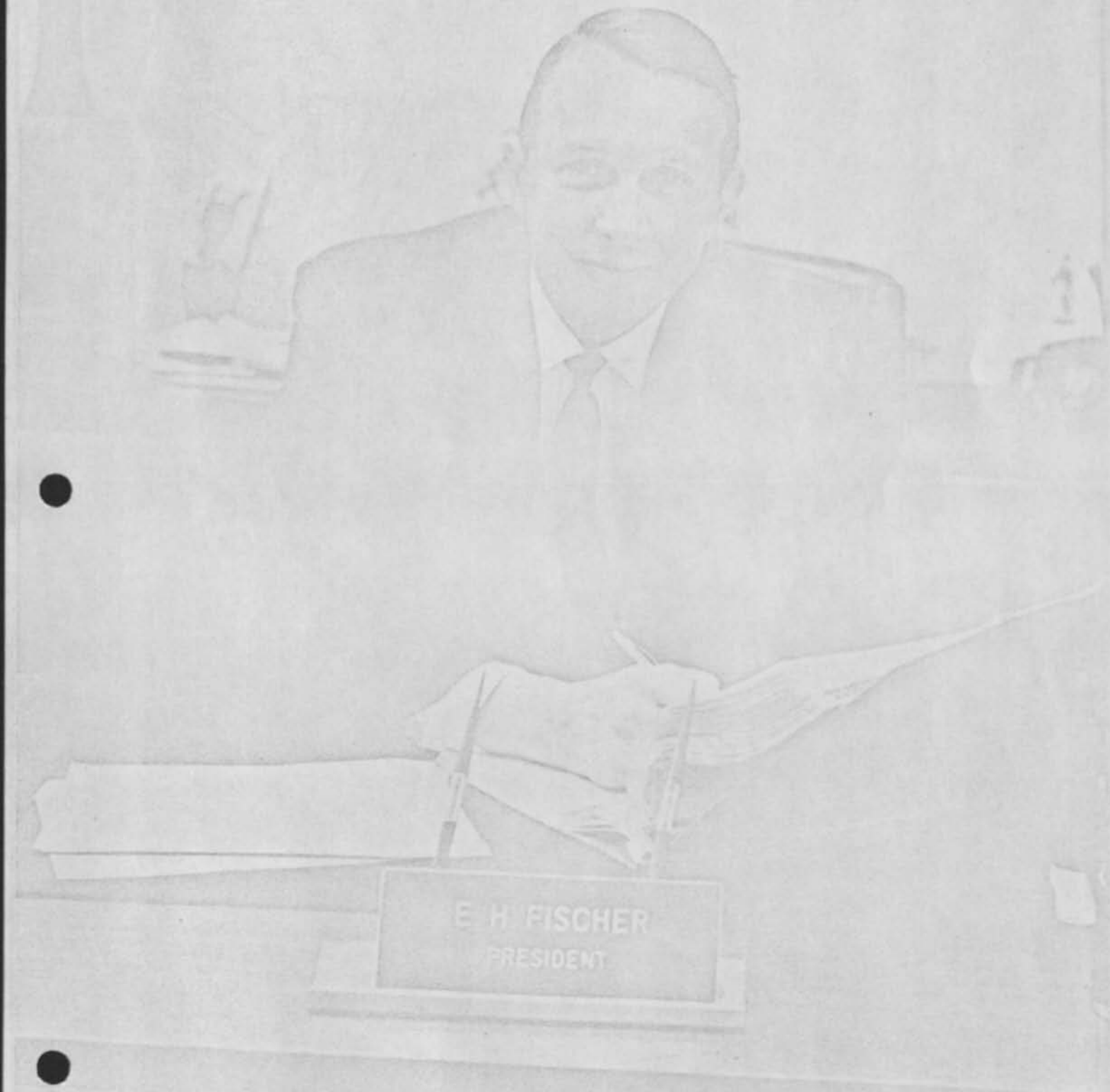
At that time, Schuman said, billing was the company's worst recurring problem; customers were getting different prices on hundreds of items which were recognizable only by manufacturer number. This was an everyday problem because only a few "very well-qualified" people knew the correct prices on these items. The problem was compounded in the extension of terms, and a newly introduced state tax.

Forced to the wall, Zarling and Schuman considered alternatives, risky or not, expensive or not. "We saw the trend," Schuman recalls, "so we figured we could justify our effort on the basis of getting routine work done."

The criteria used to decide whether or not ADP or EDP is right for the moment vary with each and every dealer. Perhaps every dealer could use it, Josephs says, but perhaps also not everyone can afford it. On this matter he elaborated:

"Sometime they (dealers who have not adopted automation) are going to have to sit down and ask themselves, 'Am I satisfied with this level of business, or do I want to grow?' If they want to grow and they are reasonable businessmen, they will have a growth goal in mind, whether it be for the next 12 months or the next 36 months. Then, when they sit down and ask themselves the question, they need to say: 'What do I need to support it, and is the profit goal going to be in line?' Then, you kind of back in to what you can afford and spend now, a year from now and five years from now. But again recognize that all future planning—all planning in general—is educated guesswork. And the effectiveness of it is dependent upon the degree of education of your business and how much you know about your market . . . competition" . . . etc. □

Plug Into EDP for $1,000 Monthly



It may soon be possible for any dealer in the country, no matter his size, to enjoy the benefits of electronic data processing for as little as $1,000 monthly, and . . .

With No Expensive Investment In Hardware

It was bound to happen. It was just a a matter of time before some dealer devised a way to utilize electronic data processing in a program that is relatively simple to understand, extremely effective and, most importantly, economically feasible for virtually any size dealer.

The dramatic breakthrough at Macke-Williamson Co., Inc., of Rochester, N.Y., opens the door for dealers anywhere, of any size, who are commercially oriented, to "plug into EDP" at a cost of approximately $1,000 per month.

Already two other dealers are tied directly with the M-W program and at least two others are close to formalizing similar arrangements. To dealers elsewhere in the nation it means that a pattern has been established that can be duplicated anywhere at a monthly price that is within virtually every retailer's range.

It took several years before Eddie Fischer, M-W president, felt confident that the system would stand any kind of close scrutiny. Four years ago, he and his associates —Bill Fisher, treasurer; Bob Barbour, general manager; and Jack Harris, vice-president and sales manager—waded into the uncertain waters of data processing. After bobbing up and down learning the laws of buoyancy, he is now an accomplished artisan and feels he knows most of the strokes needed to stay free of trouble.

The two companies which have joined M-W in a common program arrangement with a local computer firm are Eaton's Office Supply of Buffalo and Standard Office Supply of Syracuse.

The growth of all three companies attests to the economics, efficiency and adaptibil-

NOPA Might Use M-W Plan in its EDP Package

The acceptance and workable precision of this system has already captured the attention of the National Office Products Association, which has been striving for the past few years to develop a program that any dealer can utilize. The 1969 NOPA Regionals included a session based entirely on the M-W formula and dealer reaction to it, according to NOPA officials, was excellent. NOPA Research Director Donald Haspel has conferred with M-W officials at length on several occasions and the Association is seriously considering sponsorship of a system quite similar to the M-W plan as one feature of the nationwide program it will offer in this field.

ity of the system to the office products dealer. Macke's sales growth is booming ahead at nearly 20% annually; Eaton's sales have jumped ahead 14% since tieing into the system a little over a year ago; Standard hasn't yet grown noticeably, says president Gerald Meyer, but it has made great improvements in its accounting operations.

"The system answers virtually every management problem in this business," says Fischer. Any automated system is a demanding one. You have to do things in an extremely orthodox manner in data processing. You don't have the undisciplined flexibility you have in a hand-posted system.

Few dealers who have plugged into EDP will argue it leaves little room for vagueness, generality and sloppiness. James Eaton, president of Eaton's, underscores the point when he says, "If we didn't have the full cooperation of our salesmen, it wouldn't work." He points out that when the company started, it averaged 280 exceptions (errors) per week. That not only is costly, it could have been critical had it not been corrected. It took the effort of the salesmen. Today, the company has whittled this figure down to 20 exceptions per week.

Getting the gears meshed wasn't easy at Standard, according to Meyer. "It took six months before we got it running, but now we've got better control of inventory and tighter control of accounting procedures." He guesses that inventory has been cut nearly 15%, and while that is well and good, it is the advantages he has gained in the accounting department that are paying off handsomely. "Our bookkeeper was out for seven weeks," he relates. "But with two days' training, one of the other members of the office staff was able to do the entire bookkeeping function. The same thing happened with a pricing clerk, who went on vacation for two weeks. The same fellow who did the bookkeeping work, who never had any experience in pricing, is now doing the pricing."

Great All-Around System

While everyone agrees this is the "coming way to do business," there is divergent opinion as to what facets of the system are most appealing. For example, Macke-Williamson, which does an annual volume of $2 million, believes it to be a great all-around system; Fischer points to the marketing advantages it has for salesmen, how it reduces inventory, how it eliminated so much of the unproductive and boring handwork and clerical chores, routine purchasing, etc.

Eaton's, with an annual volume in the vicinity of $1 million, is happiest about the improved results it has brought salesmen, the control over inventory it now has, and the cost savings in personnel, etc.

Standard, on the other hand, sees the system as costly but as "the way business of the future will be performed," according to Meyer. "We run a tight company," he quips, "so I can't see where it would replace personnel." With a staff of 15 people and sales in the neighborhood of $750,000, Meyer feels he's getting good performance from a staff that has "no water to squeeze out."

In contrast with this posture, Eaton's lopped off two employees when it adopted the system. This reduction in staff has paid for the firm's use of the system, which all agree runs close to $1,000 per month for each member. This is a flat, monthly rate, which all say they prefer to "line rates," or "work load rates," etc.

Probably nobody knows the system as well as M-W's Eddie Fischer and general manager Bob Barbour. It was those two, working with a service bureau expert, who devised it "with the assistance and cooperation of everybody here," they are quick to add. Even though the system demands exactness on the part of salesmen, bookkeepers and management, it is totally worth the effort, say the system's foremost proponents. "It gives us a marketing edge over the competition," Barbour beams, "because all the information we need is right here in this . . . we call it a scroll."

Scroll Arms Salesmen to Teeth

The scroll, in essence, is a master file of product or inventory information. It virtually arms a M-W salesman to the teeth with meaningful inventory statistical information which not only impresses customers, but helps them make correct buying decisions. For example, a M-W salesman knows exact prices, exact costs, discount limitations and possibilities, and he knows what is currently in stock at M-W's warehouse. Blended with the talents of 10 salesmen now employed at M-W, this "marketing tool," as Fischer calls it, makes the company's salesmen tough to compete against. It is almost as though the principles of synergism were suddenly patented by M-W, the way Harris talks about "marketing advantage." He will not "crystal ball" the future, but he shows little doubt that M-W's growth targets (20% in sales per year) will not be met.

Who is likely to use this elaborate and comprehensive system? Any commercially oriented dealer. Says Fischer: "I think if you have the proper programming and documentation, if you have the proper flow charts and the proper written detail of your system, I would say that it would be sensible and reasonable to totally put a system such as this one into operation anywhere." M-W's package is processed by Paperwork Data-COM of Syracuse, N.Y.

To closely study the system is to study M-W, Eaton's and Standard. They all use the same general forms, except for their own identification. With the exception of payroll and accounts payable, every function of the company is touched, and controlled, by the infinite capacity of the computer, which in this system is the IBM 360, series 25.

What hastened M-W's plunge into data processing was Fischer's disdain for a growing amount of pencil work and time-consuming "nitty gritty clerical work." Macke-Williamson's step into automation was a natural one. The company was highly sophisticated with an efficient manual system, which included every function in the business. With roughly 6,500 items in its inventory, the manual system was taxing its personnel. The company has reduced the inventory by nearly 20% since its adoption of data processing.

M-W treasurer Bill Fisher (right) and salesman John Walker check "the scroll," which is the company's master file of product information. The scroll, according to M-W officials, is a marketing tool that makes the company's salesmen tough to compete against.

In examining his system, Fischer wastes little time getting to what he calls its "meaty" aspects. For example, he starts off with the sales order form. This is a four-part form, the original being labeled "Data Processing"; part two is M-W's "File Copy"; part three is for the customer as a "Packing List"; and part four is used (and is marked) as a "Delivery Copy." (See illustrations pages 50-51.)

Each of the parts is alike except for some deleted information (such as pricing, discounts and cost figures on parts three and four, which the consumer ultimately sees. The typical form can hold up to 10 product orders. There is nothing particularly unusual about M-W's order form, save its completeness and the fact it is the source of information for everything in the system.

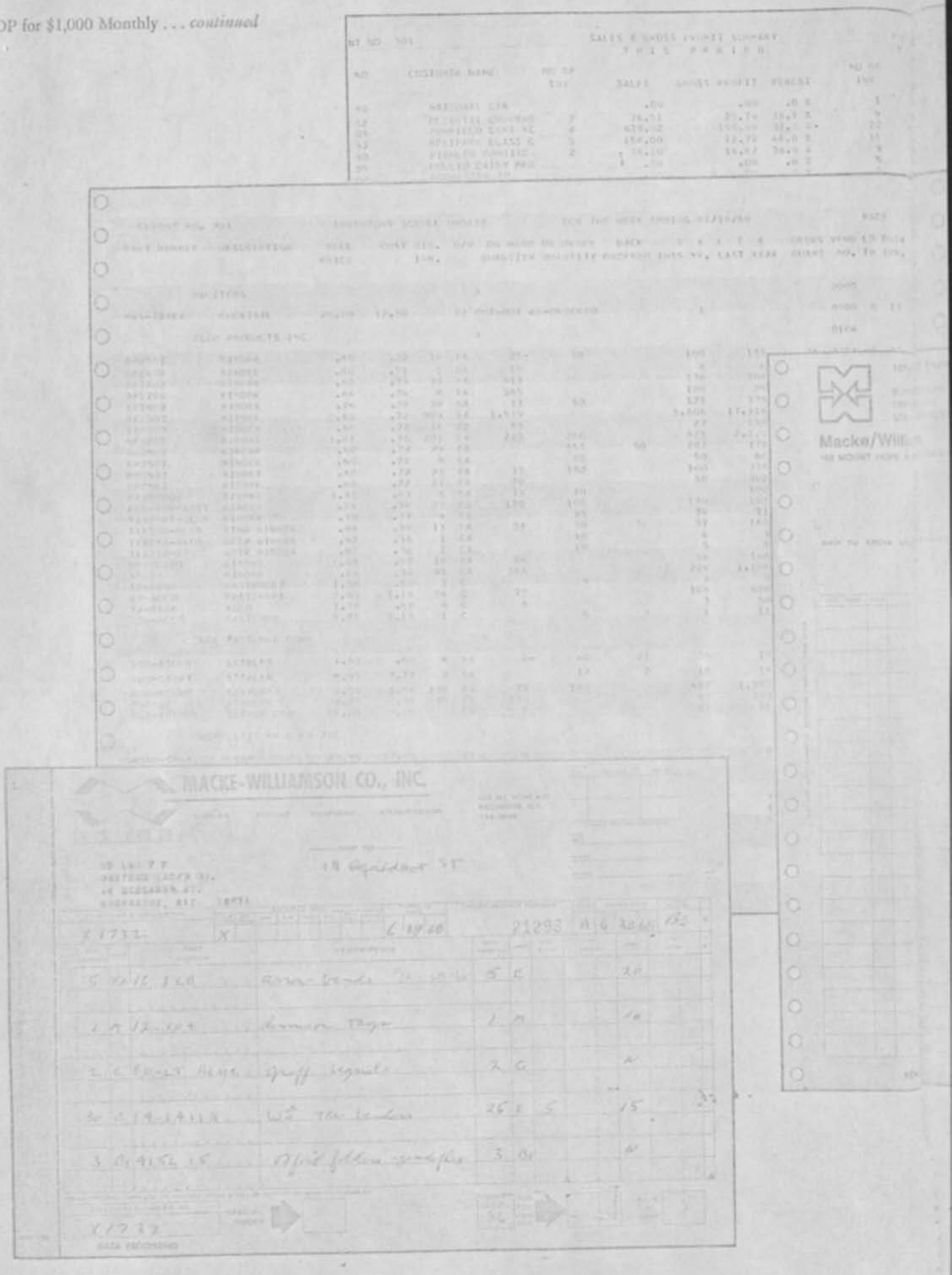
Form's Structure Is Explained

Running through the form's structure, for example, it has such ordinary information as the customer's name and address pre-imprinted (by addressograph plate); above the name and address there is embossed a customer number, which resembles a social security number. This number's digits are important to the system. Using Rochester's Central Trust Co. as an example, Fischer explains the customer number as follows: "The number begins with '03'. In this number of two-digit potential, only the three is important. It stands for the third letter in the alphabet, which is the first letter in the company's name. The next group of numbers—'120'—relate to Central Trust's being the 120th account in the third alphabetical grouping. Next, the number '5' stands for the firm's taxability rating. Finally, the '3' which is called a 'check digit,' is a number used by the computer to prove the order's authenticity."

There is a direct relation to what is written on this order form and what appears in the company's inventory scroll. The scroll, which is a milieu of product information, holds the coding key to the system; there can be no deviation from the numbers assigned to the product items in the scroll's data processed pages. It is the salesman's responsibility to write an order correctly so as to avoid mistakes which will cause delays and costly backtracking.

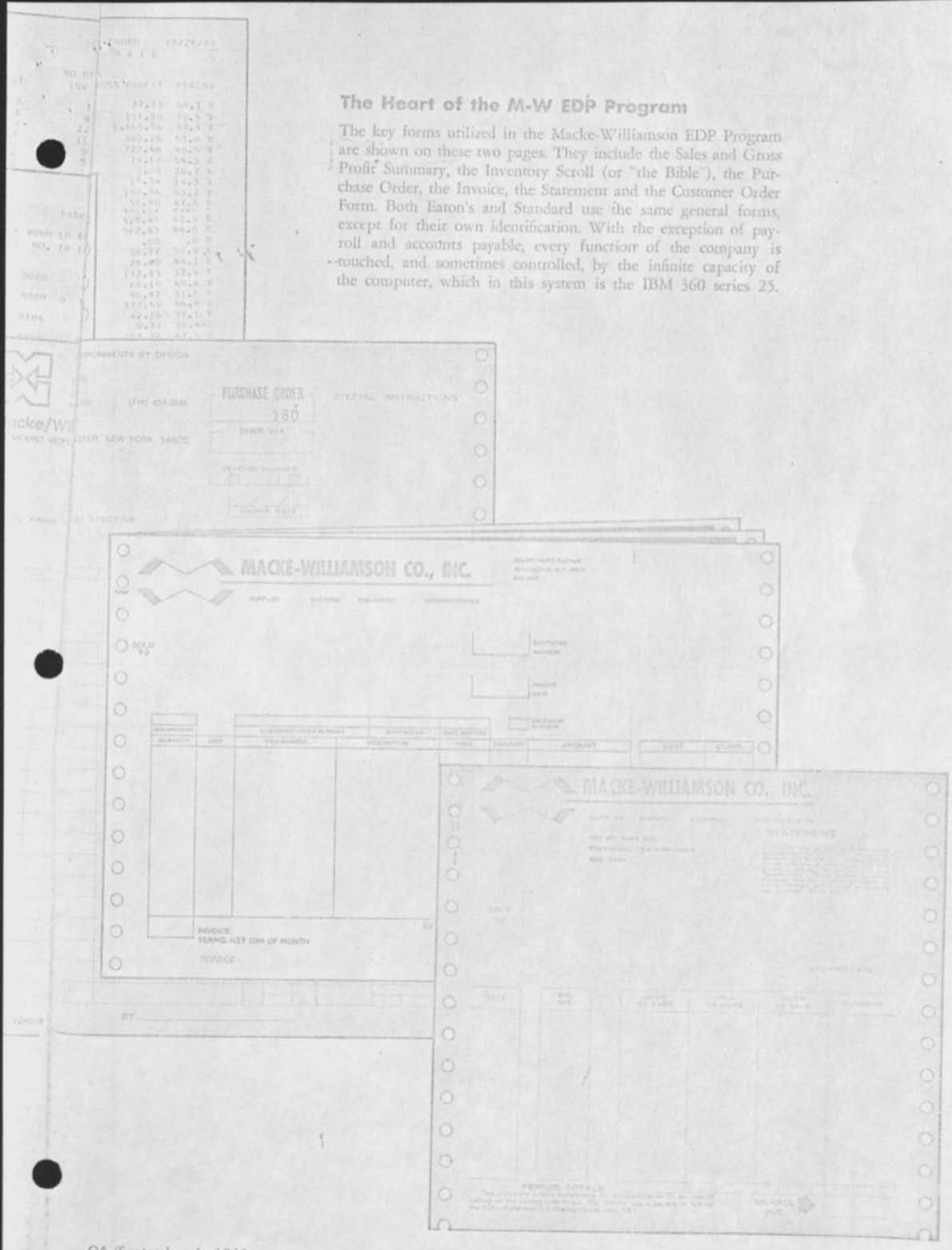
The product number in particular must follow the scroll to the nth degree, Fischer reiterates. It is the index to the product's position in the computer system. This number, interestingly enough, is identical to the number used by its manufacturer to identify the product. M-W also provides for a description of the item ordered, with the salesman given some leeway in writing in this description although most simply identify the manufacturer and the product by generic name.

Another figure the salesman must write on each order form is the discount; all orders must have some discount data. A product falls into one of four discount areas; it is discounted at 5%, 10%, 15%, 20% or not at all, which calls for a "net" indication. In addition, there is generally a discount for quantity orders, but a salesman must consult with Harris on such orders. The customer order number, Fischer points out, is written both at the form's top and bottom because of packing list use (page three of the form) which will be described later. Also, there is a provision for the special order, that kind of order calling for items not


MACKE-WILLIAMSON CO., INC.

The Heart of the M-W EDP Program

The key forms utilized in the Macke-Williamson EDP Program are shown on these two pages. They include the Sales and Gross Profit Summary, the Inventory Scroll (or "the Bible"), the Purchase Order, the Invoice, the Statement and the Customer Order Form. Both Eaton's and Standard use the same general forms, except for their own identification. With the exception of payroll and accounts payable, every function of the company is touched, and sometimes controlled, by the infinite capacity of the computer, which in this system is the IBM 360 series 25.



Bob Barbour, M-W general manager, is particularly pleased with the M-W system because "it gives us a way to handle both stock and special merchandise."

Clerks find that the Rochester firm's EDP package has taken a lot of the "nitty gritty" clerical work out of their hands. All of the forms utilized are simple to understand and relatively easy to work with.

regularly carried in the M-W inventory, at the bottom of the page.

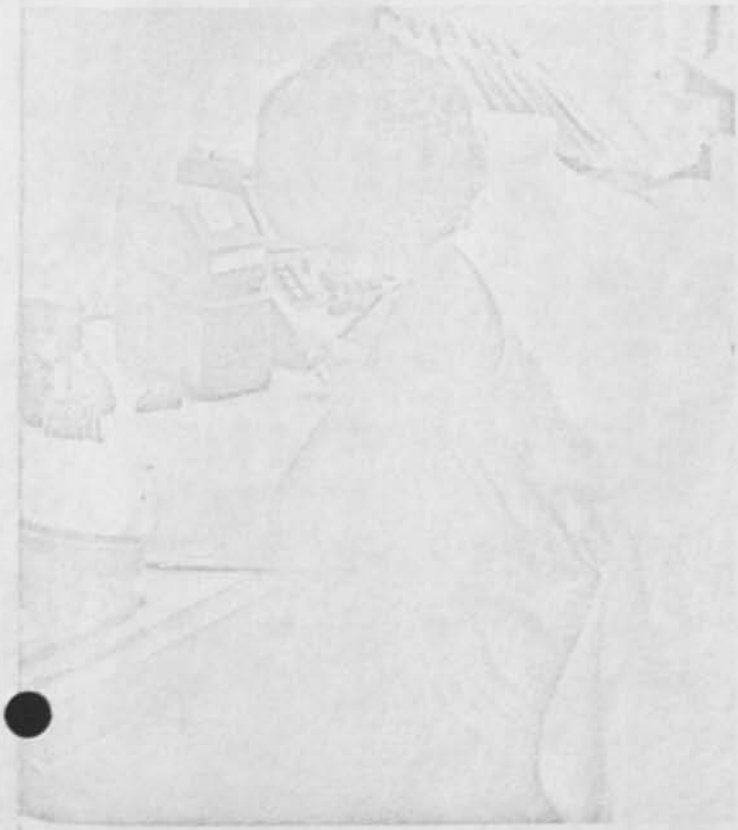
Verbally "walking through" a typical order, Fischer explains as follows:

"As the salesman I have addressographed the number of the customer (Central Trust Co.) order number, 12159, which I also write at the bottom. I initial the form 'A' because that's my salesman designation. I write in the date and where it says 'laid out by' will probably be 'B. S.' for our warehouse manager, Ben Skorski.

"Then I start to write the order. First item is one each (in the quantity ordered and unit columns) 'ST,' which stands for 'steel,' hyphen, 'RULE,' hyphen, 18. This is a National rule (since taken over by Bates, he noted), and it is now up to me to determine the discount I'm going to sell it for. A code following the manufacturer name indicates a maximum discount allowed."

He follows the same procedure with three more items, explaining along the way that in the M-W system the column marked "unit" designates the lowest form a product comes in. For example, when selling Oxford Pendaflex folders a M-W salesman sells by the "box," even though they are available by the 100s and 1,000s. "We like to stick to standard packaging," Fischer says, "and also we like to break that down to its lowest common denominator."

Picking up his "verbal walk," Fischer writes in "6" for the quality ordered, "BX" for the unit, 4152X2—the part number which conforms to that of Oxford—and "N" for the net discount on this item.



Finally, there is a provision for out-of-stock items. The salesman with his inventory scroll up-date, which is printed each week, can tell a customer almost to the moment what is and what is not in stock. It is virtually a portable perpetual inventory system. Out-of-stock situations seldom occur, as the company's purchasing department has lead time carefully calculated to avoid "out" conditions. There is less than a 2% incidence of back orders on stock merchandise.

When a product is out, however, it is back-ordered. Whatever is available is delivered in routine fashion. On the order form Fischer wrote up to describe this, the last item—W. J. (Wilson Jones) columnar pad—was out, the order calling for 10 items, only six being in stock. Thus, four were back ordered.

In essence, that would complete the salesman's work on the order. He could write up to 10 different items on it if that many were called for. "This order would now go to the shipping room," says Fischer. The shipping room will check off and lay out the order; here, again, the product number and description will identify the item for M-W's warehouse manager, who is a veteran of 40 years in this business.

Unlike warehouse procedure of the past, products stocked in M-W's inventory are no longer grouped generically. They are stored according to manufacturer and manufacturers are arranged alphabetically.

Arrangement Speeds Stock Pulling

Traditionally, warehousing has been grouped by like items, which made it easy to substitute items. With a scroll inventory at hand, the salesman will know what he sells will be the exact item shipped. Arranging by manufacturer line offers the advantage of quick stock pulling and filling and merchandise inventorying.

"When Ben pulls an order," Fischer explains, "he's going to write (on that order) the quantity shipped and the unit . . . like one steel ruler . . . six boxes of Oxford Pendaflex folders and . . . six columnar pads. In that situation, he sees that 10 have been ordered but only six are on hand. So he writes '4' in the back order column.

"At this point, he separates the forms—parts one and two come back to the office. The third and fourth copies are used by the warehouse crew. The third copy (a pink one) is razor-knifed in two parts. The top part (which includes the name, address, upper customer order number—and 'shipped via,' 'order invoice number,' and 'order date') is used as an address label for the package containing the order. The bottom part is stuffed inside and serves as a bill of particulars on the order." The fourth copy is for delivery purposes; the route man must get a signature on it for proof of delivery, Fischer points out. "There are times when a person orders something only to have someone else receive it and we get called by the first party wondering what happened," he smiles. "This signature tells us who received it on what day."

Unlike warehouse procedures of the past, products stocked in M-W's inventory are no longer grouped generically. They are stored according to manufacturer and manufacturers are arranged alphabetically. The warehouse operation comes under the watchful eye of Ben Skurski (top, right), a veteran of 40 years in the business.

Meanwhile, at the other end of the building in the company's offices, the orders accumulate and are sorted in what Fischer calls "batch sequence," about 50 orders constituting a batch. Back orders and special orders are lumped in separate batches along with several other batch groupings. After being audited in the company's offices, a control scramble proof being entered, part one of the order form is sent to the local service bureau, where the media is processed and the invoices are printed. "Now we want to be totally certain that what we send out comes back," Fischer emphasizes. "This is our audit control; it could be that someone might lose a piece of paper (such as an order form), for example. So, part two is filed alphabetically by customer name in a vertical sorter in our office, where it stays until such time as the invoice is returned to us by the service bureau."

Macke-Williamson's invoice is a three-part form. Part 3 (office copy) is purged from the customer's original and duplicate copies. In that all parts were originally similar, parts 1 and 2 are mass cut along the right side of the set, cutting away the cost and commission information before being mailed to the customer. By routine, sales order forms are accumulated and sent to the service bureau on a daily basis. Then they are keypunched into the computer system. Once a week invoices are returned in final form to the company. There is an audit control box on each invoice in which a number is automatically processed which must correspond to a similar audit number on the sales order form.

if this is the case then the company knows several things.

"First of all, we know we've got the invoice from the sales order we originally forwarded to the service bureau," Fischer points out. "Secondly, we know they have keypunched in every unit that we have sent over to them." (The audit correlation proves or disproves this; if it is disproved, then another order for the missing item would be filed—this seldom happens, Fischer says.)

Upon receiving the invoices from the service bureau, M-W office workers mail original and duplicate invoice, parts one and two; part three is the file copy which is stapled to the file copy of the sales order form. Together they are filed in a customer folder, which holds all the business transactions involving that company for an arbitrarily chosen time period.

In addition to the invoices, the service bureau also gives M-W a tab card, one of which relates to individual invoice. "In effect," says Fischer, "the tab card becomes our ledger card." These tab cards carry the customer's number, the date of the transaction, the invoice number (taken off the sales order) other sales facts which would be applicable, sales commissions and the total invoice cost and total amount.

In correct form, the invoice will reflect exactly the information of the sales order form, except for the price information, which is stored in the computer. The discount, on the other hand, is hand written by the salesman, and, being a variable, it determines what the final price of the item will be. There is also a device within the system to override any price or cost data that has been preprogrammed in. This serves such general purposes as indicating a negotiated net selling price in lieu of a list price less discount. The total or extended net amount, the price to the customer, is all the information the customer gets. On the company's copy, however, the machine lists the cost of items on the invoice, the salesman's commission. The sales tax factor, which relates to the "5" in the customer number, is entered at the bottom of the invoice and, when added to the extended net amount, makes the total payment due Macke-Williamson.

Back Order Handling Simple

The next facet of this intricate yet fundamental system was how to handle a back order. Fischer characterizes this procedure as "simple." All items on back order are keypunched into the system. One of the things that happens in this process is that the company's inventory is being affected. A four-part back order form is printed by the computer; nothing is done by the salesman at this point—the computer does all calculating of prices and inserting of necessary data. Back order copies are made out by data processing, an office file copy, a packing list copy and a delivery copy. In essence, the back order is a small cousin of the regular order form. It follows the same route through the warehouse as a regular sales order form. When the factory merchandise arrives, as a matter of fact, the only step taken that is different from routine orders is that the shipping manager must go to the office to pull the back order from the back order file.

"What makes this a desirable system is that it incorporates just about all that a dealer needs," says Fischer. "What we've attempted to do in this system is to embody or encompass all the clerical chores, and all of the needs in one basic, free-flow system. About the only input (for the computer) that is hand-written, as far as Macke's is concerned, is a salesman's writing of the order. And no matter how you cut it, there is no way you can demur from this."

There is no doubt Fischer feels Macke-Williamson has the most complete and effective data processing system in the office products industry. He revels in delight in piecing together its intricacies, its so-called "by-products." "So," he says, "as a by-product of writing a simple order, we have affected an inventory change; if that has affected a merchandise purchase, we automatically will purchase as a by-product; we have created an accounts receivable card . . . and we have, as a by-product of that, set up a condition where we can run statements, where we have sales statistics, where we have aging, where we have sales commissions, purchase order writing and pre-costing."

Salesmen Have Marketing Edge

More than anything else, it is the marketing edge and its implications that absorb Harris. Unless a competitor has a system with similar capability—and he doubts too many competitors do have it—he is of the opinion his salesmen have an advantage that few customers of logical mind will fight; his salesmen, he maintains, are as product knowledgable and marketing oriented as any salesmen in this industry.

"That's really the prime feature of this whole thing," he says with candor. "It's the marketing game, that's what we're in. And if a dealer could accept it and take it only as far as that (a marketing tool), if he knew what he had to sell, this, I think, would be really a fundamental and overpowering feature for his business. For the first time, he'd be able to tell his salesmen exactly what he inventoried, exactly what it sells for, exactly what the price and cost is, and he'd be able to communicate with them. . . ."

Much of the business of business hinges on the lines of communication between functionaries. It is Fischer's contention that data provided by his system, or even a similar one, gives management and sales (and marketing, advertising, etc.) the food for thought it needs to economize, present a more formidable threat for competition and develop a hitherto unknown degree of efficiency.

Of course, one of a dealer's most frequent concerns is purchasing of new stock. Because it is automated, M-W's purchasing is a relatively simple procedure. When reorder levels are reached in the company's inventory, the "machine," Fischer's term for the computer, signals purchasing to reorder by preparing a purchase order.

Stock items are printed out by a computer on a four-part purchasing order. Special items not in the inventory are hand-written or typed and especially designated as a special

order, such orders do not go to data processing, since it is foolish to keypunch something that is a non-stock item. This the machine would reject.

There is an option the company has, however, to write stock merchandise and special order merchandise on the same order. To do this, and it presents no problem, according to Barbour, Macke-Williamson has the responsibility of relaying word to the service bureau that it has added the special items (in addition to sending them a copy of the order for keypunch purposes).

"What this system does give us is a way to handle both stock and special merchandise," Barbour says. "In all cases, what data processing has developed in terms of purchasing figures, I will see and sign. The big thing we have done is take away the nitty gritty of the clerical detail of writing up a whole batch of repetitive information."

The service bureau creates a tab card for each line item purchased by M-W from a supplier. When the firm's shipping department receives a shipment, it pulls the affected receiving copy and sends it to the purchasing department. What the purchasing department does is pull the affected cards from its files and send them to the service bureau, where they are fed—the information on them, that is—into the system. If the M-W order is only partially filled, it is up to the company to so designate on the tab card that goes to data processing the exact amount of merchandise received and it is tabulated by the computer's memory.

"So, at any given time, we know exactly what has been ordered, what has been received and what is due," Fischer says of his purchasing setup. The receiving copy, which is the last copy of the four-part form, ends up as the only permanent copy M-W keeps on its purchases. This is kept six months to a year.

Despite the fact that M-W is highly sophisticated and deeply entrenched and committed to automated operations, the company still runs an annual physical inventory. This is simply to catch occasional human errors that leak into the computer. This does happen, Fischer says. Preparatory to a yearly fiscal inventory, the service bureau prints out a deck of inventory cards listing all items by number, manufacturer and unit. The actual stock count is posted on the inventory card by the inventory teams. Basically, physical inventory is a check of the company's on-hand stock, which is transcribed onto the tab cards, which are then keypunched—with the information thereon—into the computer. "As a by-product of this run," Fischer says, "data processing will print out the item, its description, the value of the item . . . the cost and the count that was in the system previous to the physical inventory . . . then it will print to the side of this information the actual count, the actual difference of what actually existed on the shelves and what was tallied in the computer."

Discrepancies between the actual count and the perpetual count can be caused by numerous slips. Just taking the wrong item off a shelf and delivering it, assuming it got that far, or just miscounting the amount of merchandise received—the causes of error can be many, Fischer notes, regardless of any system.

New inventory items are added to the system simply by writing up purchase information on an entry sheet, which requires the usual data—vendor number, product part number, description, quantity, selling price, cost, etc.—for the computer. Once fed into the machine, the new item is part

Macke-Williamson's sales growth has been booming at the rate of nearly 20% annually since the firm adopted the revolutionary EDP system. The building M-W now occupies is not quite three years old. Previously, the company was located in downtown Rochester.

of the system and is henceforth handled by the computer.

Monthly statements are created on two-part forms, the original sent to the customer, the copy to the salesman serving the account. The statement, which is printed by the computer, carries the usual information of such documents —namely, dates, invoice numbers, extension periods (over 90 days, over 60 days, over 30 days and current) and the balance due.

Macke-Williamson pays its salesmen their commissions only after receiving a customer's payment on purchases. Sometimes this creates a time lag because of the tardiness of customer payment.

"If we paid our men beforehand," the M-W president continues, "certainly we would have to ask for the money (paid to the salesmen) back on credits, nonpayments, bankruptcies, etc." To protect against this possibility, M-W feels it is wise that an account knows how its salesmen are paid. This, however, is a sales responsibility. The salesmen found that customers are more understanding when they know they are waiting for their money . . . the customers are a little more reluctant to hold up their payments. In fact, this works exceptionally well. It also, he points out, tends to keep the salesmen on their toes—in pursuit of payments that are due.

However, the computerization of statements, according to Fischer, has given the company a "management advantage" which lies in the fact that everyone concerned knows exactly what is owed to whom—from customer, to M-W, to the M-W salesman. Fischer feels there is a point in back payment when a customer may become "embarrassed" to do any additional business with a given firm. Therefore, it is his aim to naturally keep accounts as current as possible. This, because of M-W's commission policy, becomes a concern of the salesman. "The men look at it," says the M-W president of a client's statement, "and make an effort to make their customers aware. . . ."

Accounts Receivable Geared to Tab Cards

Accounts receivable at M-W are handled with tab cards reflecting each open (unpaid) invoice. When a remittance check reaches the office, a tab card is pulled from a file and is used to replace hand posting or on-premises keypunching. The tab card, Fischer says, "is the vehicle we have for taking care of on an invoice basis our entire accounts receivable." The company has three or four trays of cards corresponding to customer invoice data. When a customer sends in his payment, the relevant number of cards are pulled from the file. The invoices left unpaid by the customer remain in the customer invoice card file until they, too, are paid at a future time. The basic fact is that an account is either "open" or "closed." If cards remain behind the customer name in the file, then it is open.

One of the highlights of the program for Fischer is the "backup" information it supplies. Perhaps of most benefit is the monthly recap of sales by salesman. "This gives us a listing of the total activity by account of all our accounts," he beams. "The first column is the customer's number, then his name, next the number of invoices for the account for the month and then the total sales.

"At the end of a run, we can see that salesman D had 187 invoices for a total of $8,100, which meant a gross profit of $3,100—his percentage being 39%," Fischer says. This information also covers the salesman's performance on a "year-to-date" basis. "You can measure one man's performance against other men's," Fischer says, "see where one's sales come from, and what a salesman is doing with individual accounts. We give the salesmen a copy of this material as it is helpful for them to know where they can concentrate more—or concentrate less. . . ."

The system devised by Macke-Williamson is almost all-encompassing. While the payroll and accounts payable functions are excluded, they don't have to be. It is only of Fischer's choosing that they are left out. As positive as any man that data processing is to this industry what the spade is to a gardener, Fischer still doubts the system set up for M-W would do much for the retail-oriented office supply dealer. "They may have many of the needs we have," he points out, "but the thing that would make it difficult for them (to benefit) is that a man behind the counter still has the burden of writing up individual sales tickets . . . to get them off inventory."

EDP "To Separate Men from the Boys"

There seems to be no doubt in the minds of Fischer, Eaton or Meyer that data processing, whether it be in form of their system or something else, is what will separate the men from the boys in the future of this industry. It is tailor-made for the dealer, however. It takes some amount of reorganization and adjustment to work the kinks out of a worthwhile system.

Meyer, although pleased, he says, with the results (especially the accounting and clerical work) of the system, still has bugs in the inventory system. "The other two fellows," he says, "were equipped with a purchasing agent in their businesses. In order to make the inventory system work perfectly, you have to have a guy who knows everything about purchasing . . . like Macke's does, like Eaton does. We don't. So, as a result, the purchasing end of the thing is not working as good as it should. . . ."

Despite this nagging problem, however, Meyer is extremely optimistic about the system. He more or less spoke for his two colleagues in the system when he gave the following appraisal:

"I think for the average dealer, the greatest benefit is the accounting he gets out of it. It takes a lot of work out of this but also . . . take your aging reports at the end of the month, they're all right in front of you; your commission reports, all automatic. This is just unbelievable for an organization like ours. We never had this kind of information before."

There are many, many dealers across the country who still don't—but who should. □

OPERATIONS COMMITTEE MEETING

September 22, 1969

AGENDA

1. Additions and Corrections to Minutes of the September 15th Meetings
2. Tax and Estate Planning for DEC Officers - (Dick Testa)
3. Quarterly Status Report on Activities with DEC - (Dick Testa)
4. Monthly Management Report for August

   The following items will be discussed only if Item 4 is completed:

5. Salary Reviews not Discussed at last Thursday's SRC - (Ted Johnson/Stan Olsen)
6. Marketing Review Committee Summary - (Ted Johnson)
   (See attached minutes of the September 15th meeting)
7. Proposed Gift of Turkeys to Employees for Christmas - (Win Hindle)
   (See attached report from Bob Lassen)

digital INTEROFFICE MEMORANDUM

DATE: September 23, 1969

SUBJECT: Minutes of the Operations Committee Meeting
September 22, 1969

TO: Operations Committee FROM: W. R. Hindle, Jr.

Present: Ken Olsen, Pete Kaufmann, Ted Johnson, Brewster Kopp, Stan Olsen, Nick Mazzarese, Win Hindle (Secretary)

1. Dick Testa reported there was no change in the status of discussions with the SEC. He also reported the status of proposed tax legislation with regard to DEC's restricted stock plan. It appears that restricted stock options granted prior to April 22, 1969, may be exercised any time within the two year period under present tax rules. Options under the plan granted after April 22, 1969, should be exercised before January 31, 1970, in order to qualify under present tax rules.

   Woods Agenda Item - Grant New Restricted Stock Options.

2. Minutes of the September 15th Operations Committee Meeting were approved.

3. Management Report (Clayton Rix)

   a. PDP-8 Family - Bill Long expects a $100K over-run for the year in promotional literature and advertising. Ken asked that Gabe d'Annunzio and Clayton Rix prepare a report on the Promotions and Advertising Budget for 1970 stating what they will do about the over-run situation. We have not lost any customers for GLC-8 even though we are re-doing the software. Manufacturing cost favorable variances will not continue, according to Pete Kaufmann. He and Bill Long will look at this again.

   b. PDP-11 - Nick Mazzarese reported lower than budgeted engineering expenses for the year. He will submit a PCP for the PDP-11 which will show engineering and marketing expenses lower than originally budgeted. However, since shipments will be lower than originally budgeted, loss for the year will be greater.

   c. Modules - Al Devault reported that slow module deliveries will affect bookings. He expects to be back down to fast delivery by the end of November. Al expects to book $1.2 Million in September, despite the fact we will still be slightly below full manpower.

   d. PDP-14 - Al Devault will re-budget PDP-14 to a lower shipment number for the Fiscal Year. The product must be re-engineered but still has an excellent future.

e. PDP-15 - John Jones will submit a PCP to show increased warranty and installation expenses for the year. Quarter 2 shipments will be lower than budget due to slippage in completing the engineering.

f. Traditional Products - Bob Lane expects bookings to pick up in September. Gross margins on older equipment are lower because costs of older equipment have accumulated excessive costs during the years they have been in-house.

g. PDP-10 - Sales manpower working on PDP-10 is greater than budgeted, even though sales expenses are slightly lower than budget; Ted and Clayton will look into this. Warranty time has been running longer than the expected 3 months. Bob Savell is examining this question to cut down the extended period.

h. Sales - Ted believes he can hire to fill the open module specialist slots.

i. Field Service - PDP-10 and 15 Warranty will be re-budgeted. Margin on Field Service was 25% in August as against the 26% budgeted; July was approximately break-even. Ted expects Field Service to make its budgeted margin for the rest of the year.

j. Promotion Literature and Space Advertising - Gabe d'Annunzio reported that even with cut backs, the PDP-8 will be about $100K over budget during the Fiscal Year. Bill Long and Gabe are continuing to discuss this problem. There are more people in Gabe's cost center than are needed to do the required work; this has caused an increase in the overhead. Gabe and Clayton Rix will report next week on the budget outlook for the year.

k. PDP-12 - Dick Clayton believes Production will make its 25 machine quota for September.

l. Manufacturing - Pete reported that we are low on labor but it is not affecting shipments. Subcontracting of printed circuit boards will raise board costs. Inventory at the end of September will be $2 Million over budget.

m. Maintenance - Al Hanson is $50,000 over budget this quarter but he expects to be on budget for the year. Al has had to have contract draftsmen, which has raised the labor dollar spent in Plant Engineering. Al will examine the wage rates for draftsmen with Personnel to attempt to get permanent people.

bwf

digital INTEROFFICE MEMORANDUM

DATE: September 17, 1969

SUBJECT: PROPOSAL - CHRISTMAS TURKEYS (1969)

TO: Operations Committee

FROM: Personnel Committee
(Bob Lassen)

The Personnel Committee approved a proposal made by Dimitri Dimancesco to distribute turkeys to our employees again this Christmas.

The consensus was that the turkeys given last year were very much appreciated by our employees and that this activity pleased a much larger portion of our total employee population than previous Christmas parties.

Approximately 98% of our employees accepted their turkeys last year, whereas in the past only 50% of our employees attended the Christmas party.

Estimated Cost (1969)

Number of Turkeys - 3,425

Average Weight - 14 lbs.

Cost per Pound - $.48 ($6.72 per turkey)

Total Cost to Digital - 3,425 x $6.72 = $23,016.*

*Last year the turkeys cost $.46 per pound, and we distributed 2,161 - total cost was $14,538.

jfr

CONFIDENTIAL

OPERATIONS COMMITTEE MEETING

September 15, 1969

AGENDA

1. Additions and Corrections to Minutes of the September 8th Meeting
2. Marketing Review Committee Summary - (Ted Johnson)
   (See attached minutes of the September 8th meeting)
3. Proposed Leominster Plant Start-Up Plan - (Pete Kaufmann)
   (See attached report from Galen Davis)
4. Proposed Benefit Changes for San German, Puerto Rico Plant - (Pete Kaufmann)
   (See attached report from Paul Chambers)
5. Final U. K. Production Proposal - (Pete Kaufmann)
   (Report from Dave Knoll distributed for last week's meeting)
6. Capitalization Policy, and Description of Current Rotational Policy - (Brewster Kopp)
   (Report on Capitalization Policy from Ed Savage distributed for last week's meeting, report on Current Rotational Policy from Ed Savage attached)
7. Proposed Revision in Procedure for Submitting Proposals to Operations Comm. - (B. Kopp)
   (See attached report)
8. Investment Analysis
   (See attached report from Clayton Rix)
9. Proposed Organization/Personnel Announcements Procedure - (Win Hindle)
   (Report from Graydon Thayer distributed for last week's meeting)
10. PDP-12 Program Change Proposal - (Dick Clayton)
    (See attached Addendum to report distributed for last week's meeting)
11. Schedule Review Procedure - (Steve Sobel)
    (Report distributed for last week's meeting)
12. Proposed FOCAL Seminars - (Richard May/Gabe d'Annunzio)
    (See attached report)
13. August Management Report
    (See attached report)
14. Overdue Orders - (Stan Olsen/Nick Mazzarese/Win Hindle)

digital INTEROFFICE MEMORANDUM

DATE: September 16, 1969

SUBJECT: Operations Committee Minutes for the September 15th Meeting

TO: Operations Committee FROM: W. R. Hindle, Jr.

Present: Ken Olsen, Nick Mazzarese, Brewster Kopp, Pete Kaufmann, Ted Johnson, Win Hindle

1. Minutes of the September 8, 1969 meeting were approved.

2. Next Monday, we will devote the meeting to review of the monthly Management Report.

3. Minutes of the Marketing Review Committee Meeting of September 8, 1969 were accepted. Ted will provide a definition of the Soft/Hard Backlog Report.

   We discussed the "touch-up to crating to shipping" loop. Ted is investigating his portion of this loop.

4. Leominster Start-Up Plan - We approved the plan as proposed by Galen Davis on September 9, to start module production in Leominster in October.

5. Benefit Plan Changes for San German, Puerto Rico - We agreed to accept Paul Chambers' proposed benefit changes for employees in the Puerto Rican plant.

   We discussed wage philosophy with Paul. We agreed that general help in the plating area could be paid a higher wage than other general helpers. Paul will come back with a specific wage proposal to allow us to staff all Maynard general help positions.

6. Final U.K. Production Proposal

Opinions on U.K. Production:	Pete	Ted	Nick	Win
Should we have started?	too early	Yes	Yes	Yes
Has it been worthwhile?	No	Yes	Yes	Yes
Should we expand?	Yes	Yes	Yes	Yes

   We agreed to the proposed production expansion plan proposed by Peterschmitt, Shingles and Gordon in their August 8 memo. Under this proposal, U.K. will build 8/1's and 8/L's for U.K. and EFTA customers.

7. Capitalization Policy - Ed Savage reported that the plant departments are not rotating equipment, but that Sales offices were adhering to the rotation policy. We approved Ed Savage's September 2, 1969 memo proposing that we capitalize all equipment to be used for more than one year; this is a change to our previous policy of rotating most of the equipment in this category.

8. Proposals to the Operations Committee - Brewster Kopp suggested that proposals coming to the Operations Committee be reviewed by appropriate departments before coming to the Committee. We agreed to be more critical of one another's proposals if this type of review by appropriate departments has not been done.

9. Investment Analysis Format - We agreed to try using the investment analysis format proposed by Clayton Rix. Ken suggested that we move relatively slowly on this because it is a new way of looking at decisions at DEC. He suggested that we discuss capital budgets and controls at our next Woods Meeting.

   Next Woods Meeting: Evening of September 29, all day September 30. We will leave the plant at 4:00 p.m. on September 29.

10. Organization/Personnel Announcements - The proposal by Graydon Thayer was not approved. We asked Graydon to come to the Operations Committee to say who is not keeping the Personnel Department informed of changes. Secondly, we want Graydon's recommendation as to which of the present company publications we should make announcements in, as we do not want to add another publication.

11. PDP-12 Program Change Proposal and Addendum - Dick Clayton's PCP for the PDP-12 was approved.

12. Schedule Review Procedure - We will discuss Schedule Review at the next Woods Meeting. Roger Dow is now in charge of Schedule Review.

13. Proposed FOCAL Seminar - No decision was made on this proposal. Nick will investigate two questions:

    1. Do we want FOCAL?
    2. If we do, how do we sell it?

14. Overdue Report - The overdue report should be included with each month's Management Report.

dt

digital INTEROFFICE MEMORANDUM

DATE: September 17, 1969

SUBJECT: Operations Committee Minutes - Addendum
September 15, 1969

TO: Operations Committee FROM: W. R. Hindle, Jr.

Present: Ken Olsen, Ted Johnson, Nick Mazzarese, Brewster Kopp, Pete Kaufmann, Roger Cady, Win Hindle

1. PDP-11 Proposal dated September 12, 1969 by Nick Mazzarese

a. One PDP-11/20 will be delivered to a customer in March; if Production units are not ready, one of the 6 Engineering units will be shipped.

b. Customer Delivery Commit -

11/20 Basics	20 in May, 40 in June
11/20 Systems	15 in June

c. Pricing and OEM Discount were approved as proposed.

d. Nick will propose a PCP for FY 1970, since he expects a larger loss for the year than he originally budgeted.

dt

digital INTEROFFICE MEMORANDUM

DATE: 9/9/69

SUBJECT: Leominster Plant Start-Up Plan

TO: Cy Kendrick
cc: Lew Reynolds

FROM: Galen Davis

Attached is the start-up plan for the Leominster pilot operation, included is the production plan for Maynard.

September 3, 1969

LEOMINSTER PLAN (Phase 1)

1. Leominster assembly operations

   Modules support 20% of the total module volumn with the expansion posibility from 3k to 7k per day. This line will build all bulky circuit bds. which are not in Puerto Rico because of shipping handling problems.

   Sub-assembly - 90% of the sub-assembly labor (console, switch panels, fan housing, panels,ect.) to support all computers.

   Cables - 25% of the total cable harness work to support direct sales and computer assembly.

   Mtg. Panels - all sales mounting panels plus power bussing for the support of the 24 ga. wire wrapping schedule.

   Power Cords - all jumper cords, terminators and sales patch cords.

2. Leominster will receive prekitted jobs from Maynard, assemble and return to Maynard as scheduled by Production control.

3. All purchasing of supplies will be handled by Maynard. Leominster will stack only minimuim supplies required for line support and will rely on present in-house sources for support.

4. Material shipments will be transported to (kits) and from (finished goods) Leominster on a daily basis. The traffic department will coordinate this flow. Standard S.B.A. proceedures will be used.

5. Building Maintenance will be a function of plant engineering.

6. All personnel who are related to various departments in Maynard will be under the direct supervision of the Leominster on-sight Manager (Maintenance-Traffic-nurse-ect.)

7. Cost performance will be measured using the present cost center reporting systems.

   OVERHEAD----------performance to budget
   INVENTORIES----------performance to budget
   LABOR----------performance to standards

8. Personnel records and reviews, sick pay tution refunds, and all related personnel functions will be handled by Maynard.

9. All payroll services will be located in Maynard. Time cards and job labor tickets will be submitted as required by accounting.

10. All direct expenses (utilities, rent, snow removal ect.) will be invoiced to Accounting referencing cost center and purchase order.

9-3-69

Time Schedule For Production Start - Leominster

Weekly

		October			November				December			
		13	20	27	3	10	17	24	1	8	15	22
Modules												
	Units	5K	9K	9K	15K	15K	15K	15K	15K	15K	15K	15K
	Hours	1700	3000	3000	4500	4500	4500	4500	4500	4500	4500	4500
	Personnel	43	75	75	115	115	115	115	115	115	115	116
Cables												
	Hours	480	480	480	960	960	960	960	1600	1600	1600	1600
	Personnel	12	12	12	24	24	24	24	40	40	40	40
Mtg. Panels	Hours	600	600	600	600	600	600	600	600	600	600	600
	Personnel	15	15	15	15	15	15	15	15	15	15	15
Power Cords												
	Hours	80	80	120	120	160	160	160	160	160	160	160
Terminals	Personnel	2	2	3	3	4	4	4	4	4	4	4
Sub-Assy												
	Hours	800	800	800	1200	1200	1200	1200	1200	1200	1200	1200
	Personnel	20	20	20	30	30	30	30	30	30	30	30
Total direct Hours		3660	5000	5000	7380	7420	7420	7420	7420	7420	7420	7420
Total direct Personnel		92	125	125	187	188	188	188	188	188	188	188

Overhead Support Personnel 22

Group leaders - 7
Stock Clerks - 4
Clerk Typists - 2
Nurse-Clerk - 1

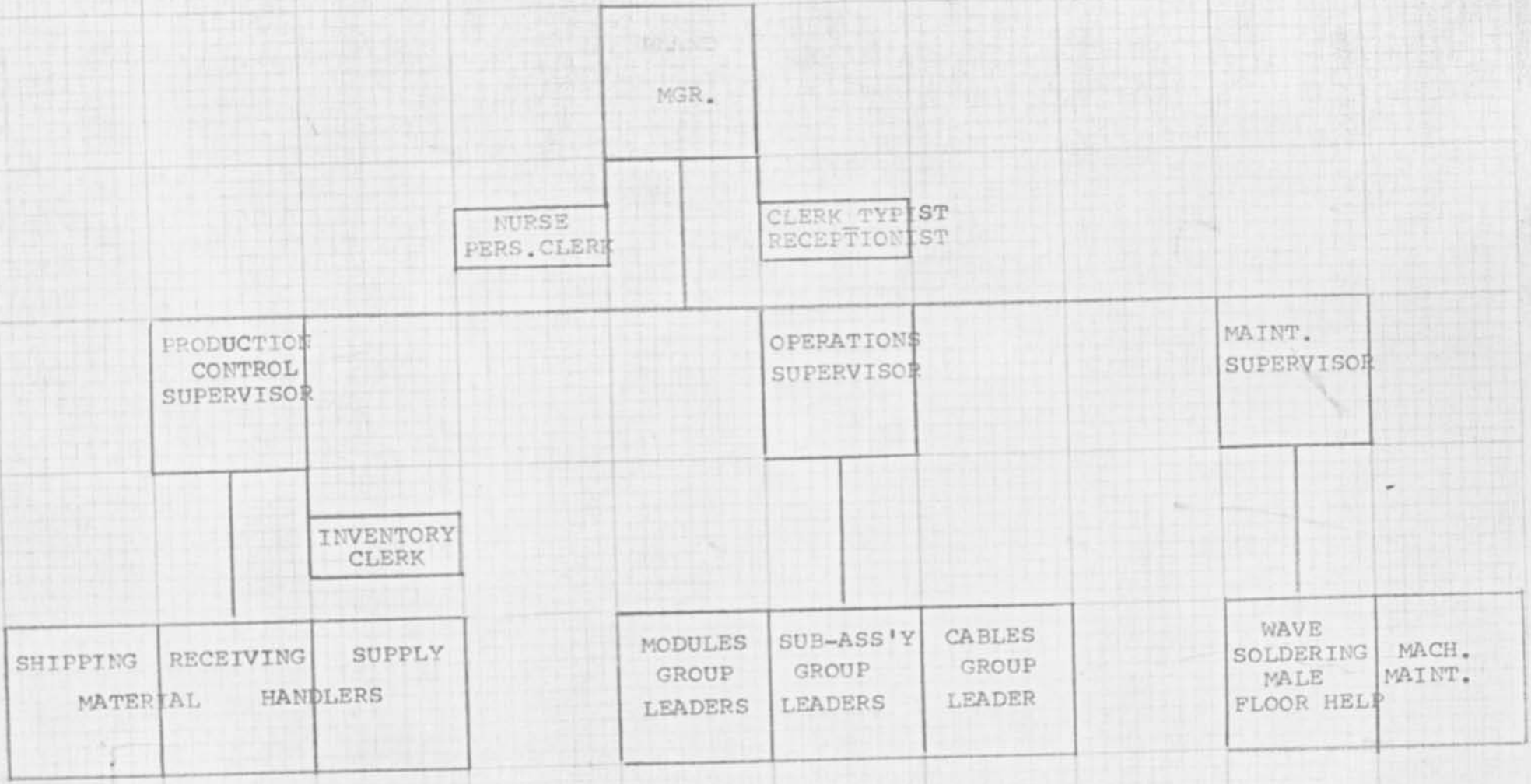
Supervisors - 3
Maint. Mechs. - 4
Mgr. - 1

Leominster Workload Schedule

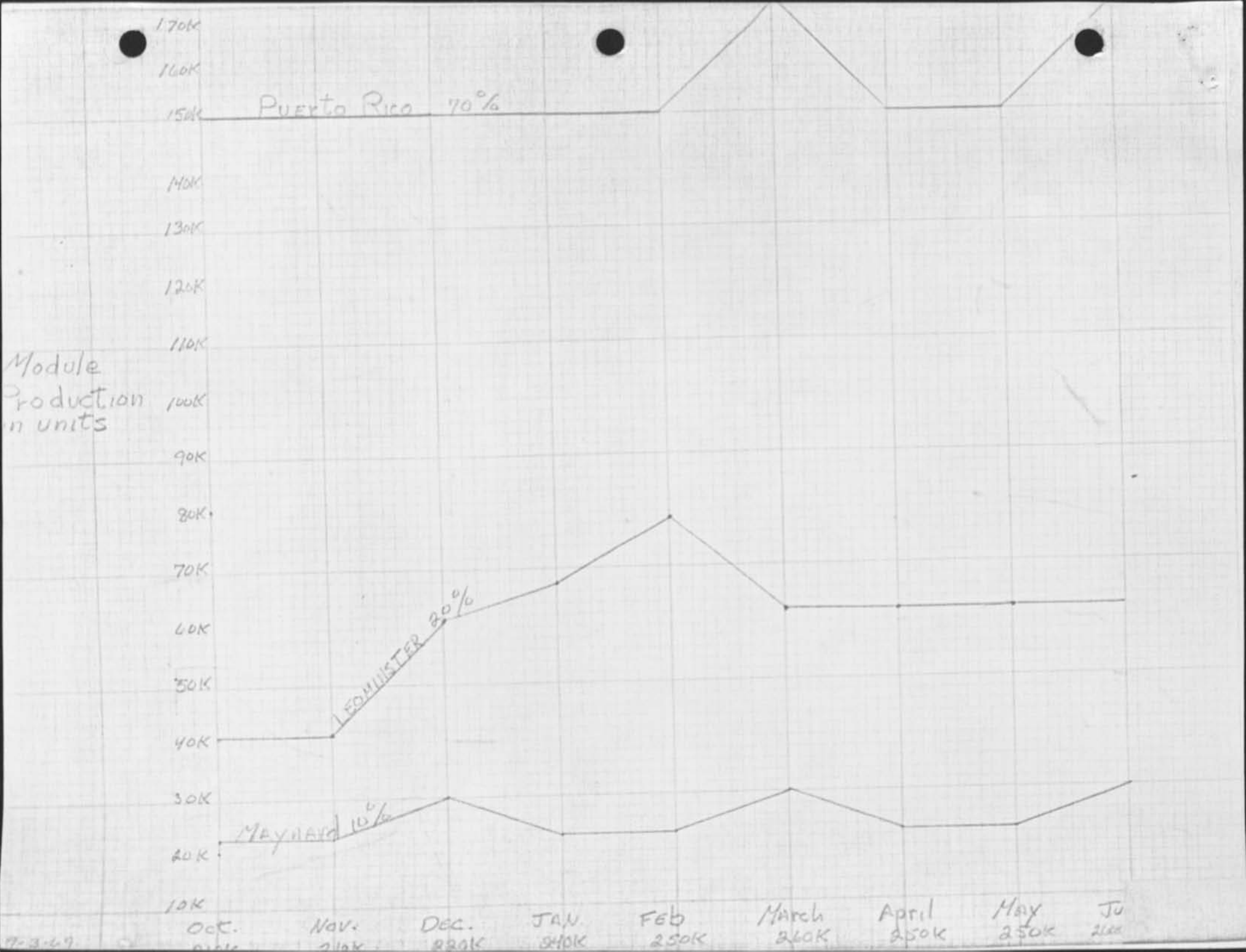
G. Davis

70 2nd Quarter | 70 3rd. Quarter | 70 4th Quarter | 71 1st Quarter | 71 2nd Quarter

	Oct	Nov.	Dec	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct.	Nov	Dec
Modules															
Units	70K	45K	60K	65K	65K	70K	60K	60K	70K	60K	60K	70K	60K.	60K	70K
Hours	7000	21000	32500	42000	42000	23000	23000	22000	23000	22400	22400	23000	42000	22400	23000
Personnel	43	115	115	115	115	115	115	115	115	115	115	115	115	115	115
Sub-Assy															
Hours	1600	4400	4800	4800	4800	6000	5600	5600	7000	5600	5600	7000	6400	6400	8000
Personnel	20	30	30	30	30	30	35	35	35	35	35	35	40	40	40
Cables															
Hours	640	1280	3000	2400	2400	3000	3200	3200	4000	3200	3200	4000	3200	3200	4000
Personnel	4	8	15	15	15	15	20	20	20	20	20	20	20	20	20
Mtg. Panel															
Hours	2400	2400	3000	2400	2400	3000	2400	2400	3000	3200	3200	4000	3200	3200	4000
Personnel	15	15	15	15	15	15	15	15	15	20	20	20	20	20	20
TOTAL															
Direct hours Personnel	82	168	176	175	175	175	185	185	185	190	190	190	195	195	195
Indirect Personnel	22	22	22	24	24	24	24	24	24	26	26	26	26	26	26
Total Population	104	190	197	197	199	199	209	209	209	216	216	216	221	221	221



LEOMINSTER ORGANIZATION 8-27-69
G. Davis


170K
160K
150K
140K
130K
120K
110K
100K
90K
80K
70K
60K
50K
40K
30K
20K
10K
Module Production in units
Puerto Rico 70%
Leominster 80%
Maynard 10%
Oct.
Nov.
Dec.
JAN.
Feb
March
April
May
Ju
240K
220K
240K
250K
250K
250K

September 3, 1969

MAYNARD PLAN

1. The prime function of this assembly line will be the quick reaction potential for solving the critical needs of all product lines. Production control will direct all short order, , quick turn-around and over-due modules, sub-assemblys, cables ect. into this line.

2. The module assembly line will maintain 50 direct labor personnel to support a minimuim of 1000 modules per day.

    1. Critical units
    2. Limited release
    3. Systems modules
    4. Memory stack boards
    5. Engineering prototype units
    6. Retrofit changes (ECO)
    7. First-lot runs on new releases

3. The circuit board inspection area will use 10 direct labor people for incoming inspection prior to kitting.

4. Eight direct labor people will remain in support of the PDP-10 twisted pair operation.

5. Production control will remain centralized in Maynard. Scheduling ECO control, and material support will be coordinated from this office.

6. Module testing will remain in Maynard as will the finished goods kitting and module distribution activities.

Maynard Workload Projection

	10/69	11/69	12/69	1/70	2/70	3/70	4/70	5/70	6/70
Weeks PER Month	4	4	5	4	4	5	4	4	5
Module HOURS	8.0K	8.0K	10.0K	8.0K	8.0K	10.0K	8.0K	8.0K	10.0K
Board INSPECTION	1.6K	1.6K	2.0K	1.6K	1.6K	2.0K	1.6K	1.6K	2.0K
Twisted PAIR	1.3K	1.3K	1.6K	1.3K	1.3K	1.6K	1.3K	1.3K	1.6K
Quick REACTION	2.4K	2.4K	3.0K	2.4K	2.4K	3.0K	2.4K	2.4K	3.0K
TOTAL HOURS	13.3K	13.3K	16.6K	13.3K	13.3K	16.6K	13.3K	13.3K	16.6K
TOTAL PERSONNEL	83	83	83	83	83	83	83	83	83

7-3-69
C DAVIS

PREVENTATIVE MAINTENANCE

AUG. 26 27 28 29 SEPT. 2 3 4 5 8 9 10 11 12 15 16 17 18 19 22 23 24 25 26 29 30

BARREL TRUCK — X

DOLLIES — Received 9/3/69 — X

SPARE PARTS CABINETS — X

ASSORT. COUPLERS — PARTIAL 9/4/69 — X

ASSORT. TOOLS DRIAN — PARTIAL 9/4/69 — X

ASSORT. TOOLS SEARS — X

ASSORT TOOLS SNAP-ON — X

SPARE PARTS.

AUG. 26 27 28 29 SEPT. 2 3 4 5 8 9 10 11 12 15 16 17 18 19 22 23 24 25 26 29 30

INSERTION MACH. ——— X
ARC TOOLING ——— X
EUBANKS MACH. ——— X
EYELET ANVILS — received 9/3/69 ——— X
EYELET TOOLING ——— X

OPERATING SUPPLIES

AUG 26 27 28 29 SEPT 2 3 4 5 8 9 10 11 12 15 16 17 18 19 22 23 24 25 26 29 30

- BELLOW AIR LUB OIL. X
- TRI Received 8/27 X
- COPPER WET X
- FLUX X
- THINNER X
- SOLDER X
- CHLORETHENE N.U. received 8/28 X
- LETTER AND NUMBERS X
- HIGH SPEED DRILL X
- SAFETY GLASSES 112 received 8/28 X
- ASSORT HAND TOOLS PARTIAL 9/4/69 X
- SHELL OIL Received 8/25 X
- ~~ARO TOOLING~~
- ~~WIRE STRIPPER TOOLING~~
- CARTS X
- WOODEN PLATFORM TRUCK X
- TRI SINKS X
- AUTOMATIC SCREW GUN X
- PROD. STOOLS X
- STANDARD Benches
- SPECIAL Benches X
- ~~AUTOMATIC SCREWDRIVER~~
- PALLET RACKING PARTIAL X
- LAZY SUSANS received 8/3/69 X
- LIGHT INSPECTION BOXES X
- EYE BOLTS X

GENERAL SUPPLIES

AUG 26 27 28 29 START 2 3 4 5 8 9 10 11 12 15 16 17 18 19 22 23 24 25 26 29 30

8" FANS GUARDS ——— X
1/2 PINT CANS ——— X
1 GAL PAINT CANS ——— X
8" FANS — RECEIVED 9/4/69 ——— X
WASTEBASKETS ——— X
DEXION — received 8/29 ——— X
DEXION CUTTER — received 8/29 ——— X
PLYWOOD - (SHELVING) RECEIVED 9/5/69

LEOMINSTER PLANT

CAPITAL EQUIPMENT

AUG 26 27 28 29 SEPT 02 03 04 05 08 09 10 11 12 15 16 17 18 19 22 23 24 25 26

MODEL 810A WIRE STRIPPER — X

"17-613 DELTA DRILL PRESS — X

MODEL DX DIE HANDLER — X

PALLET LIFT TRUCK — X

DOUBLE EYELET MACH. — X

SPLIT LUG MACH. — X

EYELET MACH. — X

HANDLE STAMPER — SEPT 30

DEGREASER — OCT. 5

22 TON PRESSES — OCT. 5

7" SOLDER WAVE — X

DEGREASER LOGIC — OCT. 1

CABLE STRIPPER

digital INTEROFFICE MEMORANDUM

DATE: September 10, 1969

SUBJECT: PROPOSED BENEFIT CHANGES--San German, Puerto Rico Plant, FY 1970

TO: Operations Committee

FROM: Personnel (Paul Chambers)

WAGE REVIEW

As you recall, approval was received to review hourly San German employees on an anniversary basis. July and August reviews have been completed and the results have been excellent. We are using 5¢ for production workers and 10¢ for group leaders and clerical (as opposed to the original proposal of 10¢ and 15¢). Spread over 12 months, this policy will maintain our philosophy of not being the highest paying company in the Mayaguez area. The people also understand that this practice is not automatic each year and that wage review decisions will be reached on a year to year basis.

FY 1970 BENEFIT CHANGE PROPOSALS

I performed a complete Benefit and Policy Audit/Survey with five major companies on the island (General Electric, Sprague Electric, Carburundum, Dynamics Instruments, and Cranbar). I have attached a summary matrix of this survey.

I have carefully reviewed the survey with Cy Kendrick, Phil Wood and Jaime Ferra, and we all strongly feel that two benefit changes are necessary for FY 1970. They are as follows:

Paid Holidays: Increase from 6 to 6½ (½ day before Christmas). The number of holidays paid in the Mayaguez area runs from a low of three to a high of seven. However, almost all of the companies in San German close down two weeks over the Christmas Holidays as the Christmas season is extremely important to the people. Last year we gave the employees the ½ day before Christmas off without pay. Jaime Ferra feels that the people would take up to a week off without pay because the season is so important to them. He's right. Therefore, due to island custom and our practice of not shutting down, we feel the ½ day holiday is necessary.

Group Insurance: Increase our current doctor's visit coverage for home and hospital from the employee paying the first $2.00 and the plan paying up to the next $3.00 (total $5.00) to $4.00 per day paid by the plan.

All other companies surveyed have a $5.00-$6.00 doctor's visit allowance, and the employee does not share any of the cost.

This benefit change would amount to a maximum of $2,300 additional yearly premium (DEC paying 100% of employee cost and sharing the dependent cost 50/50).

I have discussed the above proposal in detail with Pete Kaufmann. If any further information is required, I would welcome the opportunity to meet with you as you review this proposal.

jfr

WAGE AND BENEFIT SURVEY - PUERTO RICO

JULY 1969

	PONCE	MAYAGUEZ	SAN GERMAN	DIGITAL
HOLIDAYS	8-9	3-6	5-7	6
VACATION	1wk after 1yr 2wks after 5yrs 3wks after 10yrs	1wk after 1yr 2wks after 3yrs 3wks after 10yrs	1wk after 1yr 2wks after 5yrs 2wks after 10yrs	1wk after 1yr 2wks after 3yrs
SICK PAY	none	none	none	none
PENSION PLAN	none	none	none	none
STOCK PLAN	none	none	none	none
PROFIT SHARING	none	none	none	none
TUITION REFUND	yes job related-primarily for salaried employees	none	none	none
JURY DUTY PAY	yes make up difference	none	none	yes make up difference
FAMILY DEATH PAY	yes - 2 days	none	yes - 2 days	yes - 3 days
BONUS	yes	yes	none	none
MILITARY TRAINING PAY	yes make up difference	none	N/A	yes make up difference
CALL-IN PAY	4 hours	4 hours	4 hours	4 hours

	PONCE	MAYAGUEZ	SAN GERMAN	DIGITAL
SHIFT PREMIUM PAY	10¢-2nd shift 15¢-3rd shift	none	10¢-2nd shift 15¢-3rd shift	10¢- all shifts
REST PERIODS	2 @ 10 min. each	2 @ 10 min. each	2 @ 10 min. each	2 @ 10 min. each
PAYROLL SAVINGS	yes both bank & bonds	yes both bank & bonds	yes both bank & bonds	yes bank only
RECREATION	company usually sponsors 100% include athletic, Christmas and July 4 Parties	same general policy as Ponce Companies	same general policy as Ponce Companies	no athletic sponsorship- other policy same
CAFETERIA	yes	yes	none	none
WAGE REVIEWS	yes	yes	yes	yes
- 3mos	yes	yes	yes	yes
- annual	yes 4-8%	yes 4%	yes 4-6%	yes 5¢-10¢
- ave. rates female	$1.90	$1.75	$1.40-$1.68	$1.60
male	$1.80-$2.10	$1.75-$1.90	$1.50-$2.00	$1.80-$2.10
clerical	$1.80-$2.50	$1.75-$2.40	$1.75-$2.50	$1.75-$2.25
GROUP INSURANCE				
-Life Insurance	$2,000-3,000	$2,000	$1,000-2,000	$2,000
-Acc. & Sickness	½pay 26wks	same	same	same
-Room & Board	$18-31 days	same	semi-private-31days	same

	PONCE	MAYAGUEZ	SAN GERMAN	DIGITAL
-Hospitalization	$180-$250	100% of cost up to $210- $15 deductible- then pays 85% up to $5,000	$250	$200
-Surgical	$240		$300	$250
-Maternity	$150-$180		$90-$150	$175
-Dr. Visits	$5-$6 to 70 days	$25 per year	$5-31 days	$3-31 days
-Major Medical	none	none	none	none
-Contribution Company pays	90% of emp. cost 85% of dep. cost	100% of emp. cost 85% of dep. cost	100% of emp.cost none for dep. cost	100% of emp. cost 50% of dep. cost

GENERAL COMMENTS

1. 2-3 companies each in the general areas of Ponce, Mayaguez and San German were contacted.

2. Most of the companies represent electronic equipment manufacturing concerns.

3. The information presented is in area summary form to best represent the general benefit or policy practice that applies to the area surveyed.

Ken

digital INTEROFFICE MEMORANDUM

DATE: August 22, 1969

SUBJECT: U.K. Production Proposal

TO: Operations Committee FROM: D. Knoll

Attached is A. Gordon's U.K. production proposal which we are proceeding to implement. It differs from the June 69 version in that shipment to EEC has been eliminated as has wire wrapping. Wire wrapping will be reviewed in September and re-proposed if it makes sense.

I will assume your approval of the attached unless I hear otherwise.

Dave

jkl

INTEROFFICE MEMORANDUM

DATE 8th August 1969

SUBJECT Proposal, Plan and Controls for Increasing U.K. Production

TO Operations Committee

FROM J. C. Peterschmitt
G. Shingles
A. Gordon

1. Proposal

To increase the utilization and efficiency of the existing Reading production facility, by increasing the monthly production of 8I and 8L to a level necessary to supply the U.K. and E.F.T.A. market.

The production levels, as outlined below, and detailed in the attached plan and control sheets, are based on the latest bookings forecast for the countries concerned, and represent an increase of about 40 per cent in U.K. production by the fourth quarter of the current fiscal year.

2. Production Plan (8I + 8L)

	Q1	Q2	Q3	Q4
Present : U.K. only	38	48	48	48
Proposed: U.K. + E.F.T.A.	38	48	63	67

3. Cost Savings

The net result of this proposed production increase is a savings in cost, when comparing the delivered cost of a machine imported from Maynard, against a similar machine built in U.K. for the U.K. market. An analysis of this saving is shown on the attached sheet as follows:-

Sheet 1: Delivered cost comparison of 8I shipped from Maynard against built in U.K. for both U.K. and U.K. + E.F.T.A. production levels.

Sheet 2: Similar cost comparison for 8L.

Sheet 3: Delivered cost analysis of 8I and 8L machines shipped to E.F.T.A. countries against shipped from Maynard.

Sheet 4: Landed value comparison by destination, for both 8I and 8L, with the net savings/cost for each machine/destination, at both production levels.

Sheet 5: Landed value comparison, by destination for 8I and 8L combined, again with net savings/cost for each machine/destination.

Note that machines shipped from U.K. production to the U.K. market show cost savings against U.S. machines, while machines

/shipped to

shipped to E.F.T.A. from U.K. production show varying cost increases. The net result of this is further savings in cost, which would be enhanced by increases in U.K. sales.

Sheet 6: Shows net savings in graphic form, and the effect of a significant and simultaneous drop in Maynard production costs, i.e. $500 drop in 8I costs and $300 drop in 8L costs.

4. Risks and Sensitiv ity to Change

A. Factors which would improve the situation

1. Lower module costs at Maynard.
2. Maynard price increases on 8I and 8L.
3. Any rise in overall volume in U.K.
4. Building other products in U.K.
5. Increase in U.K. import duty.
6. Any further savings in U.K. production costs.

B. Factors which would worsen the situation

1. Maynard price reductions in 8I and 8L.
2. Signif icant increase in proportion of U.K. to E.F.T.A.
3. Reduction in planned volume (number of processors.)
4. Significant reduction in Maynard production costs.
5. Rapid death of 8I and 8L in Europe before something else produced in U. K. to utilize facility.
6. Worsening of the parts situation - Maynard to U.K.

5. Effect on German Production

Implementation of this plan will only have a relatively minor effect on studies of German production. The German investigation will be conducted in parallel, and will be the subject of a separate proposal.

6. Plan and Controls

A cost centre, manpower and capital equipment budget is attached, together with a series of charts detailing the plan and system of control. All charts, including budget, would be u pdated monthly showing performance against plan, and submitted

/to Maynard

to Maynard.

Note that the cost centre budget to implement this plan is only increased by £10K for the year from that originally submitted for U.K. production.

Details of plan/control charts are as follows:-

Cost centre budget

C- 1 Maynard monthly costs for 8I and 8L.
C- 2 Maynard monthly invoice price to U.K. for logics and TTY.
C- 3 Monthly cost of U.K. supplied parts for 8I.
C- 4 Monthly cost of U.K. supplied parts for 8L.
C- 5 Monthly average U.K. D.L. hours per 8I.
C- 6 Monthly average U.K. D.L. hours per 8L.
C- 7 Increase in U.K. D.L. and I.D.L. personnel (per manpower budget.)
C- 8 U.K. Production increase of 8L by destination.
C- 9 U.K. Production increase of 8I by destination.
C-10 Monthly increase in U.K. production 8I and 8L.

7. Summary

Your approval to proceed with this plan is requested, if possibly by end of August at the latest, in order that implementation may be effected to the time scale as shown.

PDP-8I DELIVERED COST ANALYSIS - FOR U.K. SHEET 1

IMPORTED FROM BOSTON VS BUILT IN U.K.

Delivered cost of 8I from Maynard

Plant Cost at Maynard	5000
Freight and Insurance	235
Duty	1404
Deliverd cost	6639

Delivered cost of 8I built in U.K.

Costs as of Jan. 1970
Maynard support £ 3900 per month - even distribution per 8I,8L & systems
U.K. overhead " " " " " " "

Monthly production quantities

	U.K. only 6	U.K.+ EFTA 9
Maynard Parts	3466	3466
U.K. Parts	1130	1130
Labour	45	45
U.K. o'head alloc.	390	345
Maynard fixed cost.	165	125
PLANT COST	5196	5066
Duty on U.S. Parts	661	661
Frt. & Ins. on US Parts	113	113
DELIVERED COST	5970	5840

PDP-8L Delivered Cost Analysis - For U.K.

IMPORTED FROM BOSTON VS BUILT IN U.K.

Delivered cost of 8L from Maynard

Plant cost at Maynard	3546
Freight and Insurance	152
Duty	859
Delivered cost	4557

Delivered cost of 8L built in U.K.

Cost as of Jan 1970

Maynard support ⁄ 3900 per month - even distribution per 8I,8L & systems

U.K. overhead " " " " "

Monthly production quantities

	U.K. only	U.K. + EFTA
	10	13
Maynard Parts	2472	2472
U.K.Parts	811	811
Labour	45	45
U.K. o'head alloc.	390	325
Maynard support "	165	115
PLANT COST	3885	3768
Duty on U.S. Parts	438	438
Frt. & Ins.	75	75
DELIVERED COST	4396	4281

DELIVERED COST ANALYSIS

PDP-8/I Rack Mounted with ASR-33

	From Boston					From U.K.						
To	Maynard Cost	Frt. & Ins.	Rate of Duty	Actual Duty	Delvd Cost	U.K. Cost	Frt. & Ins.	Rate of Duty	Actual Duty	Duty Drawback	Delvd Cost	Difference
						9 month level				Logic + TTY only		
Denmark	5000	282	4%	385	5667	5840	130	4%	385	Less 597	5758	(91)
Sweden	5000	224	8%	765	5989	5840	173	Free	0	0	6013	(25)
Switzerland	5000	229	SF 272/ 100 KG.	162	5391	5840	67	SF 272/ 100 KG.	162	Less 597	5472	(81)

DELIVERED COST ANALYSIS TO EFTA

PDP-8/L No Cabinet with ASR-33

						13 month level				Logic + TTY only		
Denmark	3546	183	4%	235	3964	4281	61	4%	235	Less 401	4176	(212)
Sweden	3546	196	8%	471	4213	4281	88	8%	471	Less 401	4439	(226)
Switzerland	3546	152	SF 272/ 100 KG.	80	3778	4281	39	SF 272/ 100 KG.	80	Less 401	3999	(211)

SHEET 4

LANDED VALUE COMPARISON

DESTINATION

6-8-69.

PDP-8I

	PROD LEVEL	U.K.	DENMARK	SWEDEN.	SWIT.	TOTAL SAVINGS
U.K.	6	(6)35,820				
Maynard	6	39,834				
Save/ (Cost)		4,014				4,014
U.K.	9	(6)35,040	(1)5758	6013	(1)5472	
Maynard	9	39,834	5667	5,988	5,391	
S/C		4,794	(91)	(25)	(81)	4,597

USING MAYNARD 8I COST - ¢ 5000

PDP-8L

U.K.	10	(10) 43960				
Maynard		45,570				
S/C		1610				1610
U.K.	13	(10)42810		(1)4439	(2)7,998	
Maynard		45,570		4,213	7,556	
S/C		2,760		(226)	(442)	2,092

MAYNARD 8L COST - ¢ 3546.

SHEET 4

SHEET 5

Sheet

LANDED VALUE COMPARISON-DESTINATION

PDP-8I and 8L

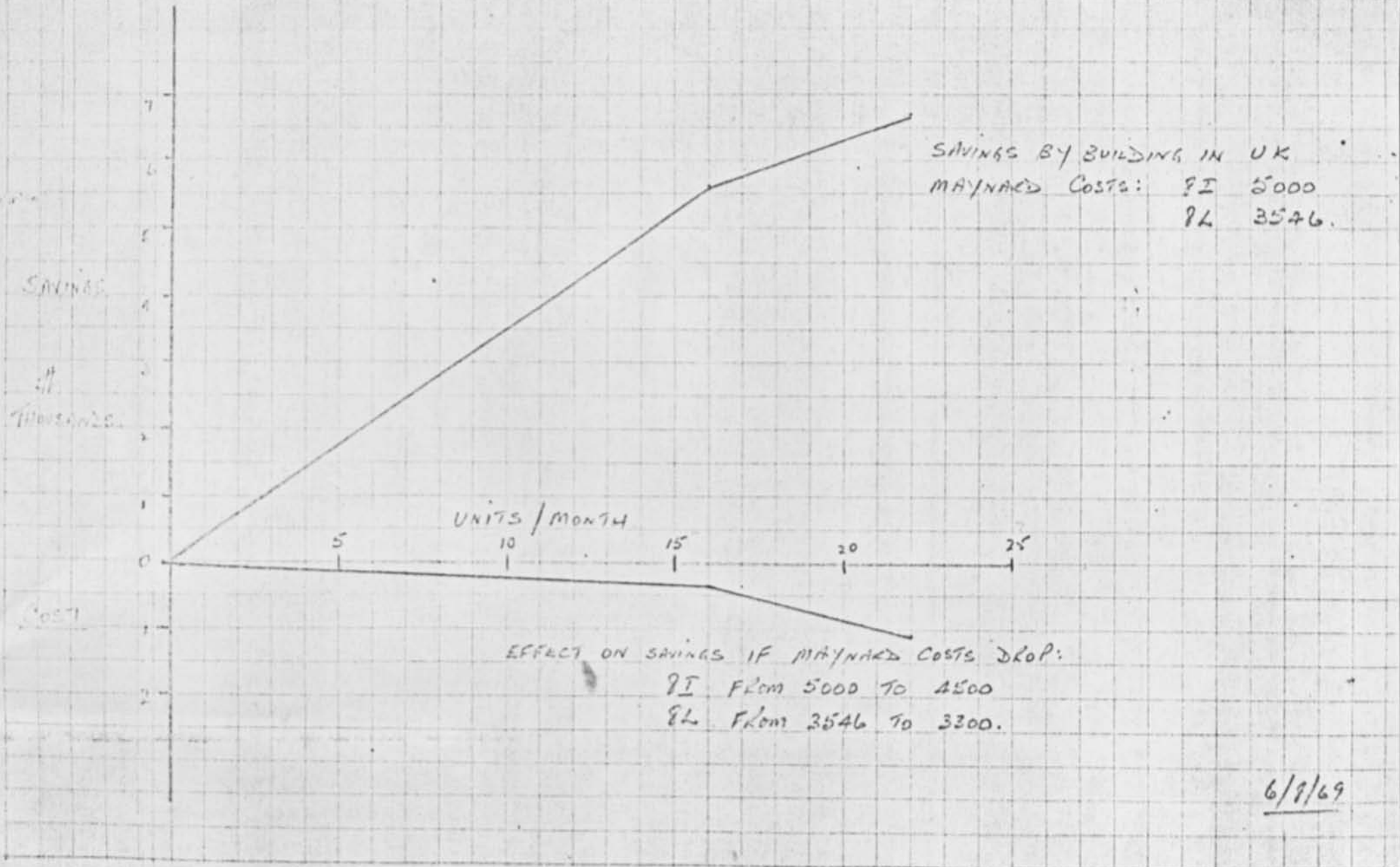
	PROD. LEVEL.	U.K.	DENMARK	SWEDEN	SWIT.	TOTAL SAVINGS.
8I	6	(6)4,014				
8L	10	(10)1,610				
Save/ Cost		5,624				5,624
8I	9	(6)4,794	(1) (91)	(1) (25)	(1) (81)	
8L	13	(10)2,760		(1) (226)	(2) (443)	
Save/ Cost		7,554	(91)	(251)	(523)	6,689.

USING MAYNARD COST:- 8I $ 5000
8L $ 3546

SHEET 5

SAVINGS/COST BY PRODUCING IN U.K. VS MAYNARD (DELIVERED COST ANALYSIS).

EFFECT IF MAYNARD COSTS TOOK SIGNIFICANT DROP.



SAVINGS BY BUILDING IN U.K.
MAYNARD COSTS: £I 5000
£L 3546.

EFFECT ON SAVINGS IF MAYNARD COSTS DROP:
£I FROM 5000 TO 4500
£L FROM 3546 TO 3300.

6/9/69

U.K. Production Budget (UK + EFTA) Revised 21.7.69. FISCAL 69/70

Direct Charges	Q1	Q2	Q3	Q4	TOTAL
Direct Labor	4,660	6,415	6,645	6,795	24,515
Indirect Labor	2,660	2,350	3,120	3.640	11,790
Agency	150	150	100	100	500
Overtime Premium	180	260	300	300	1,040
Fringes	670	790	880	945	3,285
Operating Supplies	8,250	9,000	9,000	9,000	35,250
Other Expenses	750	750	900	900	3,300
SUB TOTAL VARIABLE.	12,680	13,300	14,300	14,300	55,165
% of D/L " "	270%	210%	215%	218%	228%
Salaries	5,300	5,450	5,620	5,700	22,070
Clerical	730	980	980	1,030	3,720
Fringes	540	580	595	605	2,320
Occupancy	4,860	4,860	5,800	5,800	21,320
Travel	800	1,000	1,000	1,000	3,800
Auto Rental	150	150	200	200	700
Lodgings	300	400	400	400	1,500
Tel & Tel	700	700	800	800	3,000
SUB - TOTAL FIXED	13,380	14,120	15,395	15,535	58,430
% of D/L " "	285%	220%	230%	228%	241
Total Overhead	26,060	27,420	29,695	30,420	113,595
% of D/L	555%	430%	445%	445%	469%
TOTAL COST CENTRE.	30,720	33,835	35,340	37,215	137,110

K. PRODUCTION - MANPOWER BUDGET. U.K. + EFTA REVISED 21-7-69.

	Current Personnel	Additions FY.69/70	Q1 J. A. S.	Q2 O. N. D.	Q3 J. F. M.	Q4 A. M. J.
DIRECT LABOR						
reman	Ø	1	1			
chnicians	5	2	1	1		
	5	3				
OVERHEAD LABOR						
pt. Mgr.	1	Ø				
pervisors/Leadmen	1	1				1
yer	1	Ø				
erk Typist	1	Ø				
cretary	Ø	1	1			
int/Handymen	2	Ø				
chanical/Inspector	1	Ø				
od.Control Clk.	Ø	1			1	
ock Clerk	1	Ø				
	13	6	3	1	1	1

CAPITAL EQUIPMENT REQUIREMENTS

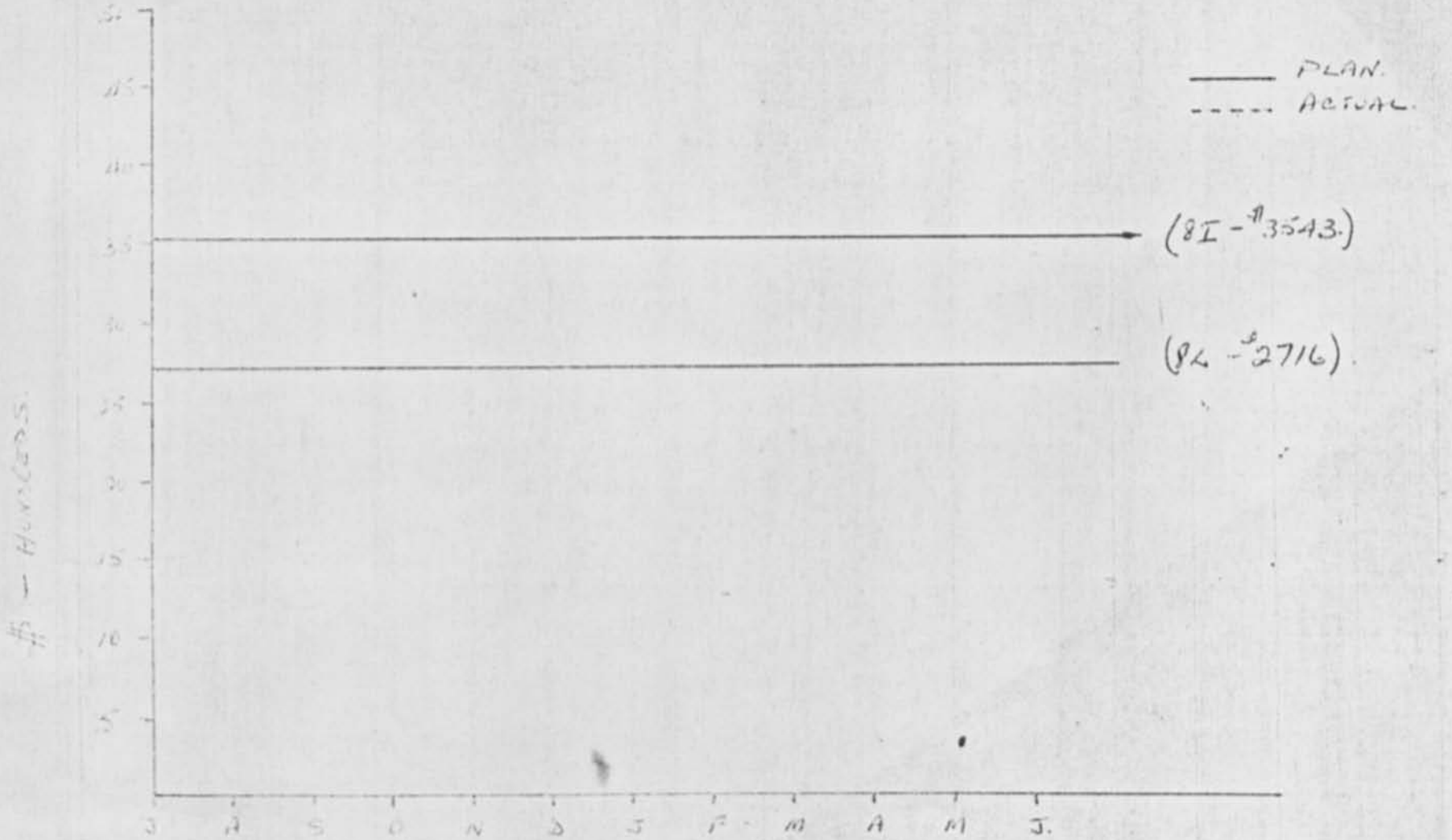
FISCAL YEAR 69/70

Dept. Name: U.K. Production

Equipment	Cost	Q1 J A S	Q2 O N D	Q3 J F M	Q4 A M J
Office Equipment:					
Desks - 2					
Chair - 2	1K	.7		.3	
Typewriter - 1					
	1K	.7		.3	

Division Code 81 and 81L Fiscal 69/70

LESS MODULES.

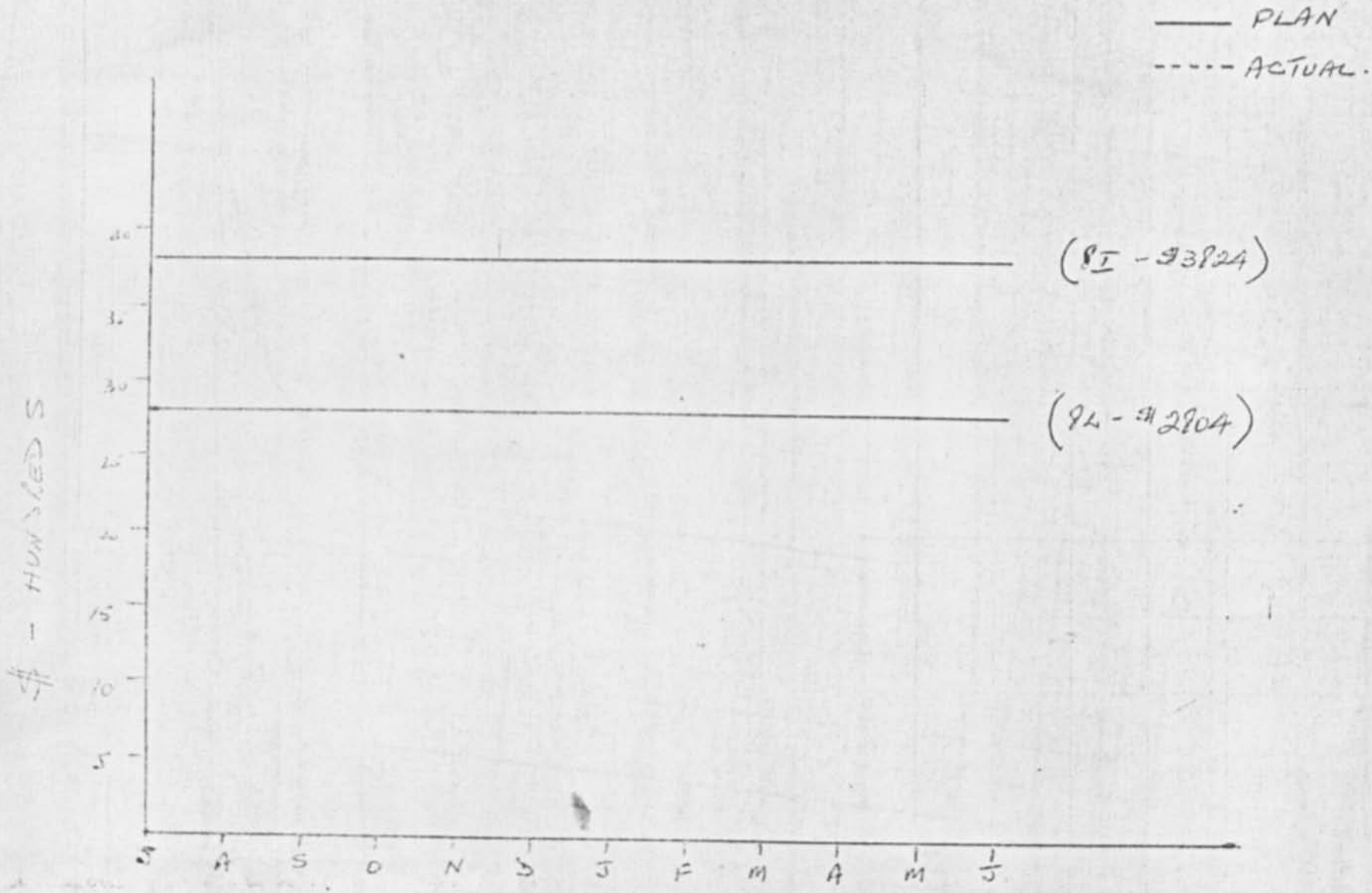


FISCAL YEAR 69/70.

22/6/69.

INVOICE VALUE 8I + 8L LOGICS INCL. ASR33.

U.K. CONTROL CHART C-2

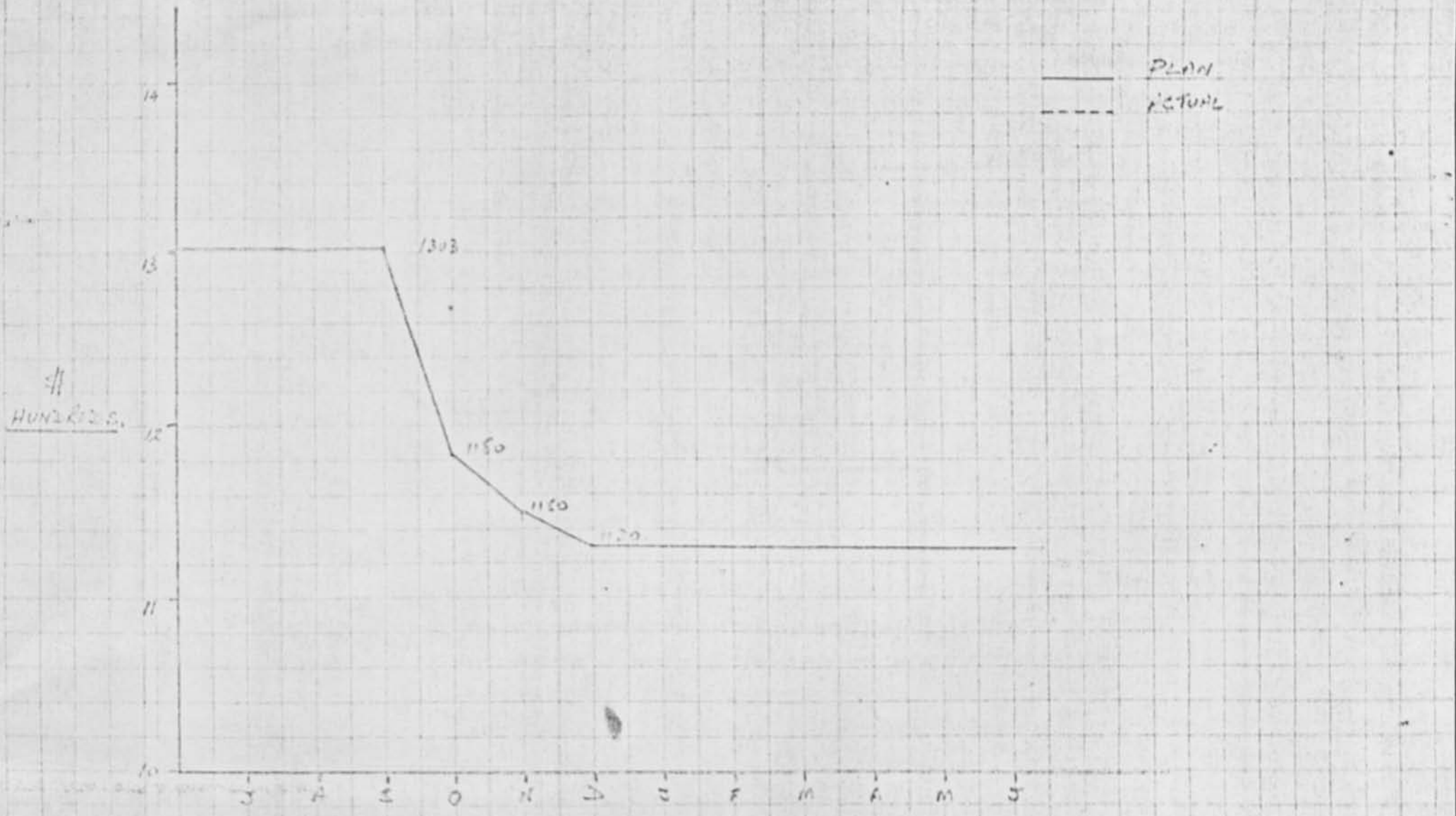


23/6/69

U.S. SUPPLIED PARTS PDP. 8 I

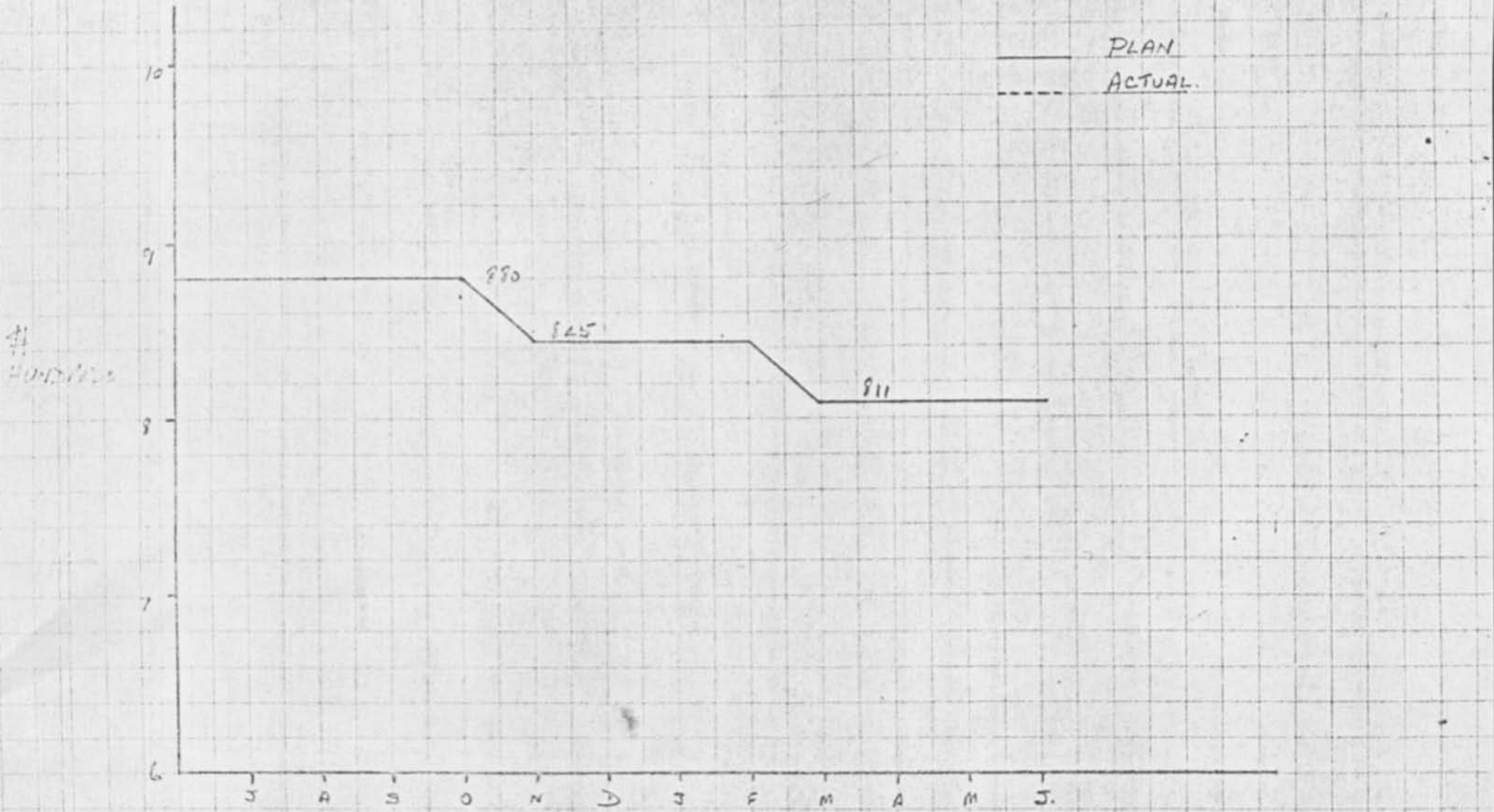
UPPLEFTH

CONTROL CHART C-3



FISCAL 69/70.

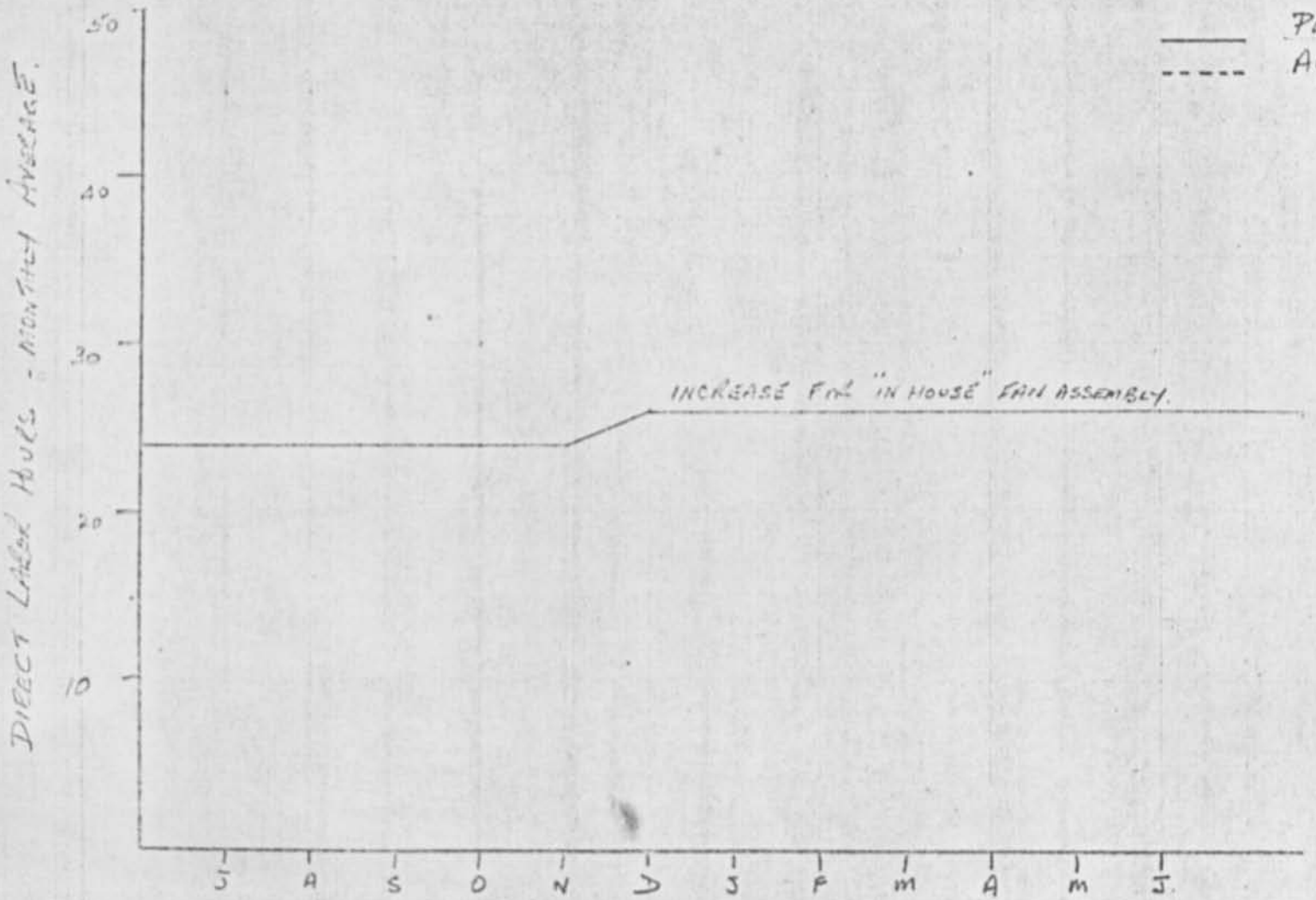
U.K. SUPPLIED PARTS PDP-8L. UK-EF19 CONTROL CIRCUIT C-4.



FISCAL 69/70.

DIRECT LABOR HOURS FI

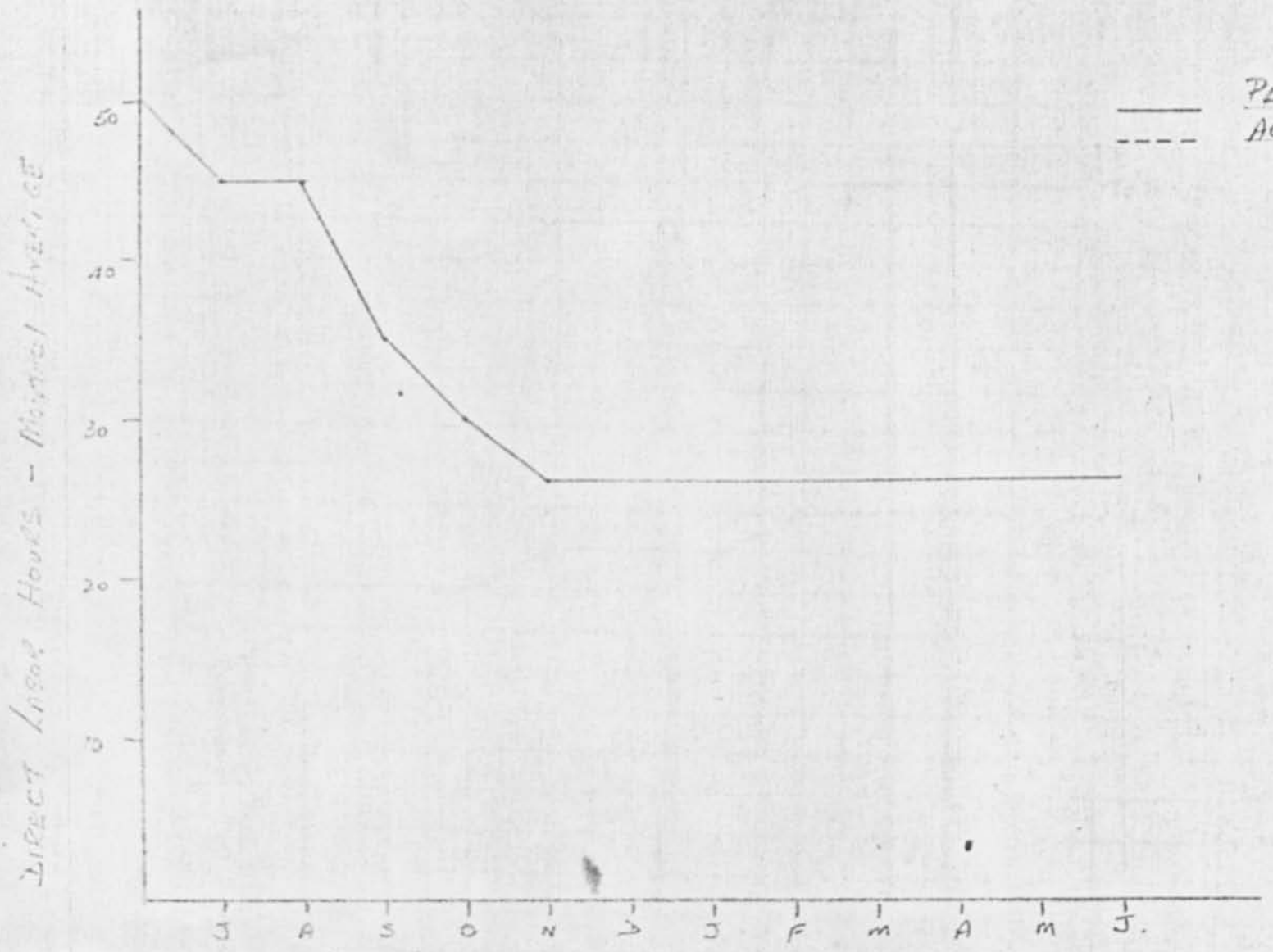
U.K. CENTRAL CHECK-5



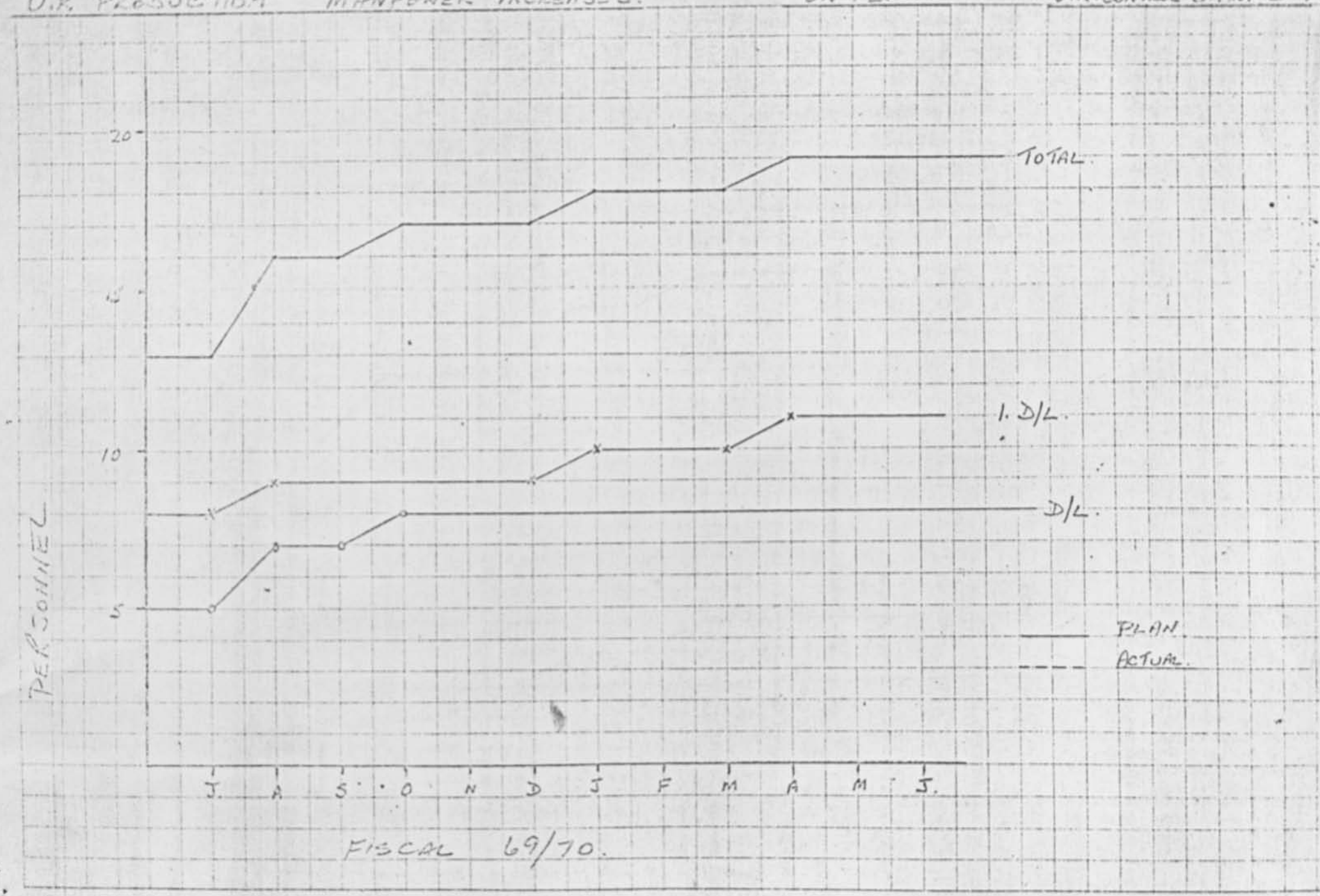
FISCAL YEAR 69/70.

DIRECT LABOR HOURS 9L.

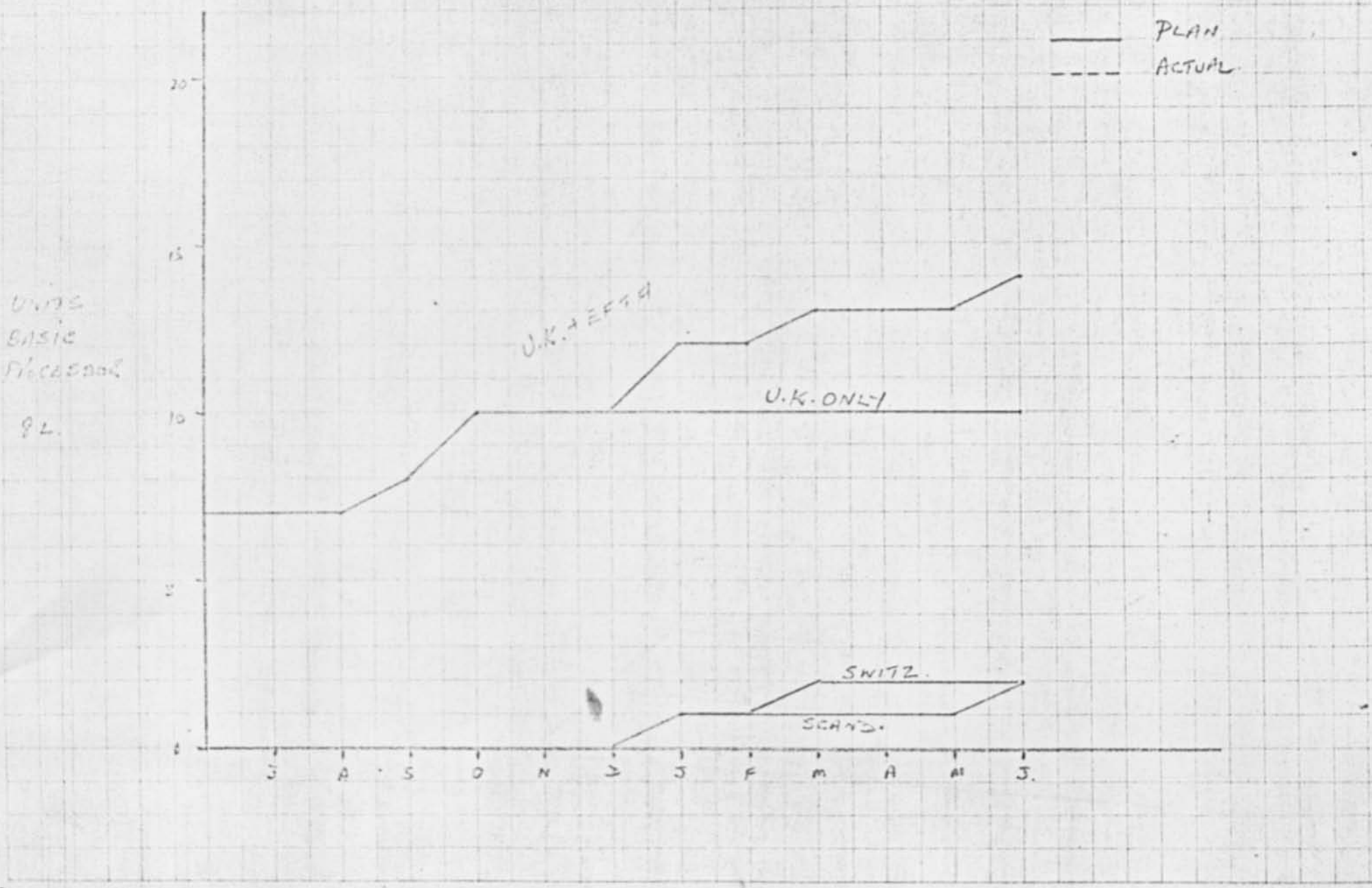
U.K. CONTRACT CLAIM C-6



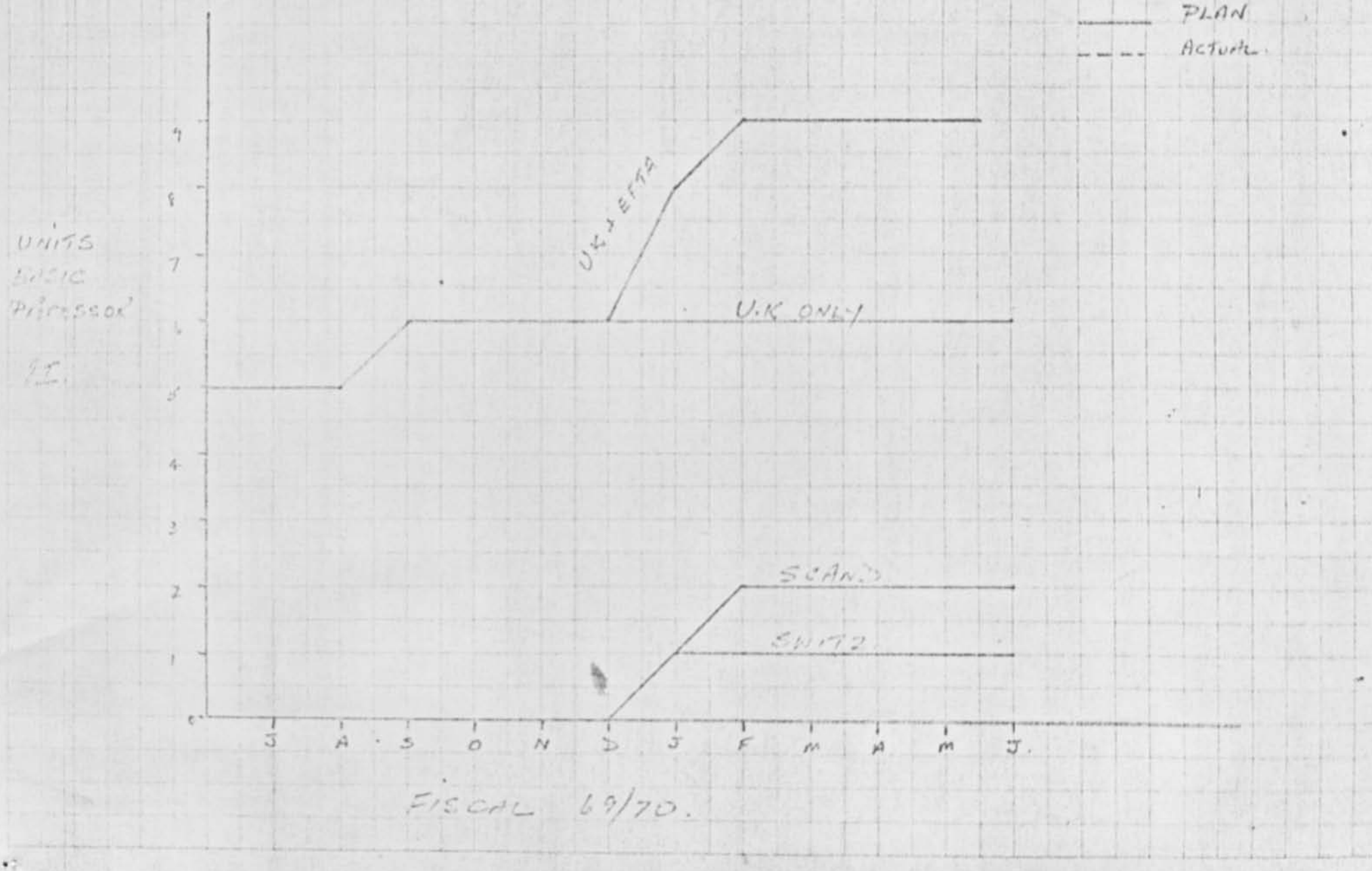
U.K. PRODUCTION MANPOWER INCREASES. UK + EFTA U.K. CONTROL CHART C-7



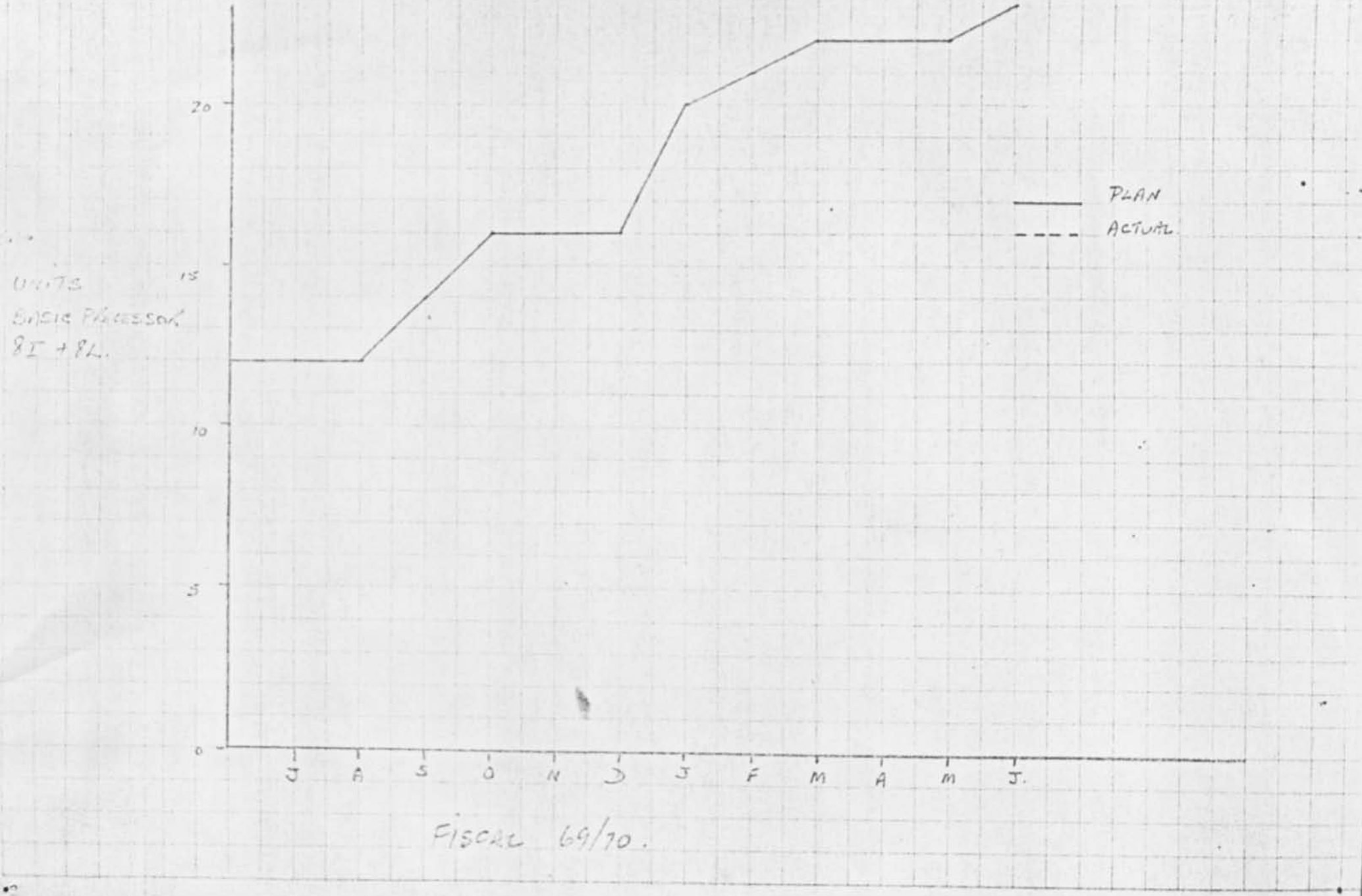
U.K. PRODUCTION / DEDICATION PDP-9L UK + EFTA CONTROL CHART C-8



U.K. PRODUCTION / DESTINATION DDP 8 I U.K + EFTA CONTROL CHART C-9



U.K. PRODUCTION INCREASE 8I + 8L UK 1970 CONTROL CHART C -10



digital INTEROFFICE MEMORANDUM

DATE: September 2, 1969

why not control

SUBJECT: Proposed Capitalization Policy

TO: Operations Committee FROM: Ed Savage

Digital currently has about 250 computers in rotating inventory, an investment of over $2,000,000. at manufacturing cost. A continuation of the current policy of treating all in-house usage as rotating inventory, in my opinion, creates a situation of mismanagement of the company's resources.

I propose that a policy be adopted whereby the requesting manager should capitalize a machine if he needs it for more than one year.

A review of the current inventory being employed reveals that a minimum of $1,200,000 of this inventory could be capitalized. (This is based upon discussions with current users). Let's assume for a moment that this policy is adopted, then what is the immediate impact on the company.

	Financial Statement*		Cash Position	
	Before	After	Before	After
Profit After Taxes	16,082	15,799		
Earning Per Share	$1.75	$1.72	-	+$317,000
Cash Flow Per Share		$.34		

If next you assume that this money is invested in projects which yield the company 25% after tax on its investment then the earnings per share would increase to $1.73.

Which DEC Departments are affected?

The manufacturing, training and programming departments are the major areas which would be affected. Field Demo's, loans, and trade show machines should be subjected to the companies rotational policy. (A separate rotational proposal to be submitted). Certain departments budgeted in anticipation of this change. Those areas which did not budget in this fashion should submit a PCP to incorporate this charge.

Financial Reporting

To describe this equipment in the financial statement as inventory is incorrect. Over 40% of the inventory in question has not rotated in over 1 year and should be classified as fixed assets.

Control

The capitalization policy, if adopted, permits a greater degree of control to be exercised over this investment. Under normal circumstances, an item of this type would be then subjected to the companies investment criteria which has not been the case in the past. It also puts the burden of justification on the cost center manager to plan the proper utilization of his resources to accomplish the tasks which are required of him. This system assigns a financial responsibility which does not exist today.

Disadvantages

The only disadvantage to the company that I foresee is the slight impact on earnings per share. However, many hidden benefits would be accrued from the adoption of this policy. It is difficult to quantify these savings.

Other Benefits

1. Scheduling the machine to and from manufacturing generates a disproportionate amount of administrative effort.

2. On the average, approximately one week of dead time is experienced during the replacement process by the user.

3. Reduction in refurbishing costs.

4. The condition of these machines after the utilization period is such, after a minimum amount of refurbishing the machines can be sold.

*Based on current budget

ELS/ba

digital INTEROFFICE MEMORANDUM

DATE: September 10, 1969

SUBJECT: Answer to your Question Concerning Current Rotational Policy

TO: Operations Committee FROM: Ed Savage

The committee questioned why the current rotational policy is not being adhered to.

I would like to point out that the current policy is adhered to under certain situations. The sales organization, in most instances, follows the rotational policy in its handling of the Demonstration programs both in the domestic and foreign operations.

The program, in my opinion, is unrealistic approach to the problem within the plant. The machines being used internally, are for the most part an intregal part of an on-going operation. To insist that these machines be removed from this routine is a rather costly affair. It would mean the cessation of operations 3-4 times during the year which would introduce delays into the manufacturing and training operations.

Further, it would add a significant burden to manufacturing to refurbish these machines in any significant number. At this time, machines are refurbished only on a "when time is available basis".

The capitalization policy as proposed, in my opinion, will reduce the number of machines being used because the user must justify the investment just as if the computer were on outside purchase. A greater degree of control is implemented due to the fact that a charge, namely depreciation is levied on the user.

There will still be instances in which the best solution to the situation is the rotational approach. The policy should be enforced in such situations.

If you have any further questions, I will attempt to answer them.

ELS/ba

digital INTEROFFICE MEMORANDUM

DATE: August 27, 1969

SUBJECT: Proposals to the Operations Committee

TO: Operations Committee

FROM: Brewster Kopp

I would like to suggest a proposed revision to the procedure for submitting proposals for the consideration of this committee.

The company continues to grow at a very rapid rate making our job of decision making a far more complex one. Many of the proposals which come before us for action involve the overall plans of the corporation.

I suggest that before any such proposals are acted upon by this committee that the proposal indicate that it has been reviewed and approved by the appropriate groups, such as legal, financial, systems, personnel etc, which would be affected by the proposal. If any particular part of the proposal contains information with which reviewer (s) takes exception, then a separate report should be submitted along with the proposal for the committee's consideration.

Implementation of this proposal would aid our decision making process and probably reduce the amount of time required to be spent on discussing each proposal. The mechanics of monitoring this change can be handled by Elsa.

BK/am

B.

digital INTEROFFICE MEMORANDUM

DATE: September 12, 1969

SUBJECT: Investment Analysis Format

TO: Operations Committee

FROM: Clayton Rix

Attached you will find the proposed investment analysis format to be used in analyzing each investment.

Please review.

CER/ba
Attachment

DIGITAL EQUIPMENT CORPORATION
INVESTMENT ANALYSIS

Project Description:

Date

Investment Requirements

Investment for Capital Project to be Shown in Capital Plan

	1970	1971	1972 & after	Total
Land				
Buildings				
Manufacturing Equip.				
Demo & Training Eq.				
In-House Equip.				
Other				
Total				

"Immediate" Expense from this Project (Not to be duplicated in Cash Flow expense Sch. E)

Relocation Expense				
Inventory Loss				
Start-up Cost				
Other				
Total				

Additional Working Capital Requirements for this Project

Accounts Receivable				
Raw Material Inventory				
W I P Inventory				
Finished Goods Inventory				
Other				
Total				

GRAND TOTAL (Y)				

E.

Computation of Cash Flow Back

No. of Years	Approx. Year	Gross Income or Saving	Expenses	Depreciation	Net Inc. Before Taxes	Net Inc. After Taxes	Cash Flow Back	Discounted	
		(a)	(b)	(c)	(d)	(e)	(f)	Factor	Present Worth
1								.885	
2								.689	
3								.537	
4								.418	
5								.326	
6-10								.163	
Cash Flow Back - Discounted								X	
Capital Employed								Y	
Index of Financial Desirability (X ÷ Y)									

Note: Col. D = Col A - B - C
Col. E = Col D x 40.7
Col. F = Col C + E

Additional Notes or Computations

See Reverse Side for Guidelines

Guidelines & Assumptions

Definition: Present value is the value today of future income when discounted with a given interest rate

The most significant assumption and quidelines are the following:

a. Life - The life used for calculating depreciation should usually be the life used for account purposes.

b. Depreciation Method and Salvage Value - Depreciation is to be calculated on the straight line basis. The entire investment is to be depreciated to zero. In the event of an unusual circumstance where you believe the above assumptions will produce unrealistic results in your computation please contact the Budget Department.

c. Discounting Effect on Original Investment - The original investment is not subjected to any discount ing treatment. If the investment will occur over more than one year, this factor will be considered by the Budget Department.

d. Continuous Discounting Concept - The interest factors on the computation form are continuous discounting rates rather than period rates. This means that the cash flow back is assumed to be obtained uniformly over the course of each year rather than a lump sum at the end of each year.

e. Federal & State Income Tax - The Federal & State Income tax rate to be used is 59.3%. By multiplying the net income before tax by 40.7% the income after tax is computed directly.

f. Rounding of Amounts - Values should be shown in hundreths of dollars.

Investment Requirements (Exhibit A) - All relevant cash requirements for a project should be developed and shown on this schedule.

"Immediate"Expense Portion (Exhibit B) - "Immediate expense is defined as a one time expense directly associated with implementing the project. Such expenses occur at the beginning of the project.

CAUTION: - Do not include recurring expense items as immediate expense, since such items are included in the computation of cash flow. (Col.B of Exhibit E.)

Working Capital Portion (Exhibit C) - Additional working capital requirements should be developed and shown in Exhibit C. The additional working capital is an investment required in conjunction with the implementation of the project and so should be included in developing the total amount of the investment that will be used to compile the sale of return.

Computation of Cash Flow Back -(Exhibit E) -

Gross Income or Savings (Col. A) - This is the most important step in your calculation The utmost care must be exercised in realistically determining either the revenue associated with an investment or a stream of cost savings.

Determine, year by year, the incremental revenue or savings most likely to be generated by the proposed investment. Insert these annual values in column (a).

Again, the most important aspect of the rate of return calculation is your objective estimate of incremental income or savings.

Expenses -(Col. B) - Estimate the incremental expense associated with the assumed revenue or cost savings.

Depreciation - (Col. C) - Calculate annual depreciation amounts based on the company's standard depreciation rates. (Assume zero salvage value). The purpose of this depreciation column is to facilitate the subsequent tax calculation. The depreciation amount is added back following the tax calculation.

Cash Flow Back - (Col. F) - This represents the net incoming stream of cash. Depreciation must be added back to net income after tax to obtain the cash flow back.

*The Budget Department will provide any assistance you may require in filling out this form.

digital INTEROFFICE MEMORANDUM

DATE: September 2, 1969

SUBJECT: Organization/Personnel Announcements

TO: Operations Committee

FROM: Graydon Thayer

Attached is a proposal designed to help us improve our effectiveness in coordinating the release of organization/personnel announcements. It has been reviewed and approved by Bob Lassen and Win Hindle.

GT/lw

digital INTEROFFICE MEMORANDUM

DATE: August 25, 1969

SUBJECT: Organization/Personnel Announcements

TO: Operations Committee FROM: G. A. Thayer

Proposal: To establish within the Personnel Department, the responsibility for coordinating the release and distribution of approved organization/personnel announcements to all managers in the Company.

Current Problems:

1) No central function exists to insure the timely and complete distribution of organization/personnel announcements to management. The Sales Newsletter, special memos, On-line, etc. are used to varying degrees.

2) Several managers are often not notified of organizational changes and personnel announcements.

3) Announcements are frequently made on manager/supervisor appointments without prior approval of the Operations Committee member.

4) Organization charts/lists of managers and supervisors are impossible to keep current without this information coming to the Personnel Department. Frequently, we receive no notification of these changes. This information is essential and affects other key areas of personnel administration.

5) Announcements are frequently incomplete, carry improper titles, lack clarity, etc.

Proposed Procedure:

Organization and Personnel Announcements shall be routed by the department manager to his appropriate Operations Committee member for approval.

Upon approval, announcements will be forwarded to the Personnel Department (G. A. Thayer) for distribution as specified.

Announcements will be sent out by the Personnel Department on a bi-weekly basis, unless specified for immediate release.

/lw

Ken

digital INTEROFFICE MEMORANDUM

DATE: September 10, 1969

SUBJECT: Addendum to PDP-12 PCP of 8-26-69

TO: Operations Committee
Ed Savage

FROM: Richard Clayton

I. Allocation of extra expense money due to PCP.

The PCP proposes to increase the expense lines, Total Eng., Tot. Selling, and Admin. by the sum total of 800K. Of this, some 685K is directly locked to the expansion of business volume.

These expenses are:

G&A	263K
Shared Proj. Eng.	94K
Mfg. Projects	30K
Direct Selling (inc. Prog. Supp.)	219K
Traffic	14K
Production Eng.	13K
Diagnostic Prog.	12K
Program Library	23K
Manuals	15K
Product Mkt. Group, Product Eng. Group } Devote virtually all efforts to support increased business volume.	

The remaining 115K is assigned to starting new projects; some of which existed in the previous plan but which have been dropped to support the increased business volume. The distribution is:

Marketing	35K
Engineering	30K
Programming	50K
	115K

Our estimation is that this 115K expense in FY 1970 as well as its implied continuation (at least 300K) in FY 1971 will account for 500K of Bookings in FY 1970 and some 1,500K in Bookings and Billings in FY 1971. Most of these differences are in the single user laboratory market.

II. Appendix I, Different Representation of PCP

For Q2 through Q4 FY 1970 a comparison is shown of the present budget and the PCP. This gives a much more positive view of the change because just the period of change is represented.

RJC/reb

9-9-69

APPENDIX I

Comparison of Q2 through Q4 FY 1970 (000 omitted).

Line	Old Budget	PCP Budget	Change
Bookings	8,000	10,800	35%
Billings	8,125	12,610	55%
Units	270	340	26%
% Discounts	5	7	-2%
Profit	2,134	3,501	65%
% Profit	26.5%	30%	
Selling Expenses	490	659	34%
P. L. Marketing	156	245	58%
Total Selling	900	1,150	28%
P. L. Engineering	335	490	47%
P. L. Programming	86	145	69%
Total Programming	160	215	34%
Total Engineering	640	940	44%

(Note: Cross product expenses are significant for both total Engineering and total Marketing.)

CONFIDENTIAL

digital INTEROFFICE MEMORANDUM

DATE: August 26, 1969

SUBJECT: PDP-12 Program Change Proposal

TO: Operations Committee

FROM: Richard Clayton/Ed Kramer R.J.C.

We propose to increase PDP-12 billings and profit by 40% for the fiscal year 1970 while maintaining a profit margin at the projected level of 25%. The bookings record, customer and sales force acceptance, and present production success justify the revision at this time. The increased shipping rate will allow improvement in delivery time and increased business in FY 1971.

I. Bookings

The bookings of the PDP-12 over its seven-month life through July have been 71% over budget ($6.6 million). The accumulated sales effort and sales projections indicate we are above a sustained average bookings of 1 million per month (even with allowance for the price change).

II. Acceptance

The enthusiasm of the sales force has been gratifying. The PDP-12 has been accepted by seven medical OEM's. The business effect of the LV Computer account (over 30 systems) is also significant. The installed machines are operating, and the customer satisfaction is good for this point in the product life.

III. Production

Activity of recent weeks has shown that the PDP-12 can be produced in the way planned. With the availability of parts, the existing production staff is maintaining a 1-machine-per-day rate. With improved parts flow and more experience, significant improvements can still be expected.

As backup to this proposal, the following pages are attached.

RJC/reb

CONFIDENTIAL

BUDGET CHANGE SUMMARY FY1970

	Old Budget	New Budget	% Change
Bookings	10.0M	13.9	39%
Billings	9.960	13.915	40%
# of Units	330	385	17%
% of Discount	5%	7%	-(2)%
Profit	2.55M	3.46M	36%
% Profit	25.6%	25.0%	-0.6%
Dom. & For. Selling	640K	895K	+34%
P. L. Marketing	196K	295	51%
Total Selling	1140K	1450K	27%
P. L. Eng.	448K	600K	+34%
(Programming)	86K	145K	+69%
Total Eng.	833K	1103K	+31%

Attached are engineering and marketing back-up data and brief project descriptions.

DIGITAL EQUIPMENT CORPORATION AND SUBSIDIARIES — PRODUCT LINE PDP-12
CONSOLIDATED STATEMENTS OF OPERATIONS — DATE August 20, 1969

PDP-12 Program Change Proposal

CONFIDENTIAL

		Fiscal Quarters 1970				Total Fiscal Year 1970
		First @31K	Second @36K	Third @38.2K	Fourth @40K	
	# of Units Shipped	5/15/25=45	30/30/30=90	40/40/45=125	40/40/45=125	385
	BOOKINGS	3100	3400	3600	3800	13,900
1	Equipment Sales of Parent	1400	3250	4800	5400	15,540
2	Equipment Sales of Subsidiaries					
3	Contributions					
4	Allowances					
5	Discounts	(100)	(226)	(336)	(379)	1041 7%
6	INCOME FROM SALES OF EQUIP	1300	3024	4464	5021	13,809
7	Rental Income					
8	Maintenance & Service Income	5	18	35	48	106
9	NET OPERATING REVENUE	1305	3042	4499	5069	13,915
10	Domestic Job and Standard Costs	44.8/630	42.7/1,380	40/910	38/2040	5960
11	Subsidiary Job and Standard Cos					
12	Manufacturing Overhead Varianc					
13	Variances From Standard					
14	Allowances					
15	Warranty & Installation Expense	110	200	320	364	994
16	Royalty Expense .4	7	13	19	22	61
17	COST OF SALES - EQUIPMENT	747	1684	2249	2426	7015
18	Depreciation of Leased Equipmer					
19	Maintenance & Service Expense	3	12	23	32	70
20	COST OF NET OPERATING REVENUE	750	1605	2272	2658	7085
21	Margin on Equipment Sales (6-17	553	1431	2215	2595	6794
22	Margin on Rentals (7-18)					
23	Margin on Maintenance & Servic	2	6	12	16	36
30	TOTAL GROSS MARGIN (21 + 22 +	555	1437	2227	2611	6830
40	Product Line Engineering	110	150	165	175	600
41*	Shared Product Engineering	37	64	88	101	290
42*	Manufacturing Projects	9	16	22	25	72
	Cross Product Eng.	30	40	33	38	141
	TOTAL ENGINEERING EXPENSE	186	270	308	339	1103
	Cross Product Eng.	50	71	83	91	295
		200	220	220	219	859
		16	35	40	40	131
		36	34	47	48	165
		302	360	390	398	1450
60	ADMINISTRATIVE EXPENSE	111	188	242	279	820
62*	OTHER (INCOME) & EXPENSE					
70	PROFIT BEFORE FEDERAL TAXES	(44)	630	1237	1545	3457

*To be completed by accounting

25%

DIGITAL EQUIPMENT CORPORATION -4-

BUDGET STATEMENT OF OPERATIONS DATE 8-27-69

PDP-12 Program Change Proposal 000 omitted

CONFIDENTIAL

		Fiscal Quarters 1971				Total Fiscal Year 1970
		First	Second	Third	Fourth	
	BOOKINGS	4,800	4,700	4,500	4,000	18,000
1	Equipment Sales of Parent	4,500	5,100	5,400	5,600	20,600
2	Equipment Sales of Subsidiaries					
3	Contributions					
4	Allowances					
5	Discounts	300	300	400	400	1,400
6	INCOME FROM SALES OF EQUIP	4,200	4,800	5,000	5,200	19,200
7	Rental Income					
8	Maintenance & Service Income	60	70	80	90	300
9	NET OPERATING REVENUE	4,260	4,870	5,080	5,290	19,500
10	Domestic Job and Standard Cost	1,800	2,000	2,075	2,125	8,000
11	Subsidiary Job and Standard Cos					
12	Manufacturing Overhead Varianc					
13	Variances From Standard					
14	Allowances					
15	Warranty & Installation Expense	280	280	290	300	1,150
16	Royalty Expense	20	22	24	24	90
17	COST OF SALES - EQUIPMENT	2,100	2,302	2,389	2,449	9,240
18	Depreciation of Leased Equipmer					
19	Maintenance & Service Expense	30	35	40	45	150
20	COST OF NET OPERATING REVENUE	2,130	2,337	2,429	2,494	9,390
21	Margin on Equipment Sales (6-17	2,100	2,498	2,611	2,751	9,960
22	Margin on Rentals (7-18)					
23	Margin on Maintenance & Servic	30	35	40	45	150
30	TOTAL GROSS MARGIN (21 + 22 +	2,130	2,533	2,651	2,796	10,110
40	Product Line Engineering	210	230	240	270	950
41*	Shared Product Engineering	80	90	110	120	400
42*	Manufacturing Projects	20	24	27	29	100
43	Cross Product Engineering	100	100	100	100	400
44	TOTAL ENGINEERING EXPENSE	410	444	477	519	1,850
50	Product Line Marketing	110	120	130	150	510
51	Domestic & Foreign Selling	290	310	290	250	1,140
52	Advertising & Promotion	60	100	80	60	300
53	Cross Product Marketing	100	100	100	100	400
54	TOTAL SELLING EXPENSE	560	630	600	560	2,350
61*	ADMINISTRATIVE EXPENSE	260	270	280	290	1,100
62*	OTHER (INCOME) & EXPENSE					
70	PROFIT BEFORE FEDERAL TAXES	900	1,189	1,294	1,427	4,810

25%

*To be completed by accounting

PRODUCT LINE PDP 12

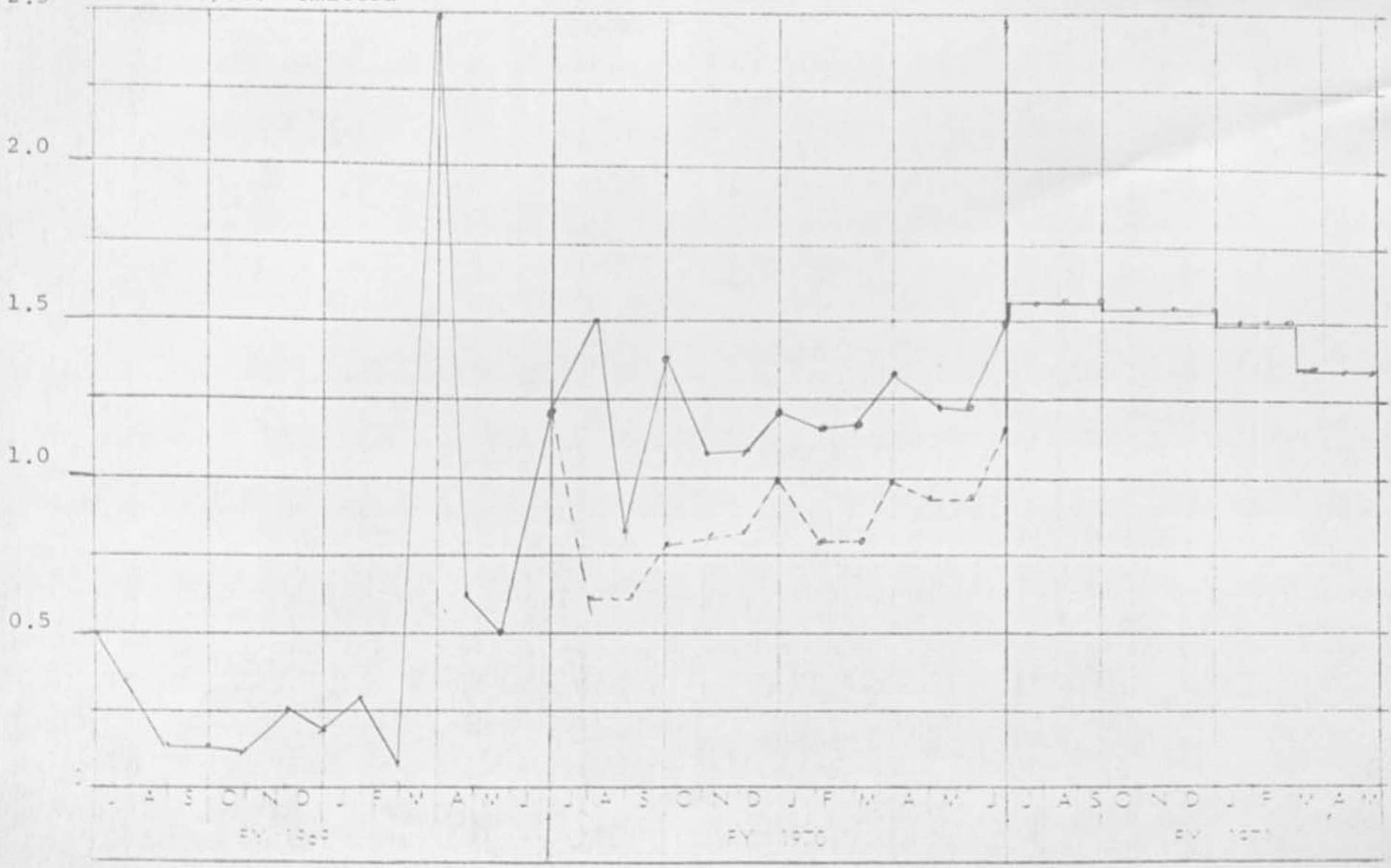
Title BOOKINGS

Date 8-27-69

000,000 omitted

PROPOSED & ACTUAL ——

PRESENT BUDGET ----



Billings

PRODUCT LINE PDP 12

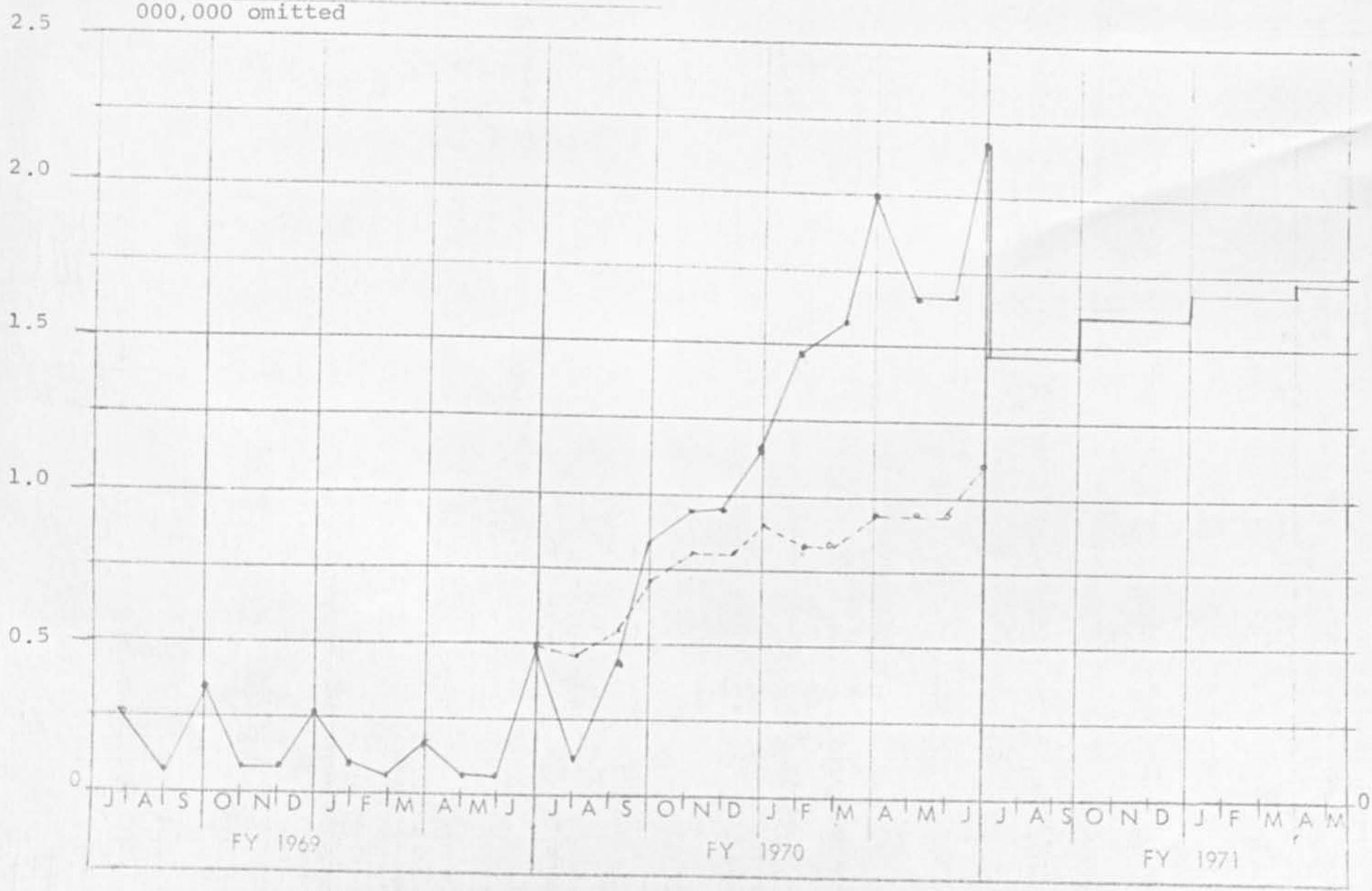
Title BILLINGS

Date 8-27-69

000,000 omitted

PROPOSED & ACTUAL ——

PRESENT BUDGET - - - - -



CONFIDENTIAL

PRODUCT LINE PDP 12

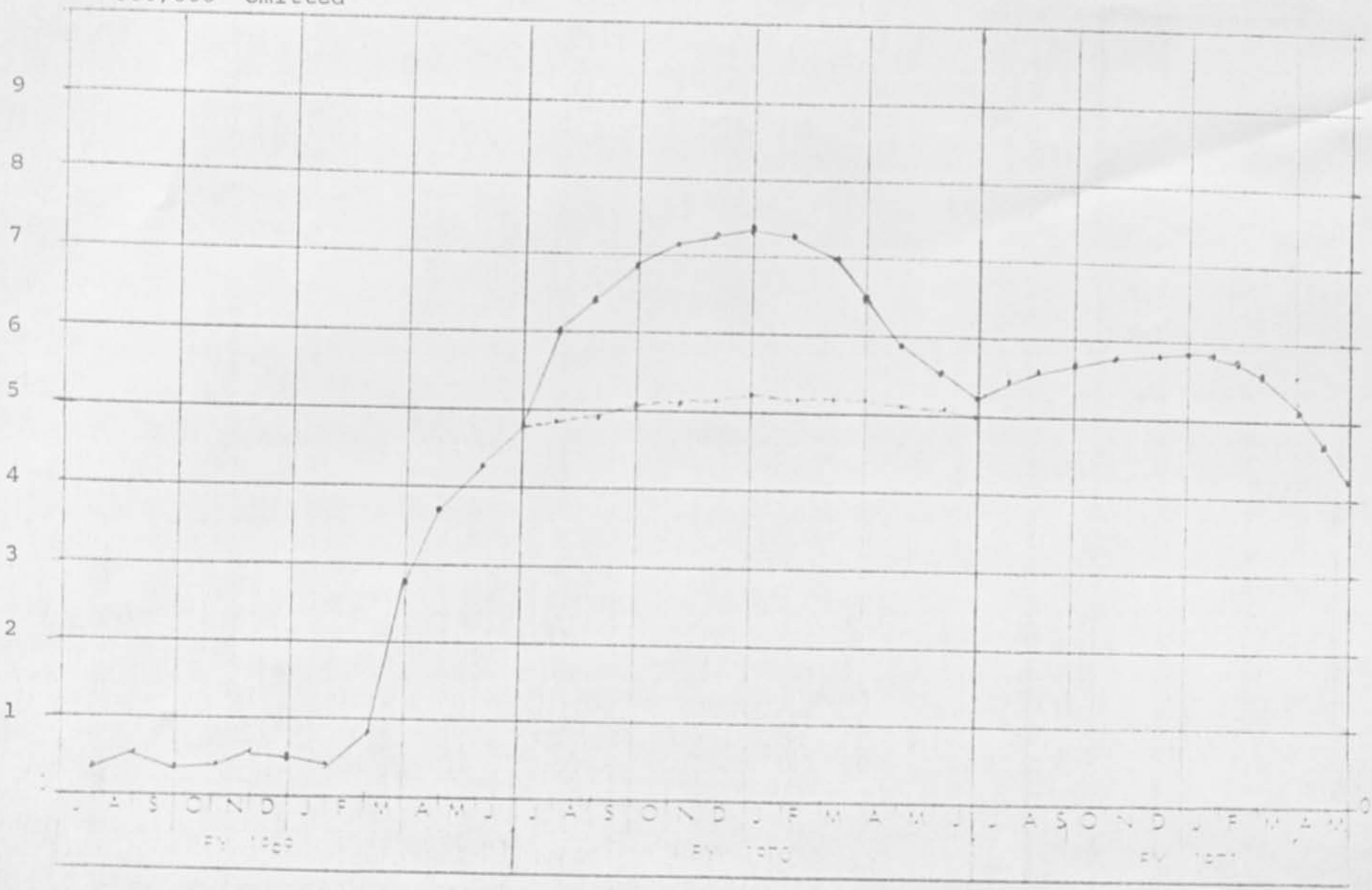
Title BACKLOG

Date 8-27-69

000,000 omitted

PROPOSED AND ACTUAL ____

PRESENT BUDGET ----



CONFIDENTIAL

ENGINEERING PROJECTS

I. Planned to start in FY70:

1) Signal Processing Package

A group of programs to allow use of the PDP-12 to collect, analyze, and output results from real-time processes. This is a collection of unified programs for experimental use, not a computer-pack for process control.

2) MONO DISK

Shared with PDP-8 Group for hardware, integrate into PDP-12 Software.

3) Analytical Instrumentation

A general-purpose interface for connecting to gas chromatographs, spectrometers, shaft-encoders, and stepping motors. This is in conjunction with modules of 1 above.

4) Small Hardware Projects

a) Keyboard for use on console of PDP-12.

b) Light Pen for use with VR12.

c) Alphanumeric displays.

d) Special customer interfaces which have long-range appeal.

II. Longer-range items which, if started, would have some FY70 expense:

1) PDP-12 Face Lift or Redesign

The method of phase in of the TU56, cross-product memory, and future MSI, all affect the future PDP-12 development programs.

2) TSS-12 or Background-Foreground Programming

This programming development could substantially prolong product life.

Marketing Projects

1. Marketing effort will be expended to help promote and sell the new peripherals, such as the Mono-Disk, Light Pen, additional displays, etc.

2. Increase in marketing staff to handle the larger product-support functions due to the increased volume of business.

3. Full-time marketing effort including a promotional campaign for the Analytical Instrumentation and Signal-Processing Packages.

Projected Market Segments (Billings)

Market Area	FY70		FY71	
	%	$	%	$
Lab & Univ.	48	6.6	27	5.2
Medical OEM	20	2.8	26	5.0
Non Medical OEM	14	2.0	21	4.0
LABCOM	18	2.5	26	5.0
	100	13.9	100	19.2

digital INTEROFFICE MEMORANDUM

DATE: September 4, 1969

SUBJECT: SCHEDULE REVIEW PROCEDURE

TO: Operations Committee FROM: Steve Sobel

1) Attached is a blank Hardware Release Milestone Chart which, over the last couple of months, has been distributed to Engineering Managers. The plan was to have these filled out and made available* at Schedule Review Meetings for projects being reviewed. Revised sheets would be submitted only when the indicated "current schedule" in the eyes of the product line becomes unrealistic

Experience to date reveals a strong reluctance to provide the information. This is due in part to the fact that marketing type information is required as well as a vivid documentation of a revised schedule when major slippages occur.**

Based on the lack of support for the Milestone Charts, it is suggested that their use be discontinued.

2) Should we have representatives from Field Service (product support) come to Schedule Review Meetings?

Steve

---

*possibly by making transparencies which could be projected onto a screen.

**No financial data (development costs to date vs budget, changes in estimated manufacturing cost, lost revenues due to slippages) is requested other than citing a discrete project number (if it exists) and no information is sought on changes in performance goals.

bn
Attachments

COMPANY CONFIDENTIAL

DATE _____

Project Engineer _____
Chrm., Dsn. Rvw. Comm. _____
-- Production Engineer _____

NEW HARDWARE RELEASE MILESTONES

PRODUCT NAME & NUMBERS: _____

DESCRIPTION: _____

_____

_____

MILESTONE	ORIGINAL SCHED.	DONE	CURRENT SCHED.	COMMENTS
1ST DESIGN REVIEW				
SPEC'S FIRM				
BREADBOARD WORKING				
2ND DESIGN REVIEW				
3RD DESIGN REVIEW				
PROTOTYPE RUNNING				
RTB				
FIRST UNITS IN F. S. CKOUT				
REL. TO SHIP & 1ST. SHPMT.				
DIAG. & ACCPT. TESTS DONE				
SALES PIECES AVAILABLE				
PUBLIC RELEASE				
RELEASE TO SALES				
PURCHASE ORDERS ACCPTD.				
MANUALS AVAILABLE				
1ST TRAINING CLASS				
RTP				

BUILD-UP OF FIRST UNITS

MONTH				
QUANTITY				
SOURCE				

DISPOSITION OF FIRST UNITS

QUANTITY	TO	DATE	SOURCE	COMMENTS

NOTES:

PRODUCT NAMES & NUMBERS

Include option numbers for all equipment associated with product name (interfaces, controller, drives, alternative configurations, etc.). Also indicate discrete project number if one charged to.

DESCRIPTION

Indicate what it is, why being developed, and some idea of target specifications. If characterized by particular technology, mention (e.g. "IC" DECtape Controller, "pinch roller" MAGtape drive, and "single capstan" MAGtape drive) If purchased outside, state source.

ADDITIONAL COMMENTS: _____

_____

_____

_____

_____

_____

digital INTEROFFICE MEMORANDUM

DATE: 8/22/69

SUBJECT: Budgeting for Engineering Projects

TO:

FROM: Mike Dowling

Proposal:

That we budget for the revenue and expense of projects costing more than $50,000, and that we tie these budgets to project time schedules.

Advantages:

(1) Will allow us to account for the "opportunity costs" of lost revenues due to delays in projects. Our present accounting system tells us that the RF08/RS08 project was $157K over budget expenditures for FY '69. However, Norm Doelling noted in the minutes of a recent marketing review committee meeting that he estimates the opportunity cost of the delays to be between $10 and $20 Million.

(2) Will allow us to evaluate proposed projects using return on investment. As a bi-product, since equipment for a project should be viewed as part of the investment, it will not need to be analyzed serarately by item.

(3) Budgeting revenues for projects will give people within the company an idea of the relative importance of projects, which should help in allocating engineering resources and in directing management attention.

Procedure:

We should budget tax profit and expense by quarter over a three year period for all engineering projects entailing an investment of over $50K.

"Gross Profit" (before tax) is defined as 40% of "revenue". This assumption is made in order to account for normal manufacturing and administrative costs so profits will be expressed in the proper proportion to expenses. As long as all projects are calculated on the same basis, comparisons of projects should be meaningful. Eventually we might be able to develop P&L statements by project as an integral part of our accounting system so we can budget and report actual contribution to profit rather than assume a percentage.

"Revenue" is defined as the sales of the unit actually being engineered and produced, plus any sales of other items which would not have been derived without the project.

The project schedule is taken from the schedule review charts. It should be summarized on 8½" x 11" paper and attached to the budget.

Exhibit I attached shows two projects, discounted to the present value at an assumed after tax cost of capital of 24% per year (6% per quarter). Project A has the higher PV, and delays in this project will cause the company to incur a higher opportunity cost.

Closer examination will show that Project B is simply Project A with no additional expense, but with the revenue slipped one quarter. Therefore, the difference in the present values is due strictly to the time value of money. In reality, a slip in schedule may cause a change in the profit stream due to orders lost to competition, etc, and this change should be taken into account in determining the cost of delays.

EXHIBIT I

COMPARISON OF NET PRESENT VALUE OF TWO ENGINEERING PROJECTS
($ X 10^3)

PROJECT A	Fy 1970				Fy 1971				Fy 1972				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TOTAL
Revenue	-	-	-	-	400	400	500	500	400	300	100	-	2700
Gross Profit B.T. (40%)	-	-	-	-	160	160	200	200	160	120	40	-	
ENG. EXPENSE	(50)	(50)	(50)	(40)	(20)	-	-	-	-	-	-	-	
NET VALUE B.T.	(50)	(50)	(50)	0	140	160	200	200	160	120	40	-	
VALUE AFTER TAX (50%)	(25)	(25)	(25)	0	70	80	100	100	80	60	20	-	
Present Value Factor (6%/Qtr)	.94	.89	.84	.79	.75	.70	.66	.63	.59	.56	.53	.50	
Net Present Value	(23)	(22)	(21)	0	52	56	66	63	47	33	11	-	$262K

PROJECT B	Fy 70				Fy 71				Fy 72				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TOTAL
Revenue	-	-	-	-	100	400	400	500	500	400	300	100	2700
Gross Profit B.T.	-	-	-	-	40	160	160	200	200	160	120	40	
ENG. EXPENSE	(50)	(50)	(50)	(40)	(20)	-	-	-	-	-	-	-	
NET VALUE B.T.	(50)	(50)	(50)	(40)	20	160	160	200	200	160	120	40	
VAILUE AFTER TAX (50%)	(25)	(25)	(25)	(20)	10	80	80	100	100	80	60	20	
Present Value Factor (6%/Qtr)	.94	.89	.84	.79	.75	.70	.66	.63	.59	.56	.53	.50	
Net Present Value	(23)	(22)	(21)	(16)	7	56	53	63	59	45	32	10	$243K

digital INTEROFFICE MEMORANDUM

DATE: September 10, 1969

SUBJECT:

TO: Operations Committee FROM: Gabe d'Annunzio

Two members of my staff, Pam McGinley and Linda Towle, demonstrated FOCAL very successfully at WESCON. They have formulated the attached proposal based on their experiences in learning and teaching FOCAL. I feel that their approach has great potential and a personal presentation of the details is warranted.

/meb

digital INTEROFFICE MEMORANDUM

DATE: September 10, 1969

SUBJECT:

TO: Gabe d'Annunzio

FROM: Pam McGinley
Linda Towle

Our experiences demonstrating FOCAL at WESCON convinced us that the most effective way to teach FOCAL is through personal instruction. One of FOCAL's main selling points is ease of learning. The present printed material fails to demonstrate this. A new approach appears vital.

We propose that seminars be conducted in key cities throughout the country for educators and engineering managers. Boston is a logical experimental center because it has a high concentration of educational and technical people. The cost would be kept to a minimum since there would be no transportation, overnight hotel, or shipping expenses. If this seminar appeared successful, New York and Chicago would be the next trial cities. We feel that a new approach for supporting literature is necessary to supplement these seminars.

In order for this program to be successful, it is imperative that action be taken immediately. A new school year means new perspectives on all educational levels. Teachers are more eager to approach problems creatively than in the spring. Also, budgets are more flexible. New fiscal quarters for industry complement the educational field at this time. With the threat of calculators to the small computer market, it would be wise to reach engineering managers this fall. Therefore, we would like approval of our proposal as soon as possible.

/meb

Cost for 3-Day FOCAL Presentation

Price of conference room on 128 (closest to technical & education areas)	$ 500.
Coffee and donuts	200.
Field Service	200.
Literature (pencils, paper, handouts)	500.
TOTAL	$1400.

Format of Seminars

Length — 3 days

Time — 9 - 11:30, 1 - 3, 3:30 - 6

Capacity - 30 people/session

Dick May's Estimate of Sales

For 300 people, 5 PDP-8's* (estimated on lowest possible figure not including any possibility of 4 user system.)	$40,000.

* A $2800 ad in one issue of DATAMATION, or an equivalent amount of Public Relations, would not result in this number of sales.

digital INTEROFFICE MEMORANDUM

DATE: September 10,1969

SUBJECT: FOCAL

R.E.M.

TO: Operations Committee FROM: Richard May

Linda Towle and Pam McGinley did an excellent job in demonstrating FOCAL at the WESCON Show in San Francisco. Their effort in learning FOCAL amounted to approximately four hours.

Shortly they will be making a proposal to the Operations Committee on an approach to promote FOCAL to engineering groups as well as to the educational environment. I have discussed the approach with them and am in agreement.

I hope you will seriously consider their proposal and consider approving it on an experimental basis in the Boston area.

d

K-Olsen

digital INTEROFFICE MEMORANDUM

DATE: September 12, 1969

SUBJECT: PDP-11 PRICE PROPOSAL

TO: Operations Committee FROM: Nick Mazzarese

PROPOSAL

This proposal covers the pricing of the PDP-11/10 and PDP-11/20 and related options which will be sold prior to formal announcement of the product.

a) Pricing

It is proposed that the 11/20 be priced at $10.8K, and the 11/10 be priced at $7.7K. Attached to this proposal is a price list including all options which will be initially sold including their cost, selling price and delivery. The prices have been chosen to give us sufficient margin to sustain this product by investments in market development and new products. At a steady level the product should have a return of at least 25% before taxes. It is felt that this margin is necessary to give us sufficient flexibility to react to any competitive pressure which might develop during the next two years. The forecasted profit is conservatively stated in that we have assumed a 2.7 markup on processors after an OEM discount of $1K. Our average option markup is approximately 3.2, and options should represent approximately 30% of our business.

b) Discounts

It is proposed that this product use the standard DEC discount plan. However, a $1K OEM discount will be granted for each 11/20 or 11/10 purchased by an OEM customer. The standard discount will be applied to the OEM price.

c) Delivery

It is proposed that we make our first delivery commitment for the month of April. Attached to this memo is a chart showing our production plan, worse case view of this production plan and what customer commitments will be made.

As we are currently on schedule (relative to our July plan) for the 11/20, we are optimistic that the worse case forecast will not prevail.

d) Short Term Sales Strategy

Our short term sales strategy will be to sell to OEM's using our existing sales force. We will hand pick one or two salesmen per region and sell only through them. This will minimize perturbation of other products while achieving our short term goals.

The first customers we select will be those with whom we have already had contact and who represent potential lost sales for current products. Beyond that, we will concentrate on new large OEM accounts.

The salesmen will be selected at the Regional Managers Meeting on September 19. The chosen salesmen will come to Maynard and receive a three day PDP-11 Indoctrination Course.

Delivery Schedule for Basic 11/20

	Feb. 6, '70	March	April	May	June	July	August	September
Production Committment	*20	40	50	60	40	30	30	30
Pessimistic Evaluation			*20	**30	40	50	60	
Customer Committments			10	20	40	50	60	
In House Committments	16	3	6	3	3	4	4	4

Delivery Schedule for PDP-11/20 Systems

	February	March	April	May	June	July	August	September
Production Committment			20	40	60	70	70	70
Pessimistic Evaluation					15	20	40	
Customer Committments					15	20	40	

* Not Deliverable
** Boards may not meet production standards.

PDP-11/20 Cost Estimate

Central Processor & Console (incl. $108.00 ck. out labor)	$1185.07
4K X 16 Memory & Control (incl $36.00 ck. out labor)	$1054.32
Teletype Control	$130.03
Power Supply	$142.80
Chassis Assembly	$113.00
Basic Assembly & Test	$133.00
Basic Hardware Total	$2758.22
Teletype	$779.00
Total	$3537.22
For estimating purposes, Total Cost	$3600.00

DIGITAL EQUIPMENT CORPORATION AND SUBSIDIARIES
BUDGET STATEMENT OF OPERATIONS

PRODUCT LINE PDP-11
DATE 9/11/69

		1969	1970	1971	1972	Product thru Maturity
	BOOKINGS					
1	Equipment Sales of Parent		2,850	17,000	25,000	44,850
2	Equipment Sales of Subsidiaries					
3	Contributions					
4	Allowances					
5	Discounts		(350)	(2,210)	(3,250)	(5,810)
6	INCOME FROM SALES OF EQUIP		2,500	14,790	21,750	39,040
7	Rental Income					
8	Maintenance & Service Income					
9	NET OPERATING REVENUE		2,500	14,790	21,750	39,040
10	Domestic Job and Standard Cost		1,290	6,130	8,700	16,120
11	Subsidiary Job and Standard Cos					
12	Manufacturing Variance					
14	Allowances					
15	Warranty & Installation Expense		250	1,020	1,500	2,770
16	Royalty Expense		10	60	90	160
17	COST OF SALES - EQUIPMENT		1,550	7,210	10,290	19,050
18	Depreciation of Leased Equipmer					
19	Maintenance & Service Expense					
20	COST OF NET OPERATING REVENUE		1,550	7,210	10,290	19,050
21	Margin on Equipment Sales (6-17					
22	Margin on Rentals (7-18)					
23	Margin on Maintenance & Servic					
30	TOTAL GROSS MARGIN (21 + 22 +		950	7,580	11,460	19,990
40	Product Line Engineering	415	1,410	1,100	1,200	4,125
41*	Shared Product Engineering		70	295	435	800
42*	Manufacturing Projects		20	60	90	170
43	Cross Product Engineering					
49	TOTAL ENGINEERING EXPENSE	415	1,500	1,455	1,725	5,095
50	Product Line Marketing	40	100	400	600	1,140
51	Domestic & Foreign Selling		300	890	1,400	2,590
52	Advertising & Promotion		200	200	400	800
53	Cross Product Marketing					
59	TOTAL SELLING EXPENSE	40	600	1,490	2,400	4,530
61*	ADMINISTRATIVE EXPENSE	45	350	890	1,300	2,585
62*	OTHER (INCOME) & EXPENSE					
70	PROFIT BEFORE FEDERAL TAXES	(500)	(1,500)	3,745	6,035	7,780
				25%	25%	20%

DIGITAL EQUIPMENT CORPORATION AND SUBSIDIARIES
BUDGET STATEMENT OF OPERATIONS

PRODUCT LINE PDP-11
DATE 9/11/69

						1971
BOOKINGS						
1	Equipment Sales of Parent	80% @ 9800	20% @	10800	100 per month	17,000
2	Equipment Sales of Subsidiaries					
3	Contributions					
4	Allowances					
5	Discounts	13% Gross				(2,210)
6	INCOME FROM SALES OF EQUIP					14,790
7	Rental Income					
8	Maintenance & Service Income					
9	NET OPERATING REVENUE					14,790
10	Domestic Job and Standard Cost	80% @ 36.8%	20% @	33.3%		6,130
11	Subsidiary Job and Standard Cos					
12	Manufacturing Variance					
14	Allowances					
15	Warranty & Installation Expense	6% Gross				1,020
16	Royalty Expense	.4% Net				60
17	COST OF SALES - EQUIPMENT					7,210
18	Depreciation of Leased Equipmer					
19	Maintenance & Service Expense					
20	COST OF NET OPERATING REVENUE					7,210
21	Margin on Equipment Sales (6-17					
22	Margin on Rentals (7-18)					
23	Margin on Maintenance & Servic					
30	TOTAL GROSS MARGIN (21+22+					7,580
40	Product Line Engineering	75% FY 70				1,100
41*	Shared Product Engineering	2% Net				295
42*	Manufacturing Projects	.4% Net				60
43	Cross Product Engineering					
49	TOTAL ENGINEERING EXPENSE					1,455
50	Product Line Marketing					400
51	Domestic & Foreign Selling	6% Bookings (Net)				890
52	Advertising & Promotion					200
53	Cross Product Marketing					
59	TOTAL SELLING EXPENSE					1,490
61*	ADMINISTRATIVE EXPENSE	6% Net				890
62*	OTHER (INCOME) & EXPENSE					
70	PROFIT BEFORE FEDERAL TAXES					3,745
						25%

PDP-11 COMPETITIVE PRICING

Machine	4K with ASR33 OEM Price	8K with ASR33	4K @ 50 Qty. Price	8K @ 50 Qty. Price	Discount @ 50 Qty. Price
NOVA	$ 9,000	$12,650	$6,170	$ 8,450	36%
SNOVA	$ 11,700	[$15,700] *	$7,900	[$10,450] *	
316	$ 10,900	$16,400	$8,200	$12,300	25%
2114	$ 11,950	$16,450	$8,950	$12,350	25%
MAC16	$ 11,950	$15,900	$8,950	$11,950	25%
PDP-11/20	$ 9,800	$13,300	$8,036	$10,906	18%
PDP-11/10	$ 6,700	---	$5,500	---	18%

* Assumes $4K=4K core

September 12, 1969

PDP-11 PRICE AND OPTION LIST

Type	Description	Availability	Cost	Multiplier	Price
	BASIC SYSTEMS				
PDP-11/20	KA11 Central Processor Programmer's Console. 4096 16-bit words of 1.2 usec. Read/Write Core. Mounting Box. Power Supply. Power Fail Detection & Restart. ASR 33 TTY and Control Space for one additional small peripheral controller. 120/240V, 50 or 60 HZ (specify)	February	3,600	2.7/3.0	9,800/ 10,800
PDP-11/10	KA11 Central Processor 11/10 Console Mounting Box Power Supply 1024 16-bit Read Only words of Memory 128 words of Read/Write Core Memory 120/240V, 50 or 60 HZ (specify)	July	2,486	2.7/3.1	6,700/ 7,700
_____	Line Frequency Clock Causes Vectored Priority Interrupt each 16.6 ms with a 60 HZ power source and each 20 ms with a 50 HZ power source	June	60	4.1	250

Type	Description	Availability	Cost	Multiplier	Price
	MEMORY (CORE)				
MM11-E	4096 16-bit 1.2 usec core memory and System Mounting Unit	March	1,075	3.26	3,500
MR11-A	1024 16-bit Read Only Core Memory & System Mounting Unit	July	500	3.00	1,500
MW11	128 Words of Core Read/Write Memory	July	240	3.15	750
	TELETYPE				
LT33-DA	ASR-33 Teletype 120V - 60HZ	February	779	1.9	1,500
LT33-DB	ASR-33 Teletype 240V - 50HZ	February	779	1.9	1,500
LT33-CA	KSR Teletype 120V - 60HZ	February			1,200
LT33-CB	KSR Teletype 240V - 50HZ	February			
KL11	Teletype Control Including Vectored Priority Interrupt	February	125	3.2	400

Type	Description	Availability	Cost	Multiplier	Price
	PAPER TAPE				
PC11 & PC05-C	High Speed Paper Tape Reader Punch and Control including Vectored Priority Interrupt 120V - 60 Hz	March	1,000	3.9	3,900
PC11 & PC05CA	High Speed Paper Tape Reader Punch and Control including Vectored Priority Interrupt 240V - 50HZ	March	1,000	3.9	3,900
PC11 & PC05-R	High Speed Paper Tape Reader and Control including Vectored Priority Interrupt 120V - 60HZ	March			2,400
PC11 & PC05RA	High Speed Paper Tape Reader and Control including Vectored Priority Interrupt 240V - 50HZ	March			
	MOUNTING DRAWERS				
BA11-CC	Basic Mounting Box with: Table Top Cover Power Supply Fan Assembly 120 or 240V (specify) 60 or 50HZ	May	280	3.0	850

Type	Description	Availability	Cost	Multiplier	Price
BA11-CS	Basic Mounting Box with Tilt and Lock Chassis Studs Power Supply Fan Assembly 120 or 240v (Specify) 60 or 50 HZ	February	280	3.0	850
BA11-EC	Extension Mounting Box with Table Top Cover Power Supply Fan Assembly 120 or 240v - 60 or 50 HZ (Includes cable from BA11-CE)	May	280	3.0	850
BA11-ES	Extension Mounting Box with Tilt and Lock Chassis Slides Power Supply Fan Assembly 120 or 240v (60 or 50 HZ) (Includes cable from BA11-CS)	May	280	3.0	850
		Mounting fixtures for peripheral controls interface modules			
DD11	Peripheral Mounting Unit for support of peripheral control Address Select and Vectored Interrupt modules	April	55	3.2	175
_____	Blank, Unwired Mounting Unit for support of interface modules (Wire wrap pins)	February	21	4.3	90

Type	Description	Availability	Cost	Multiplier	Cost
_____	Mounting Unit Connector for connecting Mounting Unit to UNIBUS within a Mounting Box	February	13.46	3.3	45
	CABINETS				
H950	Free Standing Base Cabinet with end panels	February			650
H951	Option Cabinet Free standing base cabinet without end panels	February			430
	INTERFACE EQUIPMENT				
_____	Device to UNIBUS Transmitter Module,- 16 bits (Edge connector)	March			30
_____	Device From UNIBUS Receiver Module,-16 bits (Edge connector)	March			30
M105	Address Select Module (4 addresses selectable)	March	20	3.2	65
_____	Interrupt Control Module (2 vectored interrupt capability)	March	30	3.3	100
	SPARE PARTS				
_____	Spare Parts Kit for 11/20 Central Processor.	May	740.00	3.5	2,590
_____	Spare Parts Kit for 11/20 Read/Write memory.	May	200.00	3.5	700

Type	Description	Availability	Cost	Multiplier	Cost
_____	Spare Parts Kit for 11/10 Read Only Memory	May	Not Firmly Established		
H720	Power Supply Subsystem 120 or 240v (Specify)	May	150	3.3	500
_____	Power Supply Spare Parts Kit	May	56.60	3.5	195

SOFTWARE

_____	GPS -1 Package including Pal 11 A Assembler Online Debug Techniques (ODT 11) IOX Buffered Device Driver routines Mathematical Subroutines	January	No Charge
	Basic Interpreter (4K version)	February	

OPERATIONS COMMITTEE MEETING

September 8, 1969

CONFIDENTIAL

AGENDA

1. Additions and Corrections to Minutes of the September 2nd Meeting
2. Monthly Report on Status of Responsibilities - (Dick Best)
   (See attached report)
3. Module Product Line Proposals - (Fred Gould)
   (See attached report)
4. PDP-10 Analysis of Fiscal Year 1969 Quarter 4 - (Bob Savell)
   (See attached report)
5. Long-Range Plans for the PDP-10 - (Bob Savell)
6. Discussion of Personnel Problems and List of Problems Developed in Accounting - (Brewster Kopp)
7. PDP-12 Program Change Proposal - (Dick Clayton/Ed Kramer)
   (Report distributed for last week's meeting)
8. Proposed Revision of Sales and Service Automobile Plan - (Ted Johnson)
   (See attached report)
9. Proposed Branch Office in Indianapolis - (Ted Johnson)
   (See attached report)
10. Proposed German Acquisition - (Ted Johnson)
    (See attached report)
11. Discussion of Inconsistencies in Delivery Quotations - (Ted Johnson)
12. Final U. K. Production Proposal - (Pete Kaufmann)
    (See attached report from Dave Knoll)
13. Treasury Bond Proposal - (Brewster Kopp)
    (See attached report)
14. Proposed Organization/Personnel Announcements Procedure - (Win Hindle)
    (See attached report from Graydon Thayer)
15. Proposed Capitalization Policy - (Brewster Kopp)
    (See attached report from Ed Savage)
16. Proposed DEC Security Personnel - (John Kulik)
    (See attached report)
17. Proposed Expansion of Parking Lot Facilities - (Al Hanson)
    (See attached report)
18. Schedule Review Procedure - (Steve Sobel)
    (See attached report)
19. Proposed Quantity Discounts on DEC Manuals - (Dave Cotton)
    (See attached report)

digital INTEROFFICE MEMORANDUM

DATE: September 8, 1969

SUBJECT: Operations Committee Minutes of the September 8th Meeting

TO: Operations Committee FROM: W. R. Hindle, Jr.

Present: Ken Olsen, Brewster Kopp, Ted Johnson, Nick Mazzarese, Ted Johnson, Stan Olsen, Win Hindle

1. Minutes of the September 2 meeting were approved with one correction.

2. Dick Best made an informal report on his activities. He is not really close to PDP-10 engineering but he has confidence in the key engineers in that group.

3. Module Product Line Proposals (Fred Gould and Al Devault) - Fred Gould feels our best potential lies in the Custom Board Manufacturing area. Fred is very unhappy about the lack of results in the A to D circuit area; he is now going to start doing his own development work in this area. Fred and Al Devault were criticized for not expressing their criticism of Clark Crocker's work for their product line much sooner. We discussed the other segments of Fred's module proposal and asked him to calculate the return on investment for the various segments. Then he should compare the potential new business with return on investment in the segments of our current module business (i.e., PDP-14, K-Series, etc.) and report back to the Operations Committee.

4. Proposed Quantity Discounts on DEC Manuals - We decided the Marketing Review Committee should make the final decision on Dave Cotton's proposal.

5. Schedule Review - Steve Sobel's proposal was postponed.

6. Parking Lot Expansion - The proposal by Al Hanson was not approved at this time because of the high cost of fill. Ken, Stan, and Win will continue to discuss this proposal.

7. DEC Security Force - John Kulik's proposal was accepted.

8. Capitalization Policy - We deferred discussion of Ed Savage's proposal until we get a report on who is not following our rotation policy.

9. Treasury Bond Proposal - We approved this proposal to allow employees to buy U. S. Treasury Bonds.

10. U.K. Production Proposal - Postponed to next week.

11. PDP-10 Analysis of FY1969 Quarter 4 - Bob Savell's report was accepted without many questions.

12. PDP-10 Long Range Strategy (Bob Savell) - In answer to Ken Olsen's question, Bob said he felt the small, new time sharing utility companies were in for a rough year because of competition. Because of this, the PDP-10 strategy is to sell harder in other markets to reduce dependency on the utility market. Bob is considering a new organization in the Marketing area in which a number of marketing people report directly to him. He was encouraged strongly to do this so as to reduce the dependence on Dave Cotton. Ted encouraged Bob to look hard at software needs on the PDP-10 in the future, particularly Batch Processing software. Nick commented that service groups feel the PDP-10 group is very difficult to work with.

13. Proposed Revision of Sales and Service Automobile Plan - Before making a decision on Ted's proposal, Brewster will make a two-week study of the economics of a leased car plan. Stan asked for a clarification of the "standard" for Field Service cars.

14. Indianapolis Office - We approved a branch office in Indianapolis. We asked Ted to prepare a plan of all new office openings proposed for the next year with information on city, space needed, cost per square foot, and potential billings.

15. Proposed German Acquisition - We agreed that Stan would talk with Dr. Leo Steipi about the company that is for sale in Munich.

16. Discussion of Inconsistencies in Delivery Quotations - Ted's Order Processing Group has developed a new report in August to show all of the late backlog. Ted, Ron Smart, and Don Berman will report again to the Operations Committee on this new report.

17. Brewster Kopp passed out a list of the problems he is working on so that we can comment on priorities. He also proposed an organization chart for his groups.

bwf

digital INTEROFFICE MEMORANDUM

DATE: August 21, 1969

SUBJECT: ACTIVITIES JULY 9 - AUGUST 20, 1969

TO: Operations Committee FROM: Dick Best

I reviewed the Cross Product Line Memory (PDP-10 and 11) circuits and hardware since it is at the point where the design should be frozen for a production run. A minor circuit modification was made to eliminate a prf problem in the inhibit driver, and several mechanical models of stacks have been started to determine the best mechanical arrangement for the ends of the long hinged boards. They are using an attractive quadruple pulse transformer package that mounts in the space of the DIP IC for $1.50.

There have been more design reviews of the PDP-11-the design is settling down - we are now reviewing the I/O interface.

The VR12 has had a final design review. The final change is addition of a commercial high voltage supply that has a low enough output impedance to show no prf sensitivity. It is not regulated, but neither is the supply for the deflection amplifier. It happens that the system tracks quite well - a 20% change in line voltage change the picture size 2%.

The RP09 & RP15 (Memorex disk pac on PDP-9 and 15) had a poorly attended review which will be repeated. The schedule slippage is matching the vendor's delivery problems. The critical variable frequency oscillator design still looks good. We're waiting to try it out on a disk.

Reviews of the TUIO before the design review and the Engineering Committees gives us confidence that the unit is going to be a successful replacement for Hewlett Packard 2020's.

A design review of the INDAC contact sense inputs and contact outputs uncovered serious deficiencies. The plan was to mix logic wires and wires going to and from the outside world (with up to 150 volts on them) on the same back panel. Noise would cause problems and a slip with a probe could wipe out lots of modules. The modules have been laid out again with a cable connector where the handle normally goes to isolate the inputs and outputs of the relays.

In order to sell Quickpoint programs a model number is required so that accounting can credit the sale to the right product line; for example QF01-A. Q=program, F=PDP-8, 01= the first program, A= first version. Quickpoint uses QF01 through QF05.

Western Electric is after us for patent royalties. Bob Cesari and I have been parrying their thrusts - a lot of their claims, fortunatly, came after the PDP-1. We hope that Linclon Lab records will knock out some more.

The Option Designation List includes the name of the production engineer assigned to each option. Bob Puffer is helping to get this information accurate. He now has enough production engineers to cover every job that needs one. Now I am learning how to use PIP and TECO on the PDP-10 so that I can edit and up-date the list and get an up-to-date printout in one day. Using EDP it takes 3 months. Roger Dow is going to use the PDP-10 to complete a similar list of modules.

Roger Dow's Engineering Services Committee has been doing a good job at coordinating the module development and ECO procedures. In my July 9th report I discribed a new module production release procedure. The procedure has changed again as follows:

	Boards	Label	
1.	MS123	A-P1	Original Layout
2.	MS123	K456A-P2	Module number assigned, second version
3.	MS123	K456A-P3	Third version. This works well enough to have an experimental lot made for evaluation in a system. The model Shop makes no more than 10. If a larger lot is needed the Model Shop uses Production as a job shop to construct the lot. The Model Shop (or designer) tests this lot.
4.		K456A	The design works and a production request form is started. A limited release lot is started (to give production a head start). By the time this lot is completed the full release will be completed. Hence only one limited release lot will be made. the release is completed quickly and without error since the layout is changed from MS123 K456A -P3 to K456A by opaquing out the "MS123" and "-P3". The same information is scraped off th etch on the model and production model is available.

Signetics visited to tell us their plans for going into MOS production. They feel that the vendor must take the iniative in proposing LSI's and get several customers using them. Otherwise the volumn will never be high enough to make the price attractive.

Our purchase specs have been a little hit or miss - some things are well specified, but they are the exception. Jim Quinn of Information Services is going to hire a spec writer and will keep all the specs in drafting, and distribute all new and revised specs. Purchasing, Engineering, and Quality Contol responsibility for the specs have not changed.

digital INTEROFFICE MEMORANDUM

DATE: August 26, 1969

SUBJECT: MODULE PRODUCT LINE

TO: Operations Committee

FROM: Fred Gould

The following is an analysis and some proposals to capture a major share of the module business.

:cam

THE PRINTED CIRCUIT BUSINESS - THE ANALYSIS

Major Sectors

1. Catalog Mfg. Digital and Industrial Control Circuits
2. Custom Board Houses
3. In-House Mfg. and consumption
4. Hardware, Supplies, and Process
5. Analog Catalog Mfg.

Sector 1 - Catalog Mfgs. of Digital and Industrial Control Circuits

Estimated Rank	Name	Estimated Sales
1	Digital Equipment Corporation	10,000,000
2	Computer Control Div. of Honeywell	9,000,000
3	Scientific Data Systems	7,000,000
4	Raytheon	5,000,000
5	EECo	4,000,000
6	Cambion	3,000,000
7	Data Technology	2,500,000
8	Wyle Laboratories	2,000,000
9	Control Logic	2,000,000
10	General Electric *	2,000,000
11	Seltzer **	2,000,000
12	Phillips **	2,000,000
13	Cutler Hammer*	1,500,000
14	Square "D" *	1,500,000
15	Monitor Systems	1,000,000
16	Design Products	1,000,000
17	CEC	1,000,000
18	Allen Bradly *	1,000,000
19	Ault *	1,000,000

Estimated Rank	Name	Estimated Sales
20	Baily Meter *	1,000,000
21	English Electric **	1,000,000
22	Nor Bits **	1,000,000
23	BRS ***	1,000,000
24	Data Scan	1,000,000
25	Grayson Stadler***	750,000
26	Leigh Valley ***	500,000
27	Massey - Dickenson ***	500,000

Key: * Industrial Control

** European Mfg.

*** Behavioral Research

A study performed several years ago by the Module Product Line indicated an additional 50 minor companies. Estimated total sales at 5 - 10 million for all.

In sector 1 the business is divided into roughly five catagories :

a. Computer Oriented
b. Industrial Control
c. Logic Elements
d. Behavioral Research
e. Data Communications

a. Computer Oriented

Major small computer manufacturers have a captive module business due to the wide range of applications for the computers and the interfacing of those computers. This has been the major segment of our business.

b. Industrial Control

Relay manufacturers have had for some time competing solid state controls if for no other reason than to provide a single source for their customers thereby freezing out possible competitors. We are looking at our K series line as our most promising effort. This line is not tied to the computer growth curve and the market requirements for more speed and higher reliability is in our favor.

c. Logic Elements

This class of supplier caters to a market not industrial based and not necessarily tied to a computer although some peripheral manufacturers are in this group.

d. Behavioral Research

With the entry of our LAB K application into this market we will quickly move into dominance of this relativly small but vocal sub-sector.

e. Data Communications

The development of a line of communications oriented modules and complete acoustical couplers will open a new market during the next year.

Sector 2 - Custom Board Manufacturing

1. Elgin Electronics
2. Texas Instruments
3. Data Scan
4. Defiance Electronics
5. Electro Optical Systems
6. Goodyear Aerospace
7. Electro pac (CC of Honeywell)
8. Motorola
9. General Electric
10. Digital Equipment Corp.

In this group we can only guess at what the level of business is. We have bid and no bid on work in excess of 5 M per year for the past couple of years. I estimate that 40 - 50 million is done in this sector annually. It is chastized by shops working on 100% overhead and working on a mark-up of 150 - 190%.

Testing is not a requirement and quality requirements vary from transistor radio variety to computer-aero space specs. All manner of shapes and components are used. Quick turnaround work is one class of operations while long run, long forecast is the rule rather than the exception. It is my opinion that our greatest growth opportunity exists in this area of business.

Sector 3 - In-House Mfg. & Consumption

This group exists in spite of sectors 1 and 2 for several reasons. Control being the most important , cost being second. This is undoubtly the largest dollar sector of the printed circuit business. In order to dislodge it we would have to be in the custom board business and develop the proper selling approach.

People in this business could best be described by looking at Pratt & Whitney, Machine Tool and by Cincinnati Milling & Grinding, large volume mfg used completly in-house.

Sector 4 - Hardware Supplies

1. Augut
2. Cambion
3. Vero
4. Amphenol
5. Kodak
6. Scanbe
7. Interdyne
8. Vector
9. EECo
10. Gardner-Denver

Products - connectors, connection systems, enclosures, cables, front panels, pc board components and processes.

This too has very strong growth potential, Augut has capatilized on the mother board approach to cash in on what was both sector 1 & 2 business. Without considering the Connectors supplied to prime manufacturing I would say this is a 20 - 30 million business.

Sector 5 - Analog Catalog Manufacturing

There are perhaps 10 major manufactures in this market and with our volume of 600K we would place high among them. The number one manufacturing in this group is Philbrick. Total sales in this sector is estimated at $10,000,000 with a large percentage being add on and spares to analog computing devices. It is my opinion that the expertise required to enter this market more strongly dose not exist at Digital and would be difficult to develope. Furthermore, growth in this sector is quite small. Raytheon has done very well by sellint D/A - A/D systems in this area.

PRINTED CIRCUIT BUSINESS - THE PLAN

Sector 1 - Catalog Manufactures

Based on an identifiable market in excess of $65,000,000 (est. sales of 27 companies) and an additional $5,000,000 scattered among some 50 minor competitors,we presently have a 14% share of Sector 1 business.

To improve our share of this market I suggest the following plan be implemented.

Sales Effort - Historically, Digital's module sales have been limited by inadequate sales effort. The last three years have seen sales time percentage (of budget) run 50%, 60%, 70% (FY 67, 68, 69). All other factors considered this has been the most serious obstical to increased penetration.

The Module Specialist Program temporarily arrested the problem but in spite of all the emphasis during FY69 we achieved only 70% of the budgeted time.

The first step in any effort to improve our market share would be to have more control of the module sales force.

Secondly, I would reprice selected types to make competitive analysis of lines decidedly in our favor.

Third, I would design interface modules for all major small computers. This would reduce the forced entry of small computer manufacturing into the module business.

Fourth, expand upon the assembled system business (similar to Marty Gordon's group) on a regional basis. This overcomes customer hesitance to move into a new technology. An alternative would be to acquire existing Panel Builders in the several regions to accomplish the same thing.

Fifth, the most obvious way to increase the business is to put the competition out of business and pick up their share. To this end a plan should be developed to accomplish the following objectives.

1. Identify the weakest competitors
2. Identify the key men in their organization
3. Obtain customer lists of the competitors
4. Establish the weak points in line or company
5. Hire away key men from them
6. Buy these companies that fit into our needs for Regional Systems House or Custom Board Program.

Summary - Sector 1

It is my opinion that the above program would give Digital a minimum of 25% of the catalog business. If successful with item fives proposal we could reach 50% penetration.

Sector 2 - Custom Board Manufacturing

I have estimated this sector to be a 40-50 M business annual. We presently are in it in a very minor way (Xerox and a single board for Xcello). We have no bid in the last 12 months major jobs (i.e. Graphic Sciences, Xerox, & Xcello) face value of over 5 million.

We require the capability to handle various board shapes, start up quickly (a 16 week production release cycle would kill us) a low overhead, and the willingness to work on a narrower margin. Testing is only required in a few cases. Both silk screen and PTH process are required.

In entering this business I feel we must make the manufacturing operation independent from the facilities making catalog modules. The release requirements and the inevitable priority decisions being make between in-house and customer jobs would limit us to severly in this market.

The most obvious route to take would be to acquire an existing P.C. Board Mfg. (catalog type) and convert his capacity to this function.

By being willing to take on this kind of work I see a first year volume of 3 - 5 M. The sales effort is small compared to Sector 1. The profits are also not as great. My examination of our competitors showed that they are operating with 100% overhead and mark-up 1.5 - 2.0. (I will remind you we landed Xerox with a 1.75 mark-up and that year we made a 35% profit which is somewhat contrary to the smaller profit statement above.)

Summary - Sector 2

In three years we could move from our present 500K yr. average to 10 M annual this would be a 20% share of the present market and place us in a dead heat with the present leader, Elgin Electronics.

Sector 3

Simply stated we must be more effective in Sector 1 and must be in the business of Sectors 2 & 4 to shake out any significant in-house PC board manufactures.

If we could get just 10% of what's being done today it would be on the order of 5 M. Let's assume that is our target for this sector. This would be measured in terms of how much existing in-house capacity we cause to be shut down due to our sale.

Sector 4 - Hardware, Supplies & Processes

We are estimating this sector to be 20 - 35 M. We are a minor mfg. in it now. With the introduction of the H950 - H960 Cabinet Line and a single catalog for module hardware we will make the first move towards capturing a larger share of this sector.

Additional step to be taken is in wire wrap centers. We should move solidly in to the wire wrap game. Raytheon's highest profit operation is the wire wrap operation

By setting up wiring centers on a regional basis, with a new pricing policy and equipped to handle various connector grids we will reinforce our catalog sales, custom board sales

and attract wiring business on competitors frames too.

EECo is entering this business quite strongly, we are competitive with them on system runs of 10 or better but lose out on the smaller runs.

We are laying down 100,000 wires a month just fooling around with this business. I have no doubt that this could be raised to 1 M in a years time.

In this line we could market production equipment such as automatic insertion, wiring and test equipment (both component and functional).

Our potential in this area breaks down as follows:

1.	Cabinets	2 M
2.	Hardware	1 M
3.	Wiring Service	4 M
4.	Production Equip.	1 M
	Total	8 M

This represents 25% share of this sector.

Sector 5 - Catalog Mfg. Analog Modules

We presently do 600K annual in this sector. Raytheon is very strong with their function cards (Mux, D/A A/D) and Philbrick dominates the real analog segment.

It is my opinion that we put minimum effort in attempting to unseat a major share of the Philbrick kind of business. However, concentrated effort on the marriage of Digital/Analog devices, as Raytheon has shown, is justified. By countering their product line one for one we should be able to capture 2 - 3 million in this sector. We will require a different set of engineers than we have available now as the analog products we have developed to date have had the worst combination of fault (i.e., costly and don't work).

Overall Summary

Given the mandate and assuming we are expert and also correct in our approach we could expect to move over a 3 year period from our present sales level of 12M to the position shown on the following page.

SECTOR	NOW		CONSERVATIVE	OPTIMISTIC
1	10.0 M		17.5 M	35.0 M
2	.5		10.0	15.0
3	-		5.0	7.0
4	1.0		8.0	10.0
5	.6		2.0	3.0
	Now 12.1	3 Yrs.	42.5	70.0

INTEROFFICE MEMORANDUM

DATE: August 5, 1969

SUBJECT: Quantity Discounts on DEC Manuals

TO: Operations Committee
Market Review Committee

FROM: Dave Cotton

cc: George Arnold
John Bellantoni
Larry Portner
Ron Smart
Howie Painter
Dave Micciche
Ed Kramer
Downey Overton
Bob McInnis

The PDP-10 Product Line has received numerous requests from both time-sharing utilities and educational institutions to grant discounts on purchases of quantities of manuals.

Ed Nemeth of PDP-10 Marketing has consulted with George Arnold and John Bellantoni and has made a recommendation for a standard discount policy on manuals. This has been reviewed by the marketing managers of all product lines, and they concur with the following recommendations:

1. That a quantity discount schedule be established for quantities of any manual listed on a product line's User Bookshelf publication and any other handbooks published by DEC. No quantity discount would apply to instruction manuals or maintenance manuals.

2. That the discounts be applied on a single order basis, without discount agreements or accumulation of quantities from several orders.

3. That the discount schedule be as follows:

QUANTITY	DISCOUNT
1-4	no discount
5-99	33%
100-249	36%
250-499	38%
500-	40%

and that it should apply to the prices shown on the document and/or in the Users Bookshelf.

We feel that a uniform company policy on quantity discounts is desirable and urge your approval of either the schedule proposed above or any reasonable alternative.

DBC:ll

David Cotton

pdp10 user's bookshelf

A Bibliography of PDP-10 Programming Documents

JULY, 1969

Software documents in this bibliography can be obtained from Digital Sales Offices or by sending a written request (with check or money order) to *Program Library, Digital Equipment Corporation, Maynard, Massachusetts 01754*. The following key, which indicates the current status of software manuals and their relationship to preceding editions, is designed to help the reader determine whether the present content of a given manual meets his needs.

(1) *New* signifies that the manual is being published for the first time (designated by a box).

(2) *Major Revision* signifies that new capabilities and/or changed procedures have been incorporated in the manual (designated by an asterisk).

(3) *Minor Revision* signifies that the manual remains essentially the same as its predecessor.

(4) Manuals that are unchanged since the last bibliography are shown with only the date of publication after the title.

PDP-10 System Reference Manual **Minor Revision July, 1969**

An indexed programmer's handbook that describes the PDP-10 processor and the basic instruction repertoire. Following an introduction to the PDP-10's central processor structure, general word format, memory characteristics, and assembler source-programming conventions, this manual presents the specific instruction format, mnemonic and octal op codes, functions, timing formulas, and examples of each of the basic instructions. Several helpful appendices, including mnemonic op code tables, algorithms and timing charts, complete the manual.

NOTE: Readers who have previous supplements (through December 1968) do not need this edition.

Order No. DEC-10-HGAA-D $5.00

Time-Sharing Monitors:
Multiprogramming Monitor (10/40)
Swapping Monitor (10/50) **October, 1968**

A complete guide to the use of the PDP-10's two powerful, real-time, multiprogramming, time-sharing Monitors. Both Monitors schedule multiple-user time sharing of the system, allocate facilities to programs, accept input from and direct output to all system I/O devices, and relocate and protect user programs in storage. This manual details user interaction with the Monitors, from both a programming and operating viewpoint, and contains several quick-reference tables of commonly used Monitor commands and parameters, as well as examples of user coding.

Order No. DEC-10-MTEO-D $3.00

AID (Algebraic Interpretive Dialogue) **October, 1968**

A 'hands-on' guide to the use of AID at the Teletype console. AID, a PDP-10 version of JOSS [1], is an on-line system which provides each user with a personal computing service utilizing a conversational algebraic language. This manual describes the use of the Teletype, the syntax and general rules governing the AID language, and each of the AID commands, with appropriate examples.

Order No. DEC-10-AJBO-D $3.00

[1]JOSS is a trademark and service mark of the RAND Corporation for its computer program and services using that program.

Single-User Monitor Systems **November, 1968**

A complete guide to the use of the Single-User Monitor, which performs fast job-to-job sequencing, provides I/O service for all standard devices, and is upward compatible with the Time-Sharing systems. This manual contains the same type of helpful information as the Time-Sharing manual described above.

Order No. DEC-10-MKDO-D $2.00

Batch Processor (Batch) and Job Stacker (Stack)
New, May, 1969

An indexed manual containing all information required to prepare and run user jobs under control of the Batch Processor in either a single-user or time-sharing environment. Batch supervises the sequential execution of a series of jobs with a minimum of operator attention, yet allows the operator to interrupt, skip, repeat, or prematurely terminate one or more of the jobs in the series at any time. Job Stacker is used in conjunction with Batch to (1) transfer job files to the Batch input device and stack them there for subsequent input to Batch, (2) transfer Batch output job files from the Batch output device to some other device, (3) list job file directories, (4) delete job files, and (5) list directories with selective file deletion or transfer.

Order No. DEC-10-MBAC-D $1.00

***System User's Guide** **Major Revision, Available August, 1969**

A fact-filled operations guide designed for handy reference at the user's Teletype console. Contains the basics of Teletype usage and complete operating procedures for all Commonly Used Service Programs (CUSP'S). Includes complete write-ups on DECtape Editor, Advanced BASIC, LINED, CCL (Concise Command Language), and Linking Loader. A typical chapter includes a brief description of the program, its operating environment, initialization procedures, command string formats, special switches, diagnostic messages, and in-depth examples. The manual is tab-indexed for the user's convenience.

Order No. DEC-10-NGCC-D $10.00

COBOL LANGUAGE **New, July, 1969**

A reference manual designed to aid the user in writing COBOL programs for the PDP-10. Each COBOL language element is accorded a detailed treatment that explains and demonstrates its use in a variety of programming contexts. The four major divisions of a COBOL program and their conventional formats are clearly described and effectively illustrated. Other subjects given extended coverage in this manual are the COBOL library, COBOL reserved words, and the CALL procedure. Each chapter contains numerous examples of the efficient use of the components of a COBOL program. Indexed.

Order No. DEC-10-KC1A-D $6.00

digital INTEROFFICE MEMORANDUM

DATE: August 26, 1969

SUBJECT: Expansion of Parking Lot Facilities

TO: Members of the Operations Committee

FROM: Al Hanson

Attached you will find a budget estimate and site drawing indicating the cost and location of the proposed new parking areas.

The Natural Resources Commission has approved both locations and the petitions are valid for a one year period.

The new construction will comply to the standards we have developed in the existing areas; that is, a two coat oil pavement, mercury lighting, adequate guard rail, and all necessary landscaping.

August 25, 1969

BUDGET ESTIMATE

PARKING LOT EXPANSION

I. MAIN STREET LOT (DENNISON'S)

Number of spaces:

Existing.....142
Additional.....60
Total.....202

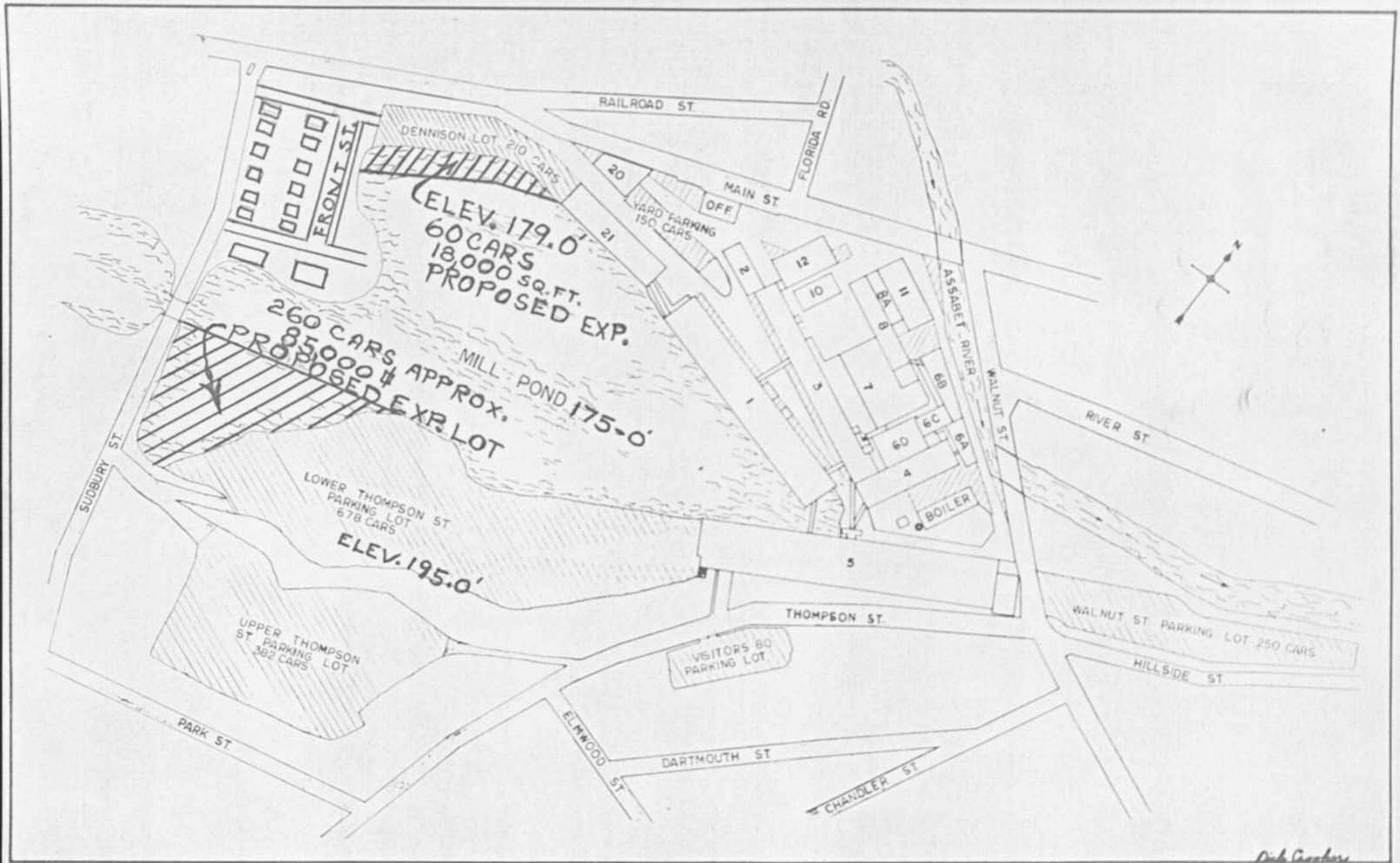
	Unit Cost	Total
Site Preparation		
15,000 yds^3 delivered & spread	$ 1.30	$19,500
Fine grading 2,000 yds^2	.20	400
Guard Rail 480 linear feet	4.50	2,160
One coat of oil with sand covering, including sweeping 2,000 yds^2	.46	920
Lighting		
Two 4 light mercury vapor standards 1,000 watt per light Two 1,000 watt mercury vapor lights mounted on Building 21		6,141
Landscaping		
Twenty 6 ft high willow trees planted at 25 to 30 foot intervals	45.00	900
TOTAL	TOTAL	$30,021

II. LOWER THOMPSON STREET LOT

Number of spaces

Existing.....678
Additional.....260
Total.....938

Site Preparation		
50,000 yds^3 delivered and spread	1.30	$65,000
Fine grading 9,500 yds^2	.20	1,900
Guard rail removed & replaced 480 linear ft.	3.00	1,440
One coat of oil with sand covering, including sweeping 9,500 yds^2	.46	4,370
Lighting		
One 4 light mercury vapor standard 1,000 watt light		2,530
Landscaping		
Twenty 6 ft high willow trees planted at 25 to 30 foot intervals	45.00	900
TOTAL		$76,140


RAILROAD ST.
DENNISON LOT 210 CARS
FRONT ST.
ELEV. 179.0'
60 CARS
18,000 SQ. FT.
PROPOSED EXP.
260 CARS APPROX.
85000 #
PROPOSED EXP. LOT
MILL POND 175-0'
20
OFF
MAIN ST.
FLORIDA RD.
YARD PARKING
150 CARS
21
2
12
10
11
8A
8
7
6B
6C
6A
6D
4
3
1
BOILER
5
ASSABET RIVER
WALNUT ST.
RIVER ST.
SUDBURY ST.
LOWER THOMPSON ST
PARKING LOT
678 CARS
ELEV. 195.0'
UPPER THOMPSON
ST. PARKING LOT
382 CARS
THOMPSON ST.
VISITORS 80
PARKING LOT
WALNUT ST PARKING LOT 250 CARS
HILLSIDE ST.
PARK ST.
ELMWOOD ST.
DARTMOUTH ST.
CHANDLER ST.
N

COMPANY CONFIDENTIAL

digital INTEROFFICE MEMORANDUM

DATE: August 27, 1969

SUBJECT: PROPOSED DEC SECURITY PERSONNEL

TO: Operations Committee FROM: John Kulik, Security Officer

Per your request, the following additional information is submitted for your consideration as concerns the DEC Security Proposal dated July 8, 1969.

Regarding the present Pinkerton contract service, certain deficiencies have been noted and are worthy of comment. The most prominent of these noted are in the areas of guard turnover, caliber of guard and general appearance--all of which are vital factors in establishing an effective guard force and maintaining the proper security image.

Under the present contract system, DEC is dependent on the discretion of Pinkerton as to the caliber of guards employed for service at this facility. The guard, when hired, allegedly receives his initial indoctrination as to the required guard standards and rules of conduct from Pinkerton, his employer. The standards employed by Pinkerton in this regard are questionable as result of problems experienced. To illustrate two recent incidents, a newly assigned guard was observed in the afternoon sitting down in a chair at his post and assignment reading a paperback novel while employees entered and exited the facility--this guard was ignoring his responsibility completely. On another occasion, a newly assigned guard arrived wearing extremely long hair and a "handlebar mustache." This was a guard just recently hired and who, it was found, received no instructions as to personal appearance requirements during his interview at time of hire. Both of these cases did nothing to enhance the image of the security force but rather lowered this image. It should be noted here that in both instances service of these guards was terminated at this facility and brought to the attention of Pinkerton management.

Some other problems dealt with and experienced occasionally are in the areas of report writing, procedures, communications and appearance of uniforms. These problems can be attributed, in part, to the fact that the contract guard answers and is obligated to his employer, Pinkerton, rather than directly and only to company supervision. As aforementioned in initial report, the below standard wage paid to contract guard does not attract the more qualified individual thus resulting in moonlighting, lower efficiency and interest on the job and subsequently accounts for a frequent turnover in personnel.

JK/clw

digital INTEROFFICE MEMORANDUM

DATE: August 8, 1969

SUBJECT: Treasury Bond Proposal

TO: Operations Committee

FROM: W. B. Kopp

The Personnel Committee has approved a plan by which Digital Equipment Corporation will offer treasury bonds to employees through a payroll deduction plan.

The plan was approved as long as it was on a low key basis which was agreed upon.

The plan is to have one article about the offering in either on-line or the weekly newsletter and one flyer in the payroll envelope giving the various bond denominations that might be purchased as well as an election card. The cards may be given to the supervisor who will send them to Personnel and finally to payroll.

The programming for this proposal is two man weeks. There is a minimal additional workload required by the Payroll Department, about one hour per week. The Personnel Department estimates about two hours per week.

If the Operations Committee approves this proposal we would like to implement it during the fall.

egs

digital INTEROFFICE MEMORANDUM

DATE: August 25, 1969

SUBJECT: PDP-10 Analysis of FY 69 Q4

TO: Operations Committee FROM: Bob Savell

	Actual		P & L		Orig. Budget		Dec. Budget	
Bookings	6,577		6,577		10,000		11,000	
Income (6)			6,761				10,000	
NOR (9)	8,387	100	6,978	100	8,067	100	10,218	100
COR (20)	3,955	47	3,429	49	3,726	46.5	4,726	46
TGM (30)	4,432	53	3,549	51	4,341	54	5,492	53
Eng. (43)	792		792	11	751		789	8
Sell. (59)	708		708	10	680		771	8
Admin. & Other	421		421		443		479	
Profit (70)	2,511	29.9	1,628	23	2,467	30.6	3,453	34

Since the P & L for Q4 does not reflect the actual product line performance, it will not be used for comparison. The P & L shows $1,400,000 less billings than we actually produced.

The "Actual" to "Original Budget" is as follows:

Bookings - Lower, largely due to order cancellations.
NOR - Better
COR - Higher than budgeted % due to lowered prices on memories to meet outside supplier competition
TGM - Correspondingly lower %
ENG - Higher, consistent with December budget
SELL - Higher than original, but considerably lower than December budget, primarily due to lack of sales effort.
ADMIN -
PROFIT - Lower by .7% than original budget, but higher by $50K.

In comparison to the December Budget, we fared poorly. We expected larger shipments that failed to materialize due to lack of sales effort throughout the entire year, but also because of our slow rate of production of Burroughs disks due to many causes. Most of these were Burroughs' engineering, production, and quality control problems.

A fact that should be noted is that in spite of many budget predictions made for Q4 in writing on practically a monthly basis to Accounting and the Operations Committee, the "Current Budget" listed on the P & L statement during Q4 was the December Budget. I didn't notice this during Q4, since monthly figures many times don't match the budget, so I usually use the YTD numbers and look at current actuals to see how expenses are going. The point is that if Accounting was still expecting income and expenditures based on December's budget, they would have been misled. Perhaps a more formal means for requesting up-to-date budget information should be instituted. Last year I had the opposite problem whereby information requested over the phone very informally was inserted into "Current Budget" without informing me that it was to be used this way.

bwf

CONFIDENTIAL

digital INTEROFFICE MEMORANDUM

DATE: September 5, 1969

SUBJECT: Report on PDP-10 Long-Range Strategy

TO: Operations Committee FROM: Bob Savell

Enclosed are written reports on three problems you asked me to consider:

1. Assuming SDS (or some other competitor) has the same hardware and software capabilities as DEC in one year, how will the PDP-10 be successful and grow under those conditions.

2. What is your plan for bringing people into the product line who can work with you in running a $50 - 100 Million business in a few years. Another way of asking the same question is who is (or will be) capable of taking your place?

3. Is the nature of this product such that we have to offer things that can't be built? Do we have to offer hardware and programming that is beyond the state of the art to be competitive, but then can't deliver them. For example - "people" have been saying Burroughs can't deliver but we have to keep selling.

bwf

I.

Assuming SDS (or some other competitor) has the same hardware and software capabilities as DEC in one year, how will the PDP-10 be successful and grow under those conditions?

First, I assume "same" does not mean identical, but only similar.

Second, since I have not previously prepared a plan to meet this eventuality, this report should be viewed only as a base from which to work and not as a final plan.

I'm glad the question has been asked as it looks to me as if the computer business is developing more and more product similarity as time goes by. The 10's principal attributes today are:

1. An excellent order code and other hardware characteristics such as programmable PI channels.

2. Excellent price/performance with respect to the competition.

3. Reasonably low absolute system price.

4. Excellent interactive time-sharing software.

5. A well rounded line of peripheral equipment.

Although a competitor may, one year from now, have substantially identical hardware and software - let's even say, completely identical as far as a user can tell, we will have had a fair portion of that product in existence over a year longer than he. That should produce the following advantages:

1. our software will be considerably more reliable.

2. we will have second sources for many of our peripherals, thereby enabling us to improve our "on-time" delivery performance.

3. We will have made improvements in the design of some of our peripherals and memory to improve the MTBF.

4. Our salesmen and our software support people will know our product better than the competition knows theirs.

5. We will have about 150 systems in the field that will have been running our T. S. software for an average of about 1 1/2 years. Prospective customers can get realistic comments from these users as to the reliability of our system.

Our competition has not yet been selling interactive time-sharing as, except for the 940 and GE's BASIC systems, they do not have it. When they do start to sell it, many new opportunities will open to us because those competitors will no longer be trying to tear down time sharing

per se in favor of batch processing or dedicated real-time systems. They'll be advocating the same basic philosophy of computer usage that we are. At that time, our extra years of experience in the Time Sharing area should give us an edge.

The market for systems in the 10 class appears to be growing at a rapid enough rate to allow growth for all. I'm more concerned about a competitor coming out with a new, unique system than one offering substantially similar systems. After all, the PDP-8, DDP-416, etc. are substantially similar and we sell a pile of 8's.

Price/performance coupled with benchmark runs i.e., processing speed, continues to be the fundamental basis on which most customers decide upon a system. We must continue to keep our manufactured costs as low as possible. As long as DEC's overall company reputation stays good, the price/performance will continue to bring us customers.

We are moving into new market areas for the 10 that will be greatly helped by DEC's small computer reputation, namely in-house time sharing and industrial data acquisition. Prime prospects in both these areas are present small computer customers. Competitors could play the same game, but not nearly as well as we can with our 70% or so of the small computer market. These customers talk our language.

If the above advantages are not enough to maintain our 10 sales at a satisfactory level, then we must make sure the rest of the product offers something the competitor does not offer. Some suggested areas to develop are listed below.

Field Sales -
1. Friendlier, more capable salesmen.
2. Better terms, but for a price.
3. Leases.
4. More attentive salesmen.
5. Faster deliveries.
6. On-time deliveries.
7. More help to install and prepare to install system.
8. Accurate info. to customers.

Soft. Support -
1. More capable.
2. Willing, for money, to do more specials for customer.
3. More visits.
4. More reliable software.
5. Faster bug fix.

Field Service -
1. Faster response.
2. More hours of coverage, cheaper.
3. Better diagnostics for less downtime.
4. More reliable equipment.

General Product

1. Like small computers, more applications packages (i.e.) total turnkey systems like typesetting? Typesetting is a small straightforward job. What are big, but straightforward jobs?
2. Lower price.
3. Higher quality, both designed in and production.
4. "Free trial" (i.e.) Acceptance tests tougher or "Try before you buy."
5. More advertising - sell it harder than they do.
6. Good, user-oriented, documentation.
7. Training on soft- hard.

Marketing -

1. Understanding of how the product satisfies market needs so that we can sell better than the competition can to a particular market.

If the identical product situation exists for very long, however, it gets more and more difficult to maintain one's share of the market, because all manufacturers tend to make all the non-product services more and more identical as well. Therefore, it is in our best interest not to get into this situation if we can avoid it. We must continue to try to develop new and unique hardware and software that can be sold on a "what the traffic will bear" basis rather than a "what does the competition charge" basis.

II.

What is your plan for bringing people into the product line who can work with you in running a $50 - 100 Million business in a few years. Another way of asking the same question is who is (or will be) capable of taking your place?

I haven't had a specific plan, such as "By July 1969 I will have 4 people in the group who appear to be able to replace me." It does seem as if I probably should.

We do have in the Product Line at present a number of people who appear to be Product Line Manager candidates at some time in the future.

Fred Wilhelm, Engineering Manager
Dave Cotton, Marketing Manager
Ward MacKenzie, Product Development Supv.
Dick Dobbie, Product Administration Supv.

and joining the group soon

Rod Belden, Time-Sharing Utility Marketing

These people vary greatly in their state of readiness for the job, both in terms of ability and experience. The quantity of people is probably sufficient, but the problem that exists is how to get the three candidates that are now in non-managerial positions into positions that will give them responsibility for managing more people and responsibility for budgets, either cost-center or P & L. At some point they must have substantial line, rather than staff experience and experience in controlling the activities of people who are not in the Product Line, but whose performance is necessary in order to carry out assigned responsibilities.

In summary then,

(1) Budgetary responsibility

(2) Supervisory responsibility over a group of at least 10 - 15 people and over activities of people not under his direct control.

(3) Responsibility for an activity whose results can be measured fairly objectively i.e. Bookings, engineer a product, etc., rather than answer customer's questions, negotiate contracts, etc.

Certainly to the extent that a Product Line Manager is expected to be a salesman and negotiator, the best prior experience is as a Marketing Manager or as a marketer responsible for a market segment such as Time Sharing Utilities. I'd be better at that end of the job today if I'd had such experience. Responsibility for a market segment does not usually, however, give any experience in controlling the activities of many people directly, or in getting many things developed and produced on time; both of which are important to a product line manager.

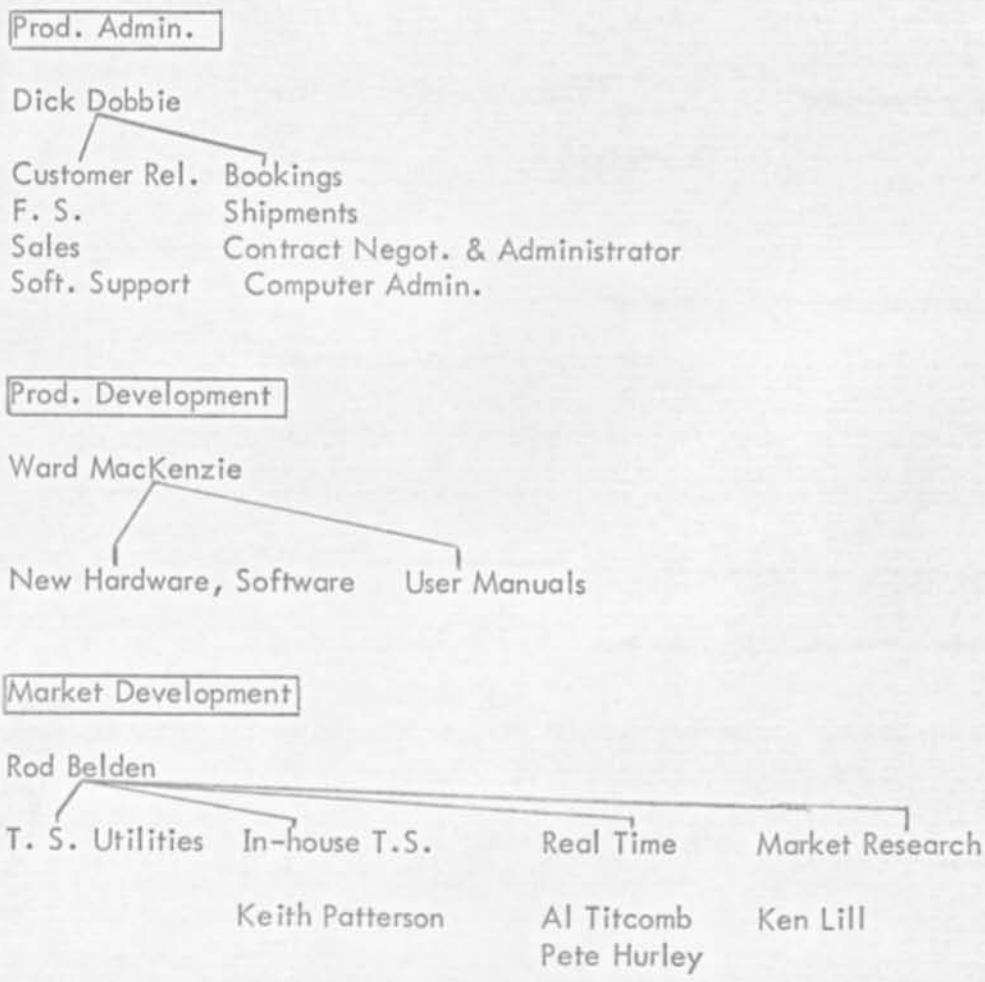
Probably the single most important requirement of the Product Line Manager's job is the ability to organize the activities of a fairly large number of people to successfully complete a fairly large number of inter-related tasks according to a prearranged plan.

It would seem, then, that to better develop people, some regrouping of people in PDP-10 Marketing would help. The opportunity for this sort of grouping already exists within Engineering, and it might be reasonable to have two Engineering cost centers rather than one reporting to the Engineering Manager just for the purpose of manager development. I don't plan to regroup Engineering at present however.

The other problem in Marketing is that even if it's regrouped a bit, if it's still all under the control of a Marketing Manager, to promote a person to Product Line Manager means a double promotion. This is not often done, nor do I think it's a good idea.

Since Marketing consists today of about 25 people, it could be broken into two or three groups of a size to give adequate managerial experience.

One way to reorganize Marketing would be as follows:



Market Development

Dave Cotton

Educational Inst.	Advertising & Promotion	Ind. Data Acq.	Prod. Support
Bino Nanni			Steve Mikulski
			Training
			Benchmarks
			Handhold

Each of the Market Development people who have responsibility for an individual market would have P & L responsibility, or at least bookings responsibility, for their market. They would also be responsible for an advertising budget in a manner similar to the old Cross Product Line Marketers.

III.

The third subject I was asked to prepare a statement on is peripherals. Ken asked "Is the nature of this product such that we have to offer things that can't be built?" He commented that he felt we had to offer hardware and programming that was beyond the state of the art to be competitive, but couldn't deliver them and stated as an example that for a year and a half "people" have been saying Burroughs can't deliver but we have to keep selling.

The answer to Ken's question is no, we don't have to offer things that can't be built. We do, however, have to offer equipment with the general characteristics that we're offering in order to compete in the markets we've chosen. None of the hardware or software on the 10 can be classed as "beyond the state of the art." Burroughs disk equivalents, such as Bryant drums, have been delivered successfully by many manufacturers for a number of years. Burroughs itself has delivered many disks with higher transfer rate and higher capacity. The problems we've had, both hardware and software, have not been due to pushing the state of the art; they have been ordinary engineering, management, and production problems.

It's true that for about 18 months, we have had delivery problems with Burroughs. We were due to deliver our first disk to a customer in March 68, and didn't deliver until May 68. We had both delivery and engineering problems with Burroughs at that time, but due to our prior experience with Burroughs as a vendor and due to the fact that they were a computer manufacturer, we had confidence they would solve their problems. We worked hard with them to help them do so. At that time we did not have a second source for any of our peripherals, nor in many cases for memory stacks. The other Product Lines at that time followed the same policy. We did keep selling because we thought we'd solve the problem.

In the late summer of 1968, it became apparent that Burroughs was not going to solve their problems quickly. I instructed Joe Sutton to develop a Bryant Drum as an alternate and on September 18, the project commenced. Dick Beaven was assigned full time when he joined the group in October. We delivered the first drums to a customer in July 1969.

One of our major engineering projects this year is to develop second sources for all of our critical peripherals. Disk Packs are first on the list.

Attached is a chart of equipment projects showing scheduled and actual first deliveries. We've had a couple of real losers, but the interesting thing is that even though some of the first delivery delays are fairly short, it takes a long time to catch up.

Two approaches seem to be necessary to alleviate these problems.

(1) More slack at the end of our development schedules prior to first deliveries.
(2) A slower buildup rate scheduled for production than what production actually expects they can achieve in order to allow for increasing early production in event of delay.

It goes without saying that continued attention must be paid to improving the accuracy with which we schedule, manage, and execute the engineering part of these projects.

R. Savell
9/3/69

Option	Scheduled Delivery #1	Actual Delivery #1	Months Ahead + Behind -	Comments
KA10 Processor & processor options	12/67 ALC	12/67	On Time	
MA10 1 μsec memory	4/68 ALC	6/68	-2	Delivery delays continued until 12/68 due to stack eng. problems and vendor production problems
TD10 DECtape Cont.	12/67 C.U.	12/67	On Time	
TM10 MAGtape Cont.	3/68 Md.	5/68	-2	Caught up on deliveries in 2 mo.
LP10 Line Printer Cont.	3/68 Md.	3/68	On Time	
CR10 Card Reader Cont.	3/68 Md.	3/68	On Time	
XY10 Plotter Cont.	12/67 C.U.	12/67	On Time	
DC10 A, B. Teletype Scanner	2/68 C.U.	3/68	-1	Caught up on deliveries 2 or 3 mos.
DF/RC/RD Burroughs Disk	3/68 Md.	5/68	-2	Delivered 60 to date. Still behind. Started RM10 replacement Sept. 15, 1968
TU30 Tape Transport	5/69 CEA	6/69	-1	Still 1 month behind
CP10 Card Punch	11/68 AACHEN	8/69	-9	Still 2 months behind
RP10 Memory Disk RP01, RP02 Pack & Con.	6/69 ISC	--		None delivered yet
RA/RB Bryant Disk	1/69 CCC	6/69	-5	Software still not done. Will be ready Dec. 1, 1969
DA10 PDP-8/9 interface	3/68 OLS	3/68	On Time	
RM10B Bryant Drum	None promised	7/69	--	Not applicable
TU79		None	- ∞	
680I	11/68	5/69	-6	Will catch up on deliveries in Sept. 69

digital INTEROFFICE MEMORANDUM

DATE: July 25, 1969

SUBJECT: Revised Sales and Service Auto Plan

TO: Members of the Operations Committee

FROM: Ted Johnson

Attached is my proposal for revising the automobile reimbursement plan for sales and service personnel.

In addition, the proposal for the field organization also includes a recommendation to increase the mileage reimbursement rate from 9¢ to 10¢ per mile for non-qualifers. It is intended that this feature be extended to all plant personnel when using their private autos in connection with business.

Both plans have been favorably reported out of the Personnel Committee.

digital INTEROFFICE MEMORANDUM

DATE: July 15, 1969

SUBJECT: A New Domestic Car Policy

TO: Personnel Committee FROM: Ted Johnson

Summary

To change the present Automobile Policy from $30 per month and 9¢ per mile to $60 per month and 6¢ per mile, to increase the duration of qualification from two to three years, and for non qualificants to change rate from 9¢ to 10¢ per mile.

Background

Prior to December, 1964, our 8¢/mile automobile reimbursement policy had become a problem with our salesmen. On December 8, 1964, I submitted a proposal for a new mileage policy. It was accepted and the program was successful, i.e. over 5 years we have had minimum complaints.

Over the last year, we have again faced a problem on this policy. The main mitigating factor is the fact that we have, with growth, changed the nature of the use of cars for a substantial number of DEC field (Sales and Service) employees, e.g. those who work in dense customer areas and are required to use a car for business, but do not put on many miles. If you will refer to the curve, (attached) you will see that at low mileages, the employee does not recover most of his fixed costs.

Also, of course, auto costs have changed in five years and a review was in order, assuming no change in the pattern of usage.

Philosophy

It is the stated policy, at least as accepted in the 1964 proposal, that our car policy:

1. Adequately reimburses our salesmen for the use of an automobile used mainly for business purposes.

A New Domestic Car Policy

2. We favor having salesmen drive cars of good appearance, reliable mechanical condition, and sufficient comfort to encourage positive attitudes toward their usage.

In practice, we set a Chevy Impala as the type car representing the average goal, with cars being two model years old or younger to qualify for the $30 offset in addition to 9¢ (variable) mileage reimbursement.

Bill Farnham has managed this policy. We generated a list of qualifying cars. This list was somewhat relaxed in choice of cars from field servicemen, since appearance in size was not as important as for Sales. Also, we favored freight (such as TTY) carrying capability if desirable.

We do feel strongly that we should have a standard policy covering both Sales and Service.

Several managers feel we should be careful not to build in an incentive to use or not to use the car, i.e. directly gear reimbursement to real full costs.

Please note that in the attachment describing the policies for HP, TI, Motorola, SDS, RCA and Univac and IBM, that TI follows a policy along our lines (fixed plus variable) only considerable higher fixed ($80/mo.), IBM has a complex plan geared to low mileage areas, SDS and HP provide cars, as well as Motorola. RCA stays with a simple mileage plan.

There is also attached a comparison of costs per mile between 1964 and 1969 which indicates a 16% increase in the cost of operation, assuming an average of 10,000 miles per year.

The $60 per month and 6¢ per mile figure was selected in preference to the $30 and 9¢ plan because it allows a more equitable plan for the greatest number of drivers. The former plan favored high mileage drivers; the proposed plan still compensates these drivers adequately. I might point out that both plans pass through the same point at 1,000 miles per month.

Cost-wise, this represents an average increase of $200 per man year or .05% increase to the annual cost of an average salesman. This cost is based on increased participation in the auto plan. Presently, there is 49% participation level; under the new plan we expect 80% to 90%. The cost increase for private auto reimbursement will by 18% based on the increased participation level over the former plan. This is in alignment with the rise in costs and the changing auto pattern.

This is not a change in basic policy but an adjustment brought on by cost increase and changing usage patterns which if not changed will foster an inequitable automobile compensation plan.

W.H.F.
6/13/69

COMPARISON OF COST PER MAN

PRESENT PLAN VS PROPOSED PLANS

I. Present System

100% Participation = $1224
49% Participation = $1050 per man

1. 9600 miles & .9¢
2. $30 Allowance

Proposed System

A. $50 + 7 at 9600 = $1272 per man.
assume 100% participation ($48.00 difference at 100%)
($222.00 difference at 49%) + 21%

B. $60 + 6 at 9600
assume 100% participation = $1296 per man + 23%
($72.00 difference at 100%)
($246.00 difference at 49%)

C. $70 + 5 at 9600
assume 100% participation = $1320
($96 difference at 100%)
($270 difference at 49%) + 26%

II. FY70 Manpower Proposal - assume 500 eligible

100% participation present system Total Cost = $612K
49% participation present system Total Cost = $525K

Proposed System

A. $50 + 7¢ = $637K
B. $60 + 6¢ = $648K
C. $70 + 5¢ = $660K

a. Difference between present 49% participation versus proposed -

1. $112K or 21%
2. $123K or 23%
3. $135K or 26%

b. Difference between present 100% participation versus proposed -

1. $25K 4%
2. $36K 6%
3. $48K 8%

WHF
6/13/69

ANALYSIS 1964 VS 1969 COSTS

AUTO COSTS OF OPERATION - 10,000 Miles

	1964	1969
VARIABLE		
Gas & Oil	2.61¢	2.70¢
Maintenance	.68¢	.68¢
Tires	.41¢	.41¢
	3.70	3.79
FIXED		
Prop. Damage & Liab.	117.40	
		175.00 *Package
& Fire & Theft	30.40	
	147.40	
Collision	152.50	165.00
Taxes	57.80	62.00
Registration	23.60	30.00
Depreciation	621.00	775.00
	1002.30	1207.00
PER MILE COST @ 10,000		
Fixed	1002.30	1207.00
Variable	370.00	379.00
Total	$1372.00	$1586.00
Per Mile		
Actual Cost of Operation Per Mile	13.7¢	15.9¢ per mile or 16% increase

Automobile Information

The purpose of this addendum is to supply the results of the Survey information compiled on our present auto policy, National Survey indicating actual charges incurred in auto operation, and the policies of other companies, and our Regional Managers inputs in this area.

I. DEC Present Policy

A. The Policy

1. $30 per month allowance for five passenger cars of no more than two model years old.

2. 9 cents per mile operating reimbursement.

B. Participation

1. 60% Sales & Software
46% Field Service Engineers

Receive the present allowance.

2. There are approximately 400 eligible at the end of June, 1969.

C. Present Mileage

1. The average mileage is 800 miles per month or 9600 miles per year.

2. The distribution of the miles driven is:

27% under 400 miles per month
27% 400-800
25% 800-1200
21% 1200-and up

II. National Survey (ALA) shows the actual costs for auto operation on the average to be -

A. Fixed cost $100 per month
Operating costs .379 cents per mile

III. Auto Policies of Other Companies

A. Basically, there are three types of plans with some modifications.

1. Leased cars
2. Company owned
3. Individually owned and company compensated

B. Survey results

Motorola - Semi Conductor Division

1. Company owned cars - which are traded every three years or 56,000 miles.

2. Intent to promote uniform company image and to have safe, up-dated autos.

3. Presently have 140 people who average 2000 miles per month.

4. May use for personal use and pay back company at 5 cents per mile - company supplies gas & oil here.

Texas Instruments

1. Monthly allowance of $80 per month plus company pays for registration fees, state sales, excise and property taxes and liability insurance.

2. Liability insurance is on a company master plan.

3. All field people eligible.

4. Operating mileage is reimbursed at the rate of 4 cents per mile.

5. Car can be no more than three model years old.

6. Cash advance of $480 towards first car purchased in this plan and is deducted at rate of $40 per month from allowance check.

Hewlett Packer

1. H.P. owns & operates a fleet of cars. All Sales & Service get air conditioned Ford, Chevy or Plymouth wagon. They may use on personal basis up to 1000 miles or anywhere within their Region.

IBM

1. Graduated mileage compensation.

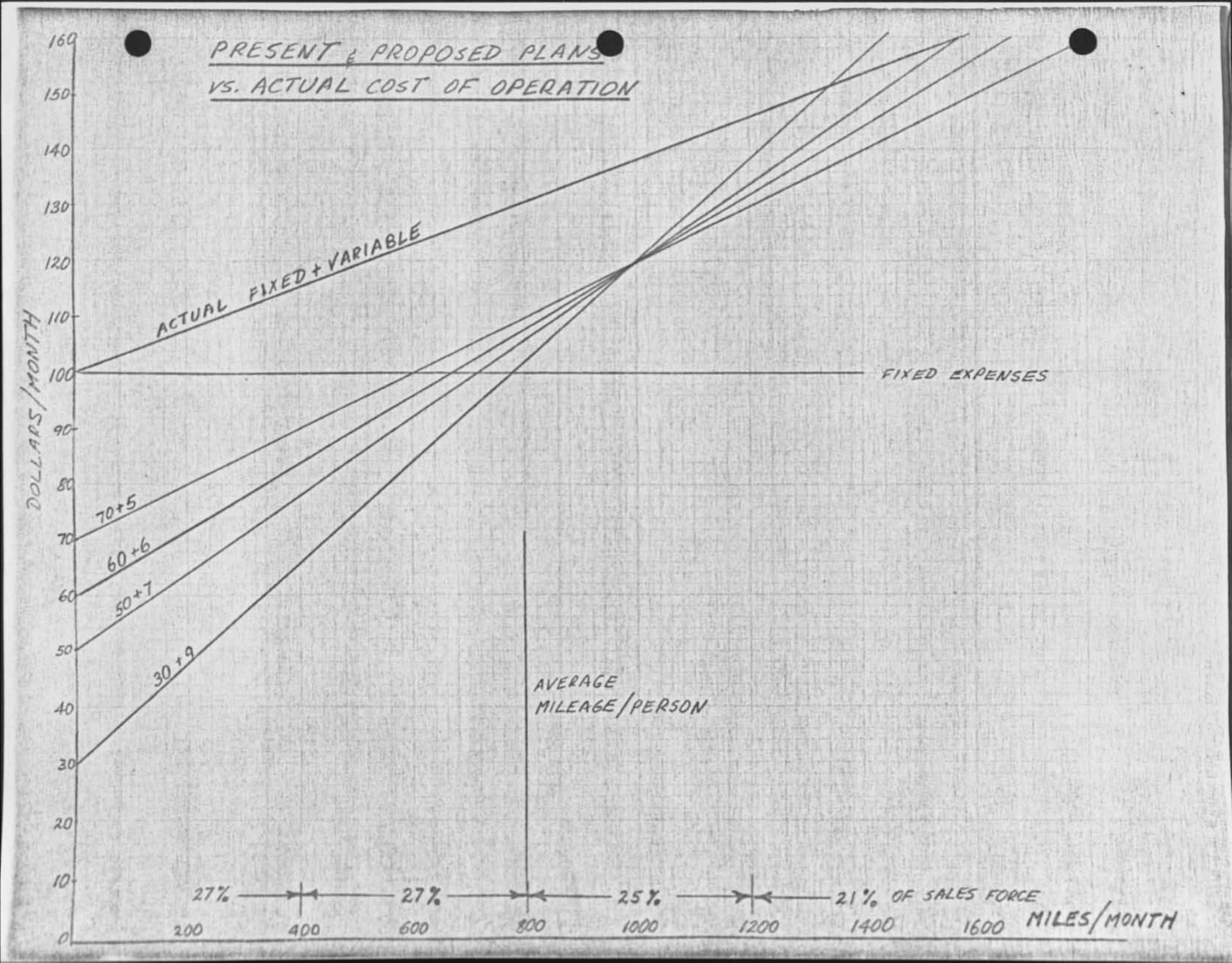
   .15 for first 50
   .13 for second 50
   or all miles above that.

SDS

1. Company either owns or leases cars for salesmen, however Service men get just .08 per mile.

RCA & Univac

1. Pay Servicemen .09 & .10 respectively


PRESENT & PROPOSED PLANS
VS. ACTUAL COST OF OPERATION
DOLLARS/MONTH
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
ACTUAL FIXED + VARIABLE
FIXED EXPENSES
70+5
60+6
50+7
30+9
AVERAGE
MILEAGE/PERSON
27%
27%
25%
21% OF SALES FORCE
200
400
600
800
1000
1200
1400
1600
MILES/MONTH

SURVEY RESULTS ON MILEAGE RATES

1. 1968 Survey showed that 46% of twenty-eight companies in the Boston area paid 10¢ or over.

2. 1969 MITRE Corporation survey showed 59% of 22 Boston companies in the electronic field paid 10¢ or over. (Report attached)

3. A 1968 ALA Survey showed 51% of 41 national companies paid 10¢ or over.

Conclusion

That 9¢ a mile is below the 50 percentile and that a change to 10¢ would be reasonable at this time.

COMPANIES WHO PARTICIPATED IN

SURVEY OF EMPLOYEE TRAVEL AND REIMBURSEMENT POLICIES

CONDUCTED BY THE MITRE CORPORATION

ADAGE, INC.

ADAMS RUSSEL, CO.

BIH ELECTRONICS, INC.

DIGITAL EQUIPMENT CORPORATION

HEWLETT-PACKARD CO. -- WALTHAM DIVISION

HIGH VOLTAGE ENGINEERING CORPORATION

HONEYWELL RADIATION CENTER

ITEK CORPORATION

MICROWAVE ASSOCIATES, INC.

THE MITRE CORPORATION

NASA/ELECTRONICS RESEARCH CENTER

RADIO CORPORATION OF AMERICA

RAYTHEON COMPANY

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

SPRAGUE ELECTRIC COMPANY

SYLVANIA ELECTRONIC SYSTEMS

TRANSITRON ELECTRONIC CORPORATION -- ELECTRONIC PRODUCTS DIVISION

TRANS-SONICS, INC.

TRW SYSTEMS GROUP

UNITRODE CORPORATION

USM CORPORATION

WOLF RESEARCH AND DEVELOPMENT CORPORATION

Locally only when most efficient.	6 Companies	27.0%
Must be most efficient and requires prior approval.	4 "	18.0%
Unless time prohibits use of other means of transportation.	2 "	9.0%
When no company car available and travel within 40 mile radius.	1 "	4.5%

B. What is the policy governing an employee using his personal car for his convenience on a business trip?

Use of personal car for employee's convenience permitted under conditions as stated.

Reimbursement not over common carrier and provided travel time by car not excessive.	10 Companies	45.0%
Must have prior approval.	2 "	9.0%
only on short trips	2 "	9.0%
When travel distance is between 40 and 170 miles, reimbursement for mileage. For distances over 170 miles, reimbursement is limited to equivalent air coach cost.	1 "	4.5%
No specific policy	5 "	22.5%
Not authorized	2 "	9.0%

C. Reimbursement rate per mile:

7¢	1 "	4.5%
8¢	3 "	13.5%

8.5¢	2 "	9.0%
9¢	3 "	13.5%
10¢	9 "	41.0%
1st 3000 miles - 11¢ 2nd 3000 miles - 10¢ 3rd 3000 miles - 9¢	1 "	4.5%
11¢	1 "	4.5%
Local 10¢ Distant 12¢	1 Company	4.5%
10¢ first 100 8¢ additional	1 "	4.5%

All companies reimburse for road tolls.

D. What type of insurance coverage (automotive and property damage) is required or provided when an employee uses his personal car for travel or company business?

No insurance requirements.	18 Companies	81.5%
25/50 liability plus $5000 property damage required.	1 "	4.5%
Statuatory coverage required	1 "	4.5%
Employee is held responsible but if 25/50 liability and $10,000 property damage is carried by the employee, the company assumes additional liability.	1 "	4.5%
Company has liability insurance beyond employee's own coverage.	1 "	4.5%

E. Does reimbursement cover mileage for use of the employee's personal car after normal work hours for travel from hotel or motel to a restaurant?

YES	17 Companies	77.0%
NO	4 "	18.0%
No Policy	1 "	4.5%

W.H.F.
6/13/69

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digital INTEROFFICE MEMORANDUM

DATE: September 4, 1969

SUBJECT: Establishing A New Branch Office In Indianapolis

TO: Members of the Operation Committee

FROM: Ted Johnson

Presently the Indianapolis area is being serviced from the Chicago office. It has been our past experience that when an area is capable of sustaining one million dollars of DEC business, that it is more efficient to set up a branch office.

Indiana, population of 5.3 million ranking 12th in the U.S. but more importantly 8th in industrial ranks which are primarily consumer oriented has a projected total market of 29 million for the next three years and it is anticipated that DEC can obtain 6.8 million of this with an Indianapolis office, but only 3.4 million without. The budget submitted by Gerry Moore shows bookings of 1.3 million for Q2, Q3 & Q4 of FY70 and Sales expenses of $40 thousand which is an Expense/Bookings ratio of 3.1%.

Indianapolis is the population center of Indiana with 85% of the major universities and 70% of the industrial business located within 100 miles.

This office is an integral part of the sales budget for the Central Region for FY70. Attached is a bookings budget by product line and an expense budget. We have a very capable man in Wes Brown for performing this job. Wes has submitted a very detailed marketing proposal for justification of this office which is available.

We are planning an October opening with an office of 1500-1800 sq/ft on short term lease (three years with renewal options.)

Some of our key accounts in Indiana are:

Western Electric
RCA
Purdue University
Delco Remy
Indiana University, Bloomington
Indiana University, Indianapolis
Notre Dame
Guide Lamp, Div. of GM
Miles Laboratories, Inc.

DIGITAL EQUIPMENT CORPORATION
BUDGETED COST CENTER EXPENSES - 1970
SALES

Cost Center 183 Location Shrewsbury Date _____

Acct. No.	Account Name	Code	Quarters - 1970 1st	2nd	3rd	4th	Total
7X01	*Base Labor						
7X01	Sales Work	S		2927	3025	6600	
7X01	Post Software Support	B		—	—	—	
7X01	Customer Training	H		—	—	—	
7X01	Learning (Development)	L		—	3575	—	
	Sub Total (A)			2927	6600	6600	
	*Overhead Labor						
7X02	Clerical	C		1675	1675	1787	
	Overhead "G Time"	G		325	325	325	
7X53	Agency Personnel						
	Sub Total (B)			2000	2000	2112	
	*Other Payroll Expenses						
7X03	Overtime Premium			—	50	50	
7X04	Personnel Allowances				400		
7X15	Fringe Benefits (10% of A & B)			488	855	871	
	Sub Total			488	1305	921	
	*Occupancy Expenses						
7X16	Rent			1250	1250	1250	
7X17	Amortization of Leasehold			—	—	—	
7X19	Heat Light Power			—	—	—	
7X25	Occupancy			—	—	—	
	Sub Total			1250	1250	1250	
	*Operating Supplies						
7X26	Stationery and Supplies			200	300	300	
7X24	Other			800	200	200	
	Sub Total			1000	500	500	
	*Travel						
7X40	Airlines			300	600	600	
7X41	Auto Rentals			100	200	200	
7X42	Lodging & Related Expenses			600	1200	1200	
	Sub Total			1000	2000	2000	
	*Other Expenses						
7X27	Equipment Leased			200	200	200	
7X31	Repairs & Maintenance			—	—	50	
7X33	Depreciation			25	25	25	
7X34	Postage			100	100	100	
7X35	Co. Sponsored Emp. Act.			20	-	-	
7X43	Relocation			—	500	-	
7X50	Legal & Professional			—	-	-	
7X52	Dues & Subscriptions			10	10	10	
7X58	Telephone & Telegraph			500	700	700	
7X64-5	Freight			50	50	50	
7X71-74	Misc. Business Taxes			—	—	—	
	Other (Submit Separate Schedule)			—	—	—	
	Sub Total			905	1585	1135	
	TOTAL FOR COST CENTER			19570	15290	14518	

Approved by: _____ Date: _____

CONFIDENTIAL

FY 70 BOOKINGS BUDGET — SALES AREA: Indianapolis — REGION Central Region — DATE August 1969

	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
			Q 1			Q 2			Q 3			Q 4	
MODULES	11	12	12	13	13	14	16	17	17	18	18	19	
			35			40			50			55	180
PDP-14							3	3	4	3	3	4	
			--			--			10			10	20
PDP-8/I													
PDP-8/L													
8/I, 8/L°	45	45	45	46	47	47	50	50	50	50	50	50	
			135			140			150			150	575
PDP-11				3	3	4	5	5	5	8	8	9	
			-			10			15			25	50
L-8, 12	10	10	10	11	12	12	10	10	10	11	12	12	
			30			35			30			35	130
PDP-9/15	10	10	10	18	18	19	16	17	17	21	22	22	
			30			55			50			65	200
PDP-10										133	133	134	
			-			-			-			400	400
T.P.L.	3	3	4	3	3	4	3	3	4	3	3	4	
			10			10			10			10	40
TOTAL	79	80	81	94	96	100	103	105	107	247	249	254	
			240			290			315			750	1595

DEC 10-1011

digital INTEROFFICE MEMORANDUM

DATE: September 4, 1969

SUBJECT: GERMAN ACQUISITION OPPORTUNITY

TO: Operations Committee FROM: Ted Johnson

For your information I have been approached by a friend of mine to look into this manufacturing organization acquisition opportunity as indicated in the attached letter. I am interested in pursuing this because of the opportunity to get some good people. As you see, the price is very low and largely amounts to picking up the payroll of the existing staff of 35 people, and equipment. The products they make are nuclear instruments and high voltage power supplies. They are located in the Western part of Munich which I believe is probably one of the more desirable areas to be considered for opening up a manufacturing facility in the future.

If I don't go to Europe next week, I am going to try to arrange for Stan to spend a few hours with Dr. Steipe and look at the facilities. I would like a very brief discussion of this opportunity since I believe we would be required to move quite quickly if it looks like something we might be interested in.

mr

Enclosure

DR. LEO STEIPE

8 MÜNCHEN 90
HOHENWALDECKSTRASSE 1
SCHALTBAU GMBH.
TEL.: 69 59 21

Mr. Ted G. Johnson
Digital Equipment Corporation

146 Main Street
Maynard, Mass. 01754
U S A

August 11, 1969
Dr.S:eb

Dear Ted:

As promised on the telephone, here is some material on the Company Nucletron, i.e. a list of their representation and some data sheets on the type of equipment they are manufacturing.

Actually, Nucletron consists of two companies, a manufacturing and a sales company. They employ in their manufacturing area right now about 35 people. They have an Engineering Department, an Industrial Engineering Group, Workshop, Assembly Workers, QC Personnel and so on.

With this staff Nucletron has a capacity of turning out around ₰ 500,000 worth of equipment, however are producing only ₰ 300,000.

The Company is located in the Western part of Munich in a three year old building with approximately 2,200 m^2, of which the manufacturing company occupies 1,500 m^2. Nucletron owns this building and is willing to lease it at DM 7,-- per square metre.

Because of the limited manufacturing program and the highly competitive market, the manufacturing company of Nucletron is not profitable. This is the reason why they want to spin it off and concentrate on the sales company. The price for the company is around ₰ 200,000 of which around 50 % is for equipment and machinery.

If Digital Equipment is interested in this company, please do not contact the President, Mr. Adler, directly, but let me know that I can put you in contact with him for further details.

I hope to see you in September in Munich.

Best personal regards,

Leo

Dr. L. Steipe

Encl.:

OPERATIONS COMMITTEE MEETING

September 2, 1969

AGENDA

1. Monthly Management Report

The following items will be discussed only if Item 1 has been completed:

2. Additions and Corrections to Minutes of the August 18 and 25 Meetings
3. PDP-12 Program Change Proposal - (Dick Clayton/Ed Kramer)
   (See attached report)
4. Proposed Workshop at Psychonomic Society Meeting - (Bill Kunkle)
   (See attached report)

digital INTEROFFICE MEMORANDUM

DATE: September 3, 1969

SUBJECT: MINUTES OF THE OPERATIONS COMMITTEE MEETING ON SEPTEMBER 2, 1969

TO: Operations Committee

FROM: Win Hindle
Secretary

Present: Stan Olsen, Brewster Kopp, Pete Kaufmann, Nick Mazzarese, Ted Johnson, and Win Hindle

1. Minutes of the August 18th Operations Committee meeting were approved. The decision made by the GLC-8 Committee (Ted Johnson) was to proceed to rewrite the program on the PDP-8.

2. Minutes of the August 25th Operations Committee meeting were approved as submitted.

3. Reports by Product Line Managers on July Results

A. PDP-9/15 - John Jones

John reported that he was in budget trouble with Field Service Expense. Jack Shields has proposed a new annual budget for the 15 which is double the original budget; John has not accepted this new proposal and will negotiate this figure with Jack. John expects to propose a PCP for the PDP-15 which will increase shipments over budget for the year; this will pay for the increased selling expenses that are being incurred on the 15. The cost of limited release modules was discussed, as John feels that this item cannot be budgeted accurately in Product Line Engineering. John will set up a project number to collect these costs for eventual transfer to Cost of Goods Sold. Shipments of PDP-15 for Quarter 2 will be 20 machines instead of the budgeted 40 machines, and this slippage will hurt the budget for that Quarter. John will report back in several weeks.

B. Modules - Fred Gould

Fred expects to make his profit budget in Quarter 1. We received a $900K order in August. He expects to ship 98% of his overdue backlog by the end of September.

C. PDP-10 - Bob Savell

Bob reported that his bookings numbers are not the same as the EDP report; he will report back when he has an explanation as to why this is so. Bob has the same Field Service budget problem on the 10 as John Jones has on the 9/15. He will work with Jack Shields to come out with a new, realistic budget. Burroughs disk problem will not prevent meeting Quarter 1 or 2 shipment budgets; we will be caught up on overdue Burroughs disks by the end of September. Memorex disk deliveries could be a problem; it is the problem to watch this year. Bob reported that we are working on a second source for disk packs. The high level of PDP-10's in-house to do production test was questioned by Pete, and Bob will report back on this.

D. PDP-12 - Dick Clayton

Production deliveries of PDP-12 will be up to the October rate in October, but we will not have caught up overdue backlog then. We should meet the Quarter 2 budget. Bookings will be over budget for Quarter 1. Dick has stopped advertising and "road shows" to slow down sales expense and bring it into line with budget. Dick has proposed a PCP for the PDP-12 which will show an increased selling budget. He was questioned on his PCP as to how the FY '70 budget would look if no new development or marketing projects for FY '71 were begun. Dick will present this alternative to be considered by the Operations Committee.

E. Special Projects - Joe St. Amour

Joe feels we are ready to turn on disk (RS08) production, although all the surface problems are not completely resolved. He feels that Nashua Corporation can solve the problems sooner than any other alternate source (including DEC internally). Joe will write a summary within a week as to where we are.

We will not sell this unit until the Operations Committee formally approves accepting new orders.

F. Sales and Field Service - Ted Johnson

Ted still feels we will be over budget by $80K in Quarter 1; he will be within budget in Quarter 2. All regions are over budget on bookings this year.

G. PDP-8 - Bill Long

Bill is considering specific market areas for the Business Applications program; he does not feel that IBM's System 3 will prevent us from proceeding with this program. Bookings are $5 million over budget for July and August; Bill stated that this was to a large extent OEM orders received prior to the price increase. Bill estimated that $6 - 8 million of backlog depended on RS08 disks; he would have to change the PDP-8 plan if the disk continues to be non-shippable. Advertising budget will be over in Quarter 1 because of late charges; however, FY '70 annual budget will be met.

H. Manufacturing - Pete Kaufmann

Inventories will be rebudgeted if new PCP's are approved; at the end of the First Quarter, inventories will be $3.5 million over our original budget. Production Engineering is under budget, and Bob Puffer is adding staff to provide the needed production engineering support. Increased production will probably mean more subcontracting - costs will therefore probably use as much as 0.5% of selling price, Pete estimates.

4. Workshop at Psychonomic Society Meeting

We approved Bill Kunkle's proposal to exhibit at this meeting on November 6 and 7, 1969.

W. R. Hindle, Jr.

digital INTEROFFICE MEMORANDUM

DATE: August 29, 1969

SUBJECT: Tuesday's Operations Committee Meeting

TO: Ken Olsen FROM: Ed Savage

Attached please find questions to be answered at Tuesday's Operations Committee Meeting.

John Jones - PDP-15

1. There is apparently some question as to the feasibility of your Field Service budget. You referred in your memo to the Operations Committee that you would discuss this with Jack Shields. What is projected for the 1st Quarter and what will be the impact on 1970 Plans

2. The month of July shipments were below budget. The projected shipment for the 1st Quarter are $3 million. Is this composed exclusively of PDP-9's or are PDP-15's included? If PDP-15's are involved will the MF Disc effect deliveries? Future Quarters

3. Increased selling effort is having an adverse effect on profit margins, will this be offset by increased shipments?

4. In your recent proposal to the Operations Committee to change the original budget you indicated Marketing costs would be increased from $97,000 to $111,000 for the 1st Quarter. Quarters 2, ($102,000), 3 ($120,000) and 4 ($129,000) were not revised. If you now forecast spending $123,000 in the 1st Quarter how will expenses be reduced to achieve the remaining budget.

5. Engineering Expense: Your recent proposal to Operations Committee revised the 1st Quarter budget from $579,000 to $598,000. Your 2nd Quarter budget of $435,000, 3rd Quarter of $377,000 and 4th Quarter of $366,000 are well below this 1st Quarter estimate. How will the budget be achieved?

Fred Gould - Modules

1. In your July letter you mention that the planned sales effort did not materialize. Will this trend continue, and if so, what impact will this have on your plan for this and future quarters?

2. When do you feel your shipment problems will be resolved? Is this a short or long term problem? If a long term problem, shouldn't you consider a revision of your budget?

3. If we are to hold our competitive position as the leading manufacturer of modules, how do you reconcile this, with the fact that we are budgeting fewer selling expense dollars for FY 70 compared to FY 69?

Bob Savell - PDP-10

1. From July results, it appears that problems exist in the warranty, maintenance and service areas. Is this a one time problem or does this require a revision of plan? If so, have you determined the impact?

2. If your bookings are significantly over budget now and your shipment chart hasn't changed, why do you feel your backlog will drop? (see Graph)

3. If the disc problem persists, will it mean a variance from plan in Quarter 1 and subsequent Quarters?

Dick Clayton - PDP-12

1. Your plan reflects billings of $1.4 for the 1st Quarter. Pete Kaufmann's June - July report indicates that Production will be back on schedule by October. Are you and Pete now in agreement?

2. Your memo to the Operations Committee mentioned that reaction to the price change was mild. The actual results indicate that in July you booked $1.5 million and in August you booked $602,000. On the surface it would appear that the reaction was anything but mild. Is there some other explanation?

3. In your graphs you have projected an increase in bookings in September and a decrease in selling expense. Can you explain this apparent inconsistency?

Bill Long - "8" Family

1. In your July 26 memo you mentioned the business data processing market. How do your plans in this area relate to the commercial applications product line? What effect does the recent IBM System 3 announcement have on your marketing plans and specifically your sales to Infocom?

2. Bookings for July and August exceeded budget by $5 million. How much of this sudden surge of orders is directly related to the change in pricing policy? How does this effect your shipment plans for this quarter as well as next? Does this require a change in our planning? If this trend continues, there will be some fundamental production problems and unprogrammed manufacturing costs?

3. In view of significant bookings discussed above, what are the consequences (risks), if we do not resolve the disc problem? If the problem persists, it would appear that changes to the Operating plan (cost vs volume) would be appropriate. When would you anticipate making such changes?

4. In your review of July operations you referred to the fact that advertising and sales expenses will be significantly over budget. You indicated that some expenses planned for 2nd Quarter fell into 1st Quarter. Does this mean that 2nd Quarter will be under budget or are we faced with the problem that the entire advertising and promotion budget is unrealistic?

John Holzer - PDP-14

1. Bookings for July and August are running 33% of budget. In view of this, what is the impact on your shipment plans?

2. In July you shipped $41,000 and $17,000 in August, with a 1st Quarter projection of $130,000. How do you anticipate meeting your 1st Quarter shipment goal?

Joe St. Amour - Special Projects

1. The relevent questions here relate to the progress being made on the disc problems discussed under other Product Manager sections. If we are unable to solve this problem, have we considered the financial impact of alternatives?

Ted Johnson - Sales and Field Service

1. Is the sudden surge in orders in some product lines going to have a detrimental effect on modules, traditional products and PDP-14? If so, what are the financial implications of trying to rectify the problem?

2. You are currently on target in your sales manpower level. If the surge in orders continues, are you anticipating increased yields per man or can we anticipate a manpower increase?

3. One can assume that backlog on orders will increase. In your opinion will longer delivery periods affect our position in the market place?

4. In reviewing July-results, it is apparent that deficiencies in bookings in the Western Region are continuing. The Western Region represents 26% of the domestic bookings budget. What is your strategy to address this problem? If the problem persists what are the financial implications?

5. If sales manpower is held to budget, why are you estimating an $80,000 overrun in the 1st Quarter.

6. You mention that we will be $130,000 over budget for field service in 1st Quarter. What will be the full impact in FY 70 and are the increased bookings being taken into consideration?

Pete Kaufmann - Manufacturing

1. In view of the significant impact on the corporate financial position that increased inventories can have, if current engineering problems persist what will be the projected levels of inventory?

2. The production engineering cost center #374 only spent $15,000 out of a budget of $62,000 for July. Is the required level of support being given to PDP-12 and other engineering problems?

3. If current surge of orders continues, even with the expansions at Leominster and Westfield considered, will we be able to fill the increased orders by in-house manufacture or will we be involved in a significant contracting program? What would be the financial implications?

digital INTEROFFICE MEMORANDUM

DATE: August 25, 1969

SUBJECT: WORKSHOP AT PSYCHONOMIC SOCIETY MEETING

TO: Operations Committee FROM: Bill Kunkle

cc: Bill Segal
Win Hindle

I wish to request permission to set up a workshop in a hotel suite at the Chase Hotel, St. Louis, Missouri on November 6 and 7, 1969. LAB-K and LAB-8 would be displayed there. Frank Ollie and I would be in attendance.

1) Demonstrations would be given.
2) Informal discussions would take place on the needs of psychologists.
3) An opportunity would be given prospective users to operate the above equipment.

The Psychonomic Society was formed by Experimental psychologists who decided the National Meeting (The American Psychological Association) was not providing the Experimental group enough time and space for their needs. The Psychonomic Society has never had exhibits at their meetings which, in the past, have been held about the same time as the APA convention over Labor Day week.

I have obtained permission from Dr. C. T. Morgan, secretary of the Psychonomic Society, to set up a workshop in the same hotel as the meeting, provided DEC does their own publicity about the workshop. I was assured that the society would not oppose such a workshop.

The number of attendees usually runs between 1000 to 1500 people. All of these people are relay, solid-state module or on-line computer users.

The cost of a suite to seat about 25 people in an informal living room fashion, and a bedroom off to the side, will run approximately $170. for the two days.

The cost to ship the above mentioned equipment to St. Louis will, for the most part, be defrayed by the shipping cost to send these same

two units to the Fall DECUS workshops, planned for the 17th of November in Las Vegas, Nevada. No display booth equipment will be required for the workshop.

Since DEC has announced K series modules control kit, LAB-K, this summer, exposure of the product to the vertical market is required this Fall, for there are no regional conventions until the Spring. There is only one trade show presently scheduled for Fiscal 1970, the Eastern Psychological Association meeting in Atlantic City, April 2nd thru 4th. This meeting was very successful in Fiscal 1969.

Bill

djc