

DEC**INTEROFFICE
MEMORANDUM**

DATE December 29, 1959

SUBJECT Oilgear Company

TO Harlan Anderson/Dick Best/
Ben Gurley FROM Kenneth H. Olsen

Wes Broom, from Oilgear Company, on Route 128, is coming out with one of their project engineers at three o'clock on Wednesday, December 30, to discuss their problem.

My thoughts now are to make a single register device which adds one, subtracts one to keep track of the shaft encoder and also adds and subtracts the contents of the tape register. When a new number is read from the tape, it is subtracted from the shaft counter giving a relative error. When operation is complete, the contents of the paper tape are added to the counter giving the absolute position again.

There are a number of problems with a servo-mechanism, particularly when it is tied to a machine tool which we have thought out, and this is the sort of thing they will discuss with us.

If we could make a simple test equipment counter connected to a DAC converter, it would make an enticing demonstration for them.

Kenneth H. Olsen

SALES TRIP REPORT

JBB

December 23 - December 28, 1959

Except for American Electronics Laboratory and Burroughs, this report is replaced by Sales Trip Report January 4 - January 8, 1960.

American Electronics Laboratory

Harry Kenosian may some day buy our equipment, is sold on idea, but do not at present have an application.

Sales Trip Report

-2-

December 23, 1959

Burroughs - Philadelphia

Dick Dadamo hopes to get some test equipment for general use.

MEMODATE December 28, 1959TO Ken Olsen/Harlan Anderson FROM Ken Olsen

We should call Sam Auchinclass, of Tracer Lab, to make an appointment with Twinning to go over their salary studies, and we should also call John Proctor at Mitre Corporation to see what the latest story is on their Los Alamos studies.

Ken Olsen

id ec MEMO

DATE December 28, 1959

TO Harlan Anderson FROM Kenneth Olsen

Have we answered the inquiry from Hyatt Bearings, and
would a telephone call be in order at this time?

Kenneth Olsen

ced**INTEROFFICE
MEMORANDUM**

SUBJECT **Holloman Air Force Base,
New Mexico**

TO **File**

DATE **December 28, 1959**

FROM **H. E. Anderson**

Mr. St. John telephoned today. He was merely checking to find out if we had received DD form No. 261 covering their requirements for units which he previously called about. His reason for calling was to make sure that we completed the form and returned it to him as soon as we got it due to the urgent need for the equipment. He reminded us to be sure to sign the contingent fee statement which has to do with whether we used sales representatives in soliciting this business. He also said we should fill out questions 1, 2, and 3 on the front of this document.

Apparently this is going to be handled without any formal bidding and the document being sent to us is an actual contract which we are to sign. An Air Force contract number has been assigned to it already. It is AF 29-(600)2292. As of noon on December 28, we have not received the document that Mr. St. John telephoned about.

H. E. Anderson

CC: T. G. Johnson

MEMODATE December 22, 1959TO I.R.E. FileFROM H. E. Anderson

I telephoned the I.R.E. in New York today to find out about our booth assignment. I was told that an assignment has been made and it was mailed on December 18 to us and we should receive it shortly. Our booth number is 3831 on the third floor. I spoke with Miss Weyand. This assignment conceivably might be changed if they need to in order to keep exhibitors who compete with each other from being adjacent, which appears to be a current problem at the moment. There also seems to be virtually no chance of getting an increase in space. Space availability is tighter than it has ever been before, according to her.

Also located on the third floor with us this year will be Computer Control, Navcor, and IBM.

H. E. Anderson

CC: J. L. Atwood
K. H. Olsen

December 16, 1959

Mr. Ed Fredkin
Bolt Beranek & Newman, Inc.
50 Moulton Street
Cambridge 38, Mass.
UN 4-5870

Dear Mr. Fredkin:

I found our recent conversation in Bethesda concerning the possibility of your organization constructing a general purpose digital computer for the National Institutes of Health both fascinating and interesting. If this possibility is a real one, I should appreciate the opportunity of further and more detailed discussions with you and with your associates. As you know, I do not have a firm idea about such details as: Exact specifications, costs, and possible delivery dates.

If you and your associates are interested in pursuing this matter further, please contact me.

Sincerely yours,

Norman Z. Shapiro

cc: Dr. George Williams, NIH
✓ Mr. Harlan E. Anderson, Digital Equip. Corp.
Dr. Jordan Baruch, Bolt Beranek & Newman Inc.

MEMODATE December 15, 1959TO Harlan Anderson/Ben Gurley FROM Ken Olsen

For applications where we need a real timed clock, we might consider the Datex Corporation digital clocks. These have digital education on the front panel and hours and minutes and seconds. They also have a switch which gives the readout interval, but I don't think we need that. They need some synchronism because during the switch there is some ambiguity in the contacts.

When all is wanted is a printout of the time a program is started, the month and date could be entered with toggle switches and a clock that gives minutes and seconds could be used otherwise. The month could be entered in toggle switches and the days and hours and minutes come from the digital clock.

We have bulletins on this unit in the catalog file.

Ken Olsen

MEMODATE December 15, 1959TO Jim Myers/Harlan Anderson FROM Ken Olsen

Carl Beckman, who used to work for Burroughs and is now a consultant, has been making studies for IT&T and Earl Puge told him about our computer. He looked over the specifications and thinks it's the hottest thing around and something that IT&T and the Ordnance Department should use. I told him what I could over the phone and he was very enthusiastic and thinks we have a machine much better than the CDC machine. He is going to send a letter and from that we can get his address.

Ken Olsen

MEMO

DATE December 15, 1959

TO Bob Hughes FROM Ken Olsen

We have a gross mistake in our literature in claiming that the drive on a diode unit is equivalent to one load when really it is equivalent to three loads. Will you consider methods of correcting this, and maybe we should simply mark up all our literature that we have now or else send out new application notes.

We also have not told people about the problem of putting resistors to -3 from emitters that are used in pulse gates. Will you consider a short application note that will explain this and that we can send out with our next mailing.

Ken Olsen

CC: ✓ H. Anderson
R. Best
J. Brown
S. Olsen
W. Weeton

18 December 1959

Lockheed Electronics and Avionics Division (LEAD)

Sales

Ted Johnson

1. Joe Katz who was contacted by Wally Weeton set up a meeting for me with his boss, Gunnar Wennergren and J. Lee Price. Lee Price is the electronics man and should be contacted with reference to the Test Equipment assortment. They are interested in an automatic core tester. Any discussion of a plane tester will have to be something in the future. They are not ready for this yet and would be a likely prospect if we can get in there with our equipment. They will be preparing a specification sheet from which we can make a statement as to whether we could provide a Sense Amplifier, possibly Current Calibrator for an automatic core tester. They speak of using a Ramsey mechanical handler and then would have our Test Equipment generate the basic timing pattern into our Current Drivers where they will require disturb pulses of 600 or more in a burst. For the present and immediate future, they are interested in an individual core tester. They are unhappy with what they are getting from the Rese, and in preference to buying some more additional equipment at about \$2,000, Katz hopes to buy some of our equipment with this and some additional money. I will be bringing back a copy of the logic I have drawn up for this particular application. He is interested in getting it as close to \$3,500 as possible and I think does not have a very realistic picture of the Test Equipment building block application. Lee Price should be the person to whom this type of technical information should be directed. I come to 13 building blocks of the 3000 series amounting to: 3 flip-flops, 1 Clock, 3 Delays, 4 Diodes, 2 Inverters and then 4 Current Drivers, two positive, two negative. I did not provide for synchronizing flip-flops and utilized the clock pulse or the delayed pulse from the two delays used to generate the burst of 20 and burst of 40 gating levels to set the counter to the next counts. At the frequency at which they are working, they should be able to set this without needing a synchronizing flip-flop. But we should state this in a letter and once they make the initial purchase they feel it would be no problem to add a few more units. They could do this with the synchronizing flip-flops. At this time we should provide an adequate set up at the least possible price. In the letter to Lee, information should then be contained on 1) stability of the Current Drivers over at least a four hour period. This question is raised primarily because of the fluxuations in amplitude of the Rese Current Drivers. Had the same problem from Litton and the answer to this question should be forwarded to Vic Walker or Marvin Pink at Litton. If there is no variation including after warm up time and we should state what warm up time is, then we should say so. Along with this I would like to obtain figures on the regulation of the power supply. 2) send the logic for the individual core tester. 3) mention how much logic would be required to do the automatic core tester, which in this case would be approximately the same as the individual core tester. 4) Katz would like the facility of having a potentiometer and meter on the half pulse Current Drivers so that he could compare this against a standard core on the meter

reading. This apparently is a desirable feature for half pulse tests.

All in all, this division looks like a good opportunity to get our equipment in there in the early stages. I find Katz to be a difficult person to communicate with. They are presently working in a large production building which is essentially unoccupied. They have a small lab going there, but there are only a few benches in the entire production assembly floor.

2. Remember to comment on demonstration kit power supply.

3. Trip to Boeing

The following names for follow ups on letters and further action:

Group 1 - Aerospace Division, Minute Man
Clinton McFarland

Organization 2 - 4400 Materiel - System Test Advanced Programs

Carolyn M. Guidry, 2-5604
Jack R. Sando, 2-5000
P. L. Boyce, 2-5000
George R. Pollis, 2-5000
Donald J. Bernitt

This group is an evaluation group for large systems suppliers and equipment and are possible follow up for computers. McFarland's P. O. Box is 3866, Seattle 24.

Group 2 - Bldg. 3-830

Ralph Reid
Bruce Benton - Engineer and circuits man
Bill Lucey, 5-1701-Test Equipment

Are primaril circuits group for sequential monitor of Minute Man. Don't see immediate application. Utilizing magnetic core logic for their standard building blocks.

Group 3 - Minute Man Computer Group

Don W. Fox
Gerry E. Whelan

Possible need for word generator in PCM telemetering 27 bit 500 kc. Possible use of the \$79 Dual Flip-Flop and possible need for BCD Converter. Carl Johnson or Bill Brownigan is the buyer.

New Engineering Building - Minute Man

Martin Gerry - reference Wayne Brobeck

Engineer in charge Ham Ploof. Quite interested in word generator and code converter. Other people are Bob Murray, Ken Brown, and Harlow Beene. Beene is particularly good. Could be good prospect for 500 kc. 4000 series. This is support equipment group.

Note: Ralph D. Reid, Group 2, is launch systems.

Note: McFarland asked about possible biomedical areas.

Group 4 - Development Center Minute Man

Purchasing and other engineering moving to this area. Talked with Carl Johnson, Merrill Larson, and Bob Mitchell in Procurement.

Group 5 - Send letters to Aerospace Buying Supervisors

George Jenson, MS-37-30, reference A. McLachlin - capital equipment nature, Seattle 14.

Send letter to buying supervisor Oswalt at Seattle 24, reference Mr. Roloson. Send letter to Ed Doolittle, reference Bud Knudson, Harvard Business School grad, Director Incorporate Division of Planning.

Group 6 - Transport Division

Keith Norsworthy and Barnes on the electrodynamic staff data systems unit. These people build support equipment for sales of standard transport planes. Interested in getting laboratory gear of this sort and inquired about future loan. Talked with Eric K. Hawkins in Purchasing and Materiel, who directed to engineers, provided overall feeling for Boeing, and gave names for MRO capital equipment people.

Other Names

Bjarne Slind and John Emerick in Data Reduction. Hans Pauls, Frank Ashelman, Al Williams, Frank Duval, G. B. Jenson - all of these are in Minute Man. Bob Swanberg and Neil Leach, Larry Fitzgerald and Carl French - also in Minute Man. Ralph Foss and John Mathieson in Dynoscar. Mel Paisley, bomarc of Aerospace. Dick Montgomery, friend of Harlan's said to say hello. Send letter to Carter Powell 7216 93rd Avenue, S. E., Mercer Island with literature. He was quite interested. They do work for Edwards Air Force Base. Send letter to John Emerick-Mailstop at 1505, Dept. 2-6000. Send full set of literature to Boeing Library. Send letter to W. E. Lucey, 17824 3rd Place, S. W. Seattle 66. Send letter to James A. Overby and call again in 1960. Send personal card.

Boeing Note: Much of the work on Minute Man is well under way, although there are possible areas with need for our equipment, scattered throughout Boeing, and some of the calls are worth real follow up effort. Dynoscar program will be getting under way in the coming year and it will be well to hit the key people on this program.

4. General Electric - Richland, Washington

Talked with Mr. R. Williams, Ext. 27719. He is an instrument engineer. Said to send card and literature and thought it would be worth a visit in the future. Plainlands at Pascoe, Washington. Contact Mr. J. E. Kaveckis and N. T. Hildreth. Investigate if Richard Hodson is business school friend.

11 December 1959

Air Force Cambridge Research Center - Mr. Floyd Cook

File

Harlan E. Anderson

Mr. Floyd Cook telephoned again to ask some additional questions about our ability to produce memories and about our PDP. CRC now has a Remington Rand computer which has a drum memory on it and they are thinking seriously of putting a magnetic core memory on it in the fairly near future. They are thinking about 4096 words, 48 bits each with parity. I gave him some very preliminary and qualified information about delivery and price on such a unit. The delivery I estimated we could do in roughly four to six months and the price somewhere around \$100,000. This may become a rather immediate program although they are still not quite sure. Their interest in PDP is considerably longer range than their interest in the memory. No further action or follow up is required at the moment on this.

COPY

10 December 1959

Bell Telephone Laboratories - Murray Hill

File

Harlan E. Anderson

I spoke with Mr. Edward Bryan on the telephone today and offered to send him literature on our System Building Blocks. This is the man that Tom Stockebrand suggested during the Eastern Joint Computer Conference. Stocky estimates that this man is in the market for roughly \$80,000 worth of equipment in the next few months. His telephone number is CR 3-6000, Ext. 3877. I also told him that we would get together with him in the next few weeks to see if he had any questions about the equipment. His project is just now getting under way and he estimates that it will be after the first of the year before they really know what they need.

He is a personal friend of Ted Johnson, probably from Cal Tech days since Stocky also went to Cal Tech. We should be sure to send him the 4000 Series literature when it becomes available, also. He knows of the installation at Whippany with Genke and also the one at Murray Hill with Floyd Humphrey.

cc: Reminder File
H.E.A. File

COPY

10 December 1959

Raytheon - Bedford

File

Harlan E. Anderson

I telephoned Martin Schramm at Raytheon in Wayland today to follow up on the analog to digital converter application to the project PIN CUSHION that I originally discussed with him about a month ago. I was told by John Ward of Raytheon in Wayland that this project is now being handled entirely by Raytheon in Bedford, and that I should contact Mr. George Peeler, CRestview 4-7100, Ext. 510. I did contact him and he referred me to Donald Banks in Bedford at Ext. 2151. He in turn referred me to John Delaney on Ext. 2152 who apparently works for Mr. Banks and is the man actually doing the work. I was unable to reach John Delaney, but Jack Brown is planning on trying to see him tomorrow since he is going to Raytheon in Bedford anyway.

cc: Jack Brown
H.E.A. File

COPIED

10 December 1959

Daystrom

File

Harlan E. Anderson

Mr. Clark of the Purchasing Department telephoned today to say that they are still trying to figure out how to buy or lease the unit which they now have on order from us. I gave him a status report on it saying that we expect to be ready to ship around the 28th of December and so he is going to put a certain urgency on their making a decision whether to buy or lease the unit. No further action required on any of this at the moment.

cc: H.E.A. File

COPY

SALES ANALYSIS FROM JULY 1, 1959 THROUGH OCTOBER 31, 1959.

	<u>JULY</u>	<u>AUGUST</u>	<u>SEPTEMBER</u>	<u>OCTOBER</u>	<u>TOTAL</u>
DIGITAL TEST EQUIPMENT	\$35,452.70	\$57,146.50	\$25,435.20	\$15,154.80	\$133,189.20
SYSTEM BUILDING BLOCKS	25,547.75	20,113.35	4,969.00	10,183.50	60,813.60
MEMORY TESTER			35,000.00		35,000.00
OTHERS	<u>392.00</u>	<u>479.00</u>	<u>3,182.25</u>	<u>1,194.50</u>	<u>5,247.75</u>
TOTALS	61,392.45	77,738.75	68,586.45	26,532.80	234,250.55

DATE 11/12/59

FROM R. DILL

SUBJECT SALES ANALYSIS

TO H. ANDERSON

DEC
INTEROFFICE
MEMORANDUM

digital equipment corporation

MAYNARD, MASSACHUSETTS

**INTEROFFICE
MEMORANDUM**

M-1062

DATE November 12, 1959

SUBJECT Flexowriter Octal to Binary Tape Converter Program

TO All Engineers

FROM John C. Conley

This is the second in a series of programs for the testing and use of the PDP-1. It comes as the next logical step, in preparing tapes in the binary read in mode tape format, after the Test Word to Binary Tape Converter Program (Memorandum 1061).*

The purpose of this program is to convert a flexowriter octal tape into a tape in the binary read in mode tape format. This program makes it possible for the computer to recognize the octal characters punched on a tape in the alpha numeric mode and to punch out a tape in the binary read in mode.

Memorandum 1060, Preliminary PDP-1 Order Code, expresses all machine instructions in terms of octal numbers, therefore, this program only has to recognize flexowriter characters 0 through 7. For special use this program also recognizes the letters D and J and converts them into the DIO and JMP instructions on the binary tape.

In order to get this program on a tape in the binary read in mode, the following sequence of steps should be followed. First read the binary tape of the "Test Word to Binary Tape Converter Program" into the computer. Then, using the operator instructions contained in Memorandum 1061, place the "Flexowriter Octal to Binary Tape Converter Program", which follows in the computer. Two things will have been accomplished at this point, the "Flexowriter Octal to Binary Tape Converter Program" will be in the computer and this program will also have been punched out on a tape in the binary read in mode tape format.

By utilizing this program all subsequent programs can be converted to flexowriter tapes in the binary read in mode, by typing them out on the flexowriter** and then feeding this alpha numeric tape into the

* A description of the read in mode tape format is attached as an appendix.

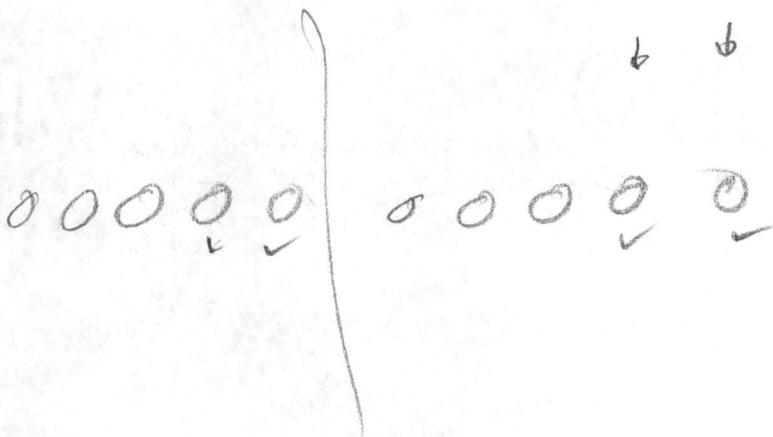
** Appendix II discusses preparation of flexowriter tapes in the alpha numeric mode.

computer. The following operator instructions are needed to use this program.

OPERATOR INSTRUCTIONS

After the "Flexowriter Octal to Binary Tape Converter Program" has been placed in the machine, follow these instructions to convert flexowriter octal tapes to tapes in the binary read in mode tape format.

1. Set Test Address to 0040.
2. Push start button on the console. (This will cause 6 lines of tape to be punched for each instruction or word on the flexowriter octal tape. The first three will be DIO-N and the next three the word or instruction).
3. The machine will halt when the last instruction or word has been punched, completing the tape in the read in mode tape format.



FLEXOWRITER OCTAL TO BINARY TAPE CONVERTER PROGRAM

<u>Key</u>	<u>Address</u>	<u>Instruction</u>	<u>Order Code</u>	
C	40	CLA	76-0200	Puts zero in AC
	41	IOT	73-0001	Read in one line of face in alpha numeric mode.
	42	RCR 8	67-3377	Put character in AC
	43	SAD 0	50-0145	
	44	JMP S	60-0070	
	45	SAD 1	50-0146	
	46	JMP S	60-0070	
	47	SAD 2	50-0147	
	50	JMP S	60-0070	
	51	SAD 3	50-0150	
	52	JMP S	60-0070	
	53	SAD 4	50-0151	
	54	JMP S	60-0070	Sorting flexowriter characters
	55	SAD 5	50-0152	
	56	JMP S	60-0070	
	57	SAD 6	50-0153	
	60	JMP S	60-0070	
	61	SAD 7	50-0154	
	62	JMP S	60-0070	
	63	SAD D	50-0155	
	64	JMP DIO	60-0116	

	65	SAD	J	50-0156	
	66	JMP	J	60-0135	
	67	JMP	C	60-0040	Unused characters
S	70	RCL	5	66-3037	Octal digit in AC bits 0-2
	71	ADD	B	40-0164	Assembly with previous digits
	72	RAL	3	66-3037	
	73	DAC	B	24-0164	
	74	ISP	Y	46-1127	Test to see if 6 characters have been read.
	75	yes (JMP C	no → 60-0040	
U	76	JMP	K	60-0126	
		LIO	D	22-0165	
	77	IOT		73-0006	
100		RCL	6	66-3077	
101		IOT		73-0006	Punch 3 lines of tape in binary DIO-N
102		RCL	6	66-3077	
103		IOT		73-0006	
104		IDX	D	44-0165	Index DIO-N
105		LIO	B	22-0164	
106		IOT		73-0006	
107		RCL	6	66-3077	
110		IOT		73-0006	Punch 3 lines of tape in binary - The assembled instruction.

	111	RCL 6	66-3077	
	112	IOT	73-0006	
V	113	LAW -5	71-0005	Resets line counter
	114	DAC Y	24-0166	
T	115	JMP C zero	60-0040 000000	Halt at end of conversion
DIO	116	LAW -3	71-0003	Reset line counter
	117	DAC Y	24-0166	
	120	LAC Q	20-0157	
	121	RAL 6	66-1077	Sets up octal for DIO
	122	DAC B	24-0164	
	123	LAC R	20-0160	Temporary setting for getting initial value of DIO-N
	124	DAC U	24-0076	
	125	JMP C	60-0040	
K	126	LAC B	20-0164	Initial setting of DIO-N in D
	127	DAC D	24-0165	
	130	LAC S	20-0161	Restores U to normal contents
	131	DAC U	24-0076	
	132	LAC-JMPC	20-0075	
	133	DAC T	24-0115	
	134	JMP V	60-0093	Start assembly of tape
J	135	LAC M	20-0162	Puts zero in T to set stop after next punch
	136	DAC T	24-0115	

	137	LAW -3	71-0003	} Reset line counter
	140	DAC Y	24-0166	
	141	LAC Z	20-0163	} Sets up octal code for JMP at end of tape
	142	RAL 6	66-1077	
	143	DAC B	24-0164	
	144	JMP C	60-0040	
	145		100000	} Flexowriter octal characters placed in memory for the sorting process
	146		002000	
	147		004000	
	150		046000	
	151		010000	
	152		052000	
	153		054000	
	154		016000	
	155		310000	
	156		242000	
Q	157	DIO	32-0000	} Instructions placed in memory for use by the program
R	160	JMP K	60-0126	
S	161	LIO D	22-0165	
M	162	Zero	000000	} Memory locations used in the program
Z	163	JMP	60-0000	
B	164			
D	165			
Y	166			

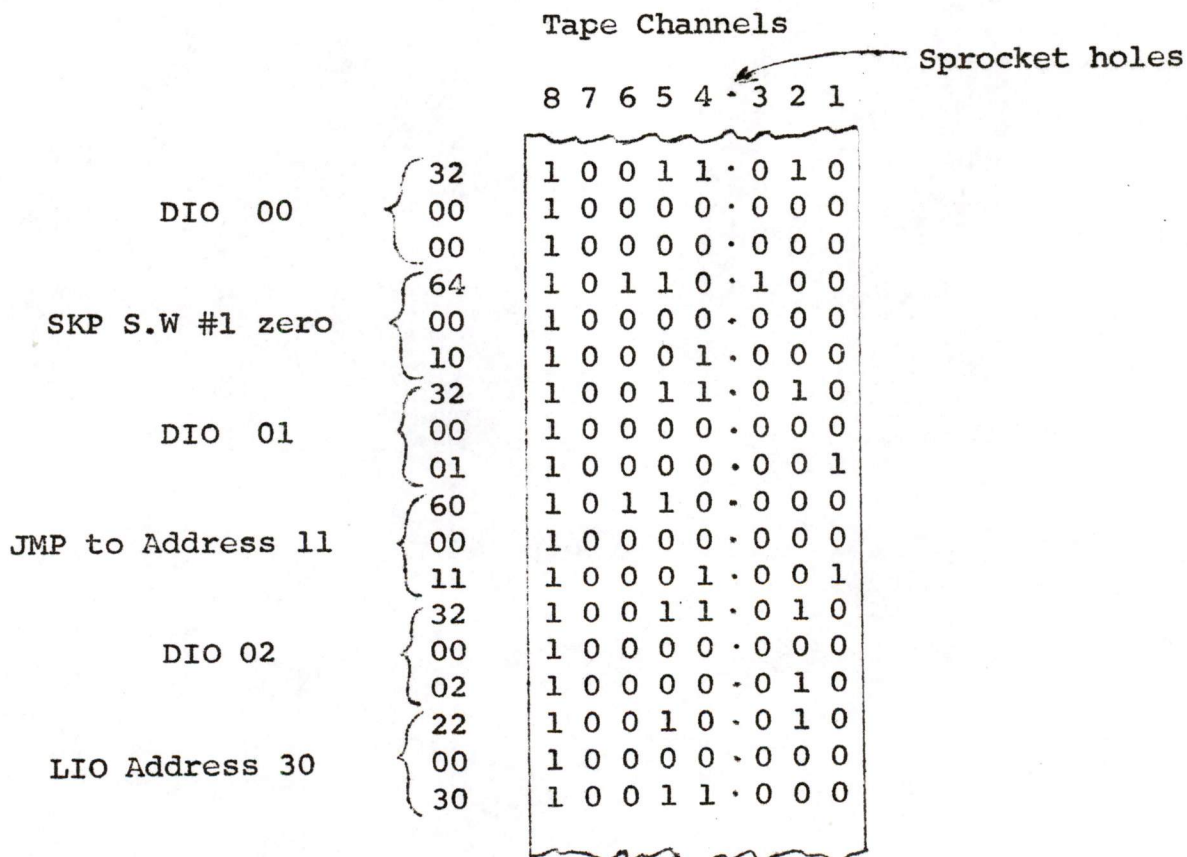
Appendix

Read in Binary Mode Tape Format

Read in binary mode tape format refers to the layout a flexowriter tape must have in order to be read into the computer using the "Tape Reader Binary Mode."

Flexowriter tape has eight channels in which holes may be punched. A hole punched in a tape refers to a binary "one" and no hole refers to a binary "zero", when the tape is in the binary mode. In the PDP-1, one computer word is 18 bits long and appears as three consecutive lines on a tape punched in the binary mode format. A binary tape has the eighth channel punched in each line to show that it is in the binary mode.

A piece of tape, with the first few instructions of the Test Word to Binary Tape Converter Program, is drawn to show the binary mode tape format. 1's represent holes in the tape and 0's the blank spaces.



APPENDIX II

ALPHA NUMERIC MODE TAPE FORMAT

Alpha numeric mode tape format refers to the layout a flexowriter tape will have when a program or data is typed on the flexowriter keyboard.

A flexowriter has a standard typewriter keyboard which is used to prepare paper tapes. The paper tape has eight channels and each line of eight channels which is punched represents one character in the program or information typed on the keyboard. A tape produced by typing on the keyboard will be in the alpha numeric mode. A tape in the alpha numeric mode can be distinguished from a tape in the binary mode by observing the eighth channel (the fifth column to the left of the sprocket holes). A tape in the alpha numeric mode will have no holes in the eighth channel except for carriage return, while a tape in the binary mode will have a hole in the eighth channel of every row.

When preparing a tape on the flexowriter, the program or data should be typed according to the following layout. The first thing typed in any program should be DIO-N. This specifies the first memory register, of the sequential series of instructions that is to be used in storing the program. The converter program will assign registers sequentially to the remainder of the program or data. The last thing typed in any program should be JMP-R, which will designate the next instruction the computer should follow. This may be the beginning of a new program or **halt**.

Program title, date, author.

DIO-0040	77-0000	73-0001	67-3377
50-0145	60-0070	50-0146	60-0070
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
60-0040	100000	002000	004000
JMP-0000			

The program is coded, according to Memorandum 1060, before it is typed on the flexowriter. The dash between the first two digits and the last four digits indicates that the word is composed of two parts, an instruction and an address or additional instruction. The computer will ignore this dash but it should be typed in to give a visual indication of the difference between a two part word and a one part 18 bit word. The last three words shown alone are 18 bit words of which no bits are instruction bits.

MEMODATE December 7, 1959TO Stan, Andy, Wally, Jack Brown FROM Ken Olsen

United Aircraft has started their weather analysis program down at Hartford of which data processing is a key part. We should contact them and see if we can't supply the computing equipment for them. If any of you have contacts with someone down there, please let me know and we can organize our approach to them.

Ken Olsen

23 November 1959

INQUIRY FILE

Jim Myers

Kenneth H. Olsen

We do not now have an effective method for keeping track of all inquiries to be sure that they have been answered and exploited to the fullest. Because you are the one man who is at home base most of the time, I would like to give you the responsibility for this. I propose that you set up the following system right away and we will try it for a week or two and then if we have improvements, we can make modifications. I would rather make a first pass immediately than to make a big operation of getting everybody's opinion on the subject first.

I suggest that you get a loose leaf notebook which you will title INQUIRY FILE. This file will always be on your desk so that anyone can check on it, but not so conspicuous that people outside wandering through will take a look at it. Each day every inquiry that comes in by telephone or by letter will be given to you and you will enter it into that week's sheet. On this sheet there will be all necessary pertinent information, and one column listed Action Taken By so and so and another column titled Further Action and Date for Further Action. I propose that each week we have three of these sheets, one for building blocks, one for special systems, and one for Programmed Data Processors.

When an inquiry is completely taken care of it will be crossed off the sheet and at the end of each week, all of those not taken care of will be transferred to the next sheet and crossed off the last one. All the old sheets will be maintained for some indefinite period of time.

I suggest that you mimeograph a form for these sheets. As we go along we will undoubtedly change the shape of the sheets but we will learn this after we try. If we need much longer rows for all the information we need, we may have to draw them up on B size tracing paper and use blue prints in our notebook so we can use B or C size paper for that.

cc: Jack Brown, Walter Weeton, Ted Johnson, Harlan Anderson, Stanley Olsen, Dick Best and Ben Gurley

000**INTEROFFICE
MEMORANDUM**

DATE November 17, 1959

SUBJECT Tentative Pricing Schedule
for Special Systems

TO

Harlan Anderson
John Fadiman
Stan Olsen
Maynard Sandler
Dick Best
Ben Gurley

FROM Kenneth H. Olsen

The price of a special system shall include the following components: DEC Catalog Items at catalog price and special building blocks priced as if they were catalog items. The engineering of the special units shall be charged under Engineering. These prices already include Selling, General and Administrative Expenses and should be added indirectly to the price.

Other components are charged at twice the cost to take care of Selling, General and Administrative Expenses. Engineering time is charged at \$4,000 a month including Selling, General and Administrative Expenses.

Drafting, Shop-work and Technician time are charged at \$1600.00 a man-month, which includes S, G & A.

We will assume that it costs \$100.00 per chassis to wire a mounting panel in the assembly department and so with S, G & A we will charge \$200.00 per mounting panel.

We should also add to this number, when selling, maintenance or installation costs may be high, particularly if, for example, someone has to go all the way to California. On the other hand if we are reasonably sure of selling a number of units we may plan on spreading the engineering and drafting costs over several units.

10 November 1959

IBM 1620 Computer

File

Harlan E. Anderson

I telephoned the Cambridge office of IBM to inquire about their new Type 1620 Computer announced in the November-December, 1959 issue of the HARVARD BUSINESS REVIEW. I was given the following information on it. It has a magnetic core memory which holds decimal characters. Access to any character takes 20 microseconds. This is a decimal machine and its instructions require 12 digits. Numbers that you work with can be variable length so that double precision has no meaning. Sub-routines that will be available for the machine will include those for four tran floating point expidental computations, etc. Input is by either paper tape at a 150 characters per second or by typewriter. Output is by typewriter or paper tape punch at 10 characters per second. As an accessory device they have available a typewriter to paper tape punch device similar to a flexowriter.

The monthly rental for this system not including this off line typewriter is \$1600 per month. The purchase price for the same amount of equipment is \$74,500.

ed
**INTEROFFICE
MEMORANDUM**

DATE 6 November 1959

SUBJECT LIBRASCOPE

TO Harlan E. Anderson

FROM Ted Johnson

It turns out that Librascope is not interested at the present in any more than the purchase of our blank System Building Block cards. Their order would run around 100 cards plus mounting panels without the back wiring. I don't think that this would amount to a significant sale. I explained our situation and unless you feel we want to get rid of some inventory or would be willing to sell just these cards, I don't think we should follow up on this. It is a test equipment group with a varied need for putting wide range of circuits on small removable boards and their requirements do not seem to indicate a future market for digital Test Equipment.

dec **MEMO**DATE 6 November 1959TO Harlan E. AndersonFROM Ted Johnson

On the real time Data Assimulator sent under separate cover,
please make a copy of it and return the original to me. Call
attention to Figure 5 on Page 6.

To: Harlan & Anderson

JBB SALES TRIP REPORT - 11/4/59 & 11/5/59

Visits were made to Air Force Cambridge Research Center, IBM in Owego, IBM in Endicott

Contacts were made with Link Aviation, General Electric in Johnson City, IBM in Ossining, and IBM in Poughkeepsie

Air Force Cambridge Research Center

Talked with the man using our equipment there by the name of Ken Reed and made visits around. Robert O'Neil from the Computer Lab, Ext. 302, is interested in the memory tester and might like to drop by and see ours next week. Robert Wagner and the man who's working for him by the name of Stanward Ayer were very interested in our Test Equipment for general use in the laboratory. Said they would like to see a demonstration.

Follow up: 1. Return in approximately one week's time to show demonstration to Stanward Ayer.

Sales Report 11/4 & 11/5

IBM - Owego

I was unable to talk with Morton, Marmillian, Doyle, Oldfield, or Kulze. Marmillian, however, did send a man out by the name of Al Kirk to look over our product line. Clif Eberle is the buyer for this area and is very anxious that all contact work be done through him. Harvey Wells had been there about two weeks before and talked to a Mr. Fisher. I was unable to learn anything of Fisher. Kirk was generally interested in our equipment, particularly the memory tester, and indicated that he might like to come to Boston to see it. He is, however, a very junior man in the purchasing side, and Eberle frowned on the whole idea. Marmillian is Kirk's boss and Morton is Marmillian's boss. Telephone call to Bill Colven, Dept. 598, produced no results. He gave two other names to be contacted, W. Yurgartis, and Sal Taub.

Follow up Action:

1. Send a teletype to Eberle with copies to Kirk and Marmillian inviting them to see the Memory Tester.
2. Send Memory Tester 1511 brochure in the same manner.
3. Call Eberle in about 3 weeks. (Reminder file)
4. Send a letter with brochures to W. Yurgartis, and Sal Taub.

Sales Report 11/4 & 11/5

IBM - Endicott - Broad Street

The equipment that we lent Endicott IBM had arrived and we were able to set up the programs and drivers to drive Harry Kuntleman's shift register. He was very pleased with the equipment, intends to push it there in the plant for us, and will keep in contact. Kuntleman is very helpful. While our equipment was operating, another man by the name of Fay W. Martin from the Glendale Labs stopped by. He is now the owner of about a 10K Rese Tester which does the same job, is interested in changing to something more flexible and transistorized. This man is a good prospect for us in the future. Kuntleman promised to be sure and get Martin over at a later date. Incidentally, Martin is a big fisher and hunter and owns lots of land in the Endicott area. Also checked with Cal Alber, Ext. 4458, who is the purchasing man on this job. He is very friendly and cooperative.

Follow Up:

1. Call Harry Kuntleman in one week's time to see how it's going.
2. Send letter to Fay W. Martin

Sales Report 11/4 & 11/5

IBM - Endicott - Main Plant

Called Mo Ardell, who is the test equipment man, said he still is thinking about us but no particular job has come up since I was last there. Talked with George Plain. He's the man interested in the educational use of our equipment. Told him about the blue line. He says the decision hasn't been made on the upper level yet just how detailed their courses are going to be. He is asking to look at our equipment and maybe something will come through. Also visited with A. B. Bryant, the buyer specialist for tools, and Jim Steranko. Steranko works on programming automatic machine tools and is beginning to get into digital logic. Was interested in the equipment. Would like to get a catalog. Bryant, the purchasing man again, wants everything to come through him.

Follow up should be:

1. Send A. B. Bryant 2 sets of our full catalogs.

Sales Report 11/4 & 11/5

I also contacted the following places:

Link Aviation:

R. W. Northrop there at Link said situation not changed, would keep us in mind.

General Electric - Johnson City

M. J. Wallace said situation not changed but something's about to break. Keep in touch. Walt Williamson said keep in touch. C. A. Thompson said there's nothing there at the moment, and he's at a level that we should probably not be dealing with. Best contact man here is M. J. Wallace it appears.

Follow up:

1. Contact Wallace again in about two weeks.

Also, an appointment with Mr. Spruce at Ossining set up on this trip, Wednesday, November 11, 1959, at 3 o'clock.

The cost of this trip was \$109.69.

In all, I would consider the trip successful.

ed**INTEROFFICE
MEMORANDUM**

DATE 5 November 1959

SUBJECT Deferred Air Freight

TO Harlan E. Anderson

FROM Jim Myers

There are a certain number of days that the goods must be held (by law), before they can be released to consignee. There are also a limited number of cities to which a deferred air freight shipment can be made. The following is a list of these cities with the rates applicable in each case (pick up and delivery rates are the same as regular air freight shipment).

Boston to Chicago - \$6.15 per hundred pounds
Boston to Los Angeles - \$17.15 per hundred pounds
Boston to Milwaukee - \$6.15 per hundred pounds
Boston to San Francisco - \$18.40 per hundred pounds
Boston to San Diego - \$17.75 per hundred pounds

The following is a chart of the number of days a shipment must be held by the airline.

Leave Boston MONDAY released at destination Thursday.
Leave Boston TUESDAY released at destination Friday.
Leave Boston WEDNESDAY released at destination Sunday.
Leave Boston THURSDAY released at destination Monday.
Leave Boston FRIDAY released at destination Tuesday.
Leave Boston SATURDAY released at destination Wednesday.
Leave Boston SUNDAY released at destination Wednesday.

A shipment will reach its destination within two or three days at most except during rush seasons such as Christmas. In such a case, the shipment may be delayed several days. The shipping company has the option to delay deferred air freight shipments at h's own discretion. }

cc: Stan Olsen

ed
cc

INTEROFFICE MEMORANDUM

DATE November 2, 1959

SUBJECT Information on Shipment of
Memory Tester to Los Angeles

TO H. E. Anderson

FROM Jim Myers

Shipment by Air:

1. United Air Freight (United Airlines) LØ 7-4500
Leave Boston 10:00 P.M. (E.S.T.) Arrive Los Angeles
12:35 P.M. (P.C.T.)
Use Dave's Transport from Maynard to Airport.
Rates are: \$27.00 per 100 lbs. if total weight is
1000 lbs. or more
\$28.15 per 100 lbs if total weight is less than
1000 lbs.
Pick up charge about \$14.00.
Delivery charge 0.80 per 100 lbs.
Total cost \$291.00 for 1000 lbs. or more.
\$239.00 for less than 1000 lbs. 900
2. American Air Freight (American Airlines) LO 7-7300.
Schedule is same as above.
Rates are the same.

Shipment by Truck:

1. Transamerican Freight EX 6-4770
Will pick up and deliver.
Freight is transferred to another Truck (Pacific Inter-
mountain Express) in Chicago.
Delivery takes 7 to 10 days.
Rate is \$7.70 per 100 lbs.
Total Cost is \$69.30 (on a basis of 900 lbs.)
2. Roadway Express: DA 4-8100
Will pick up and deliver.
Freight is transferred to another truck (Interstate
Motor Lines) in Chicago.
Delivery takes 7-10 days.
Rate is \$11.36 per 100 lbs.
Total cost is \$102.24.

Shipment by Railroad:

1. Railway Express EM 9-9308
Will pick up and deliver.
Freight changes cars at Chicago.
Delivery takes at least 7 days.
Rate is \$24.25 per 100 lbs.
Total cost is \$218.25.

2. New York Central
Framingham to Los Angeles.
No pick up or delivery.
Routing is Framingham to St. Louis, change to Missouri Pacific, Texas Pacific and Southern Pacific Railroads to Los Angeles.
Freight must change cars in St. Louis only.
Delivery takes about 8-10 days.
Rate is \$14.20 per 100.
Total cost is \$113.60.

3. National Carloading and Distributing Co. HA 6-7610
Use their own freight car direct to Los Angeles.
Pick up and delivery included in rate (Clinton Auto Express.)
Delivery takes 8 days from Boston.
Rate is \$11.14 per 100 lbs.

4. Universal Carloading and Distributing Co. Tom Farrell HA 6-8017
Use their own freight car direct to Los Angeles.
Pick up and delivery included in rate.
Uses T.D. Mulhall Trucking Co. CE 7-0350
Delivery takes 7 days.
Rate is \$11.14 per 100 lbs. *TOTAL IS \$100.26.*

Cannot do.

Shipment by Furniture Movers:

1. Lindstrom Bros. (agents for United Van Lines) No 5-5049
Delivery takes about 10 days.
We would have to wait until they have a van ready to go to California.
Rate for anything over 800 lbs. is \$214.00.

2. D.W. Dunn Co. (Agents for Mayflower Lines) JA 2-3300
Delivery takes about 10-11 days.
We must wait until a van is loaded for California.
Rate is \$19.20 per 100 lbs.
Total cost is \$172.80.

5 November 1959

Telephone call to AMP, Inc.

Jon Padiman

H. E. Anderson

I spoke with Mr. Joseph Sweeney at AMP today and invited him to come to see our Memory Tester next week. He definitely will plan to be here or send someone. He will telephone me or you notifying us which day he will come. I told him any time after Tuesday would be fine.

He explained to me that they are definitely interested in coincident current memories and later they will be interested in other memories. They are working closely with General Ceramics Corporation, and in fact will probably borrow or rent some testing time on our tester at General Ceramics for their initial work. Mr. Sweeney says that their present volume of activity in this field does not justify having a tester available, but they are trying to determine what can be procured and what the specifications are at this time. This is so that when their volume of memory plane construction becomes large enough, they can then act quickly in getting what they need. Mr. Sweeney was a very nice person, extremely friendly and receptive toward discussing the subject.

COPY

November 3, 1959

INTEROFFICE MEMO FOR FILE
IBM - Ossining, New York

H.E. Anderson

Mr. Will Spruth telephoned today, November 2, regarding our building block equipment. He is now making up the capital equipment list for the new lab they plan to open in Peekskill in approximately two months. Dan Lawrence from Kingston had suggested that they really ought to include plans for some of our digital test equipment and Mr. Spruth telephoned me as a result of this recommendation.

I told him that we would contact him on Wednesday, November 4, to set up a firm date for coming down to show him the equipment and demonstrate it for him. Friday in general is a bad day for them. His telephone number is Wilson 1-7500, ext. 213. This is a location of IBM where Jim Casida and Harold Peterson initially started using our equipment. They are no longer there since they have moved to the new Mohansic Lab of IBM.

HEA/hl

COPY

100

INTEROFFICE MEMORANDUM

DATE November 2, 1959

SUBJECT Calls in Fort Wayne, Indiana, and
Chicago, Illinois

TO Walter Weeton, Jack Brown, Harlan E. Anderson

FROM Stan Olsen

FORT WAYNE, INDIANA

IT & T

Mr. Crimmel - He was sent down mainly to be polite and send me on my way, but Paul Eagle as I got the message that they had made a tentative decision to buy Epsco units, and they had also considered Ecco, and they have now bought a few Epsco units. Mr. Crimmel is in charge of reliability. When I realized what the situation was, I got to speaking seriously about the advantages of our equipment for their system, about its reliability, the fact that the units are truly system designed, and he finally started to get convinced and decided to have me see Charles Mason. Mason came down expecting to see me about ten minutes, and three hours later, he was thoroughly brain-washed. He then went back and worked on Paul Eagle. I then saw Mr. Eagle, who had not originally intended to see me at all. He is still pretty stubborn and is fixed with the idea that they are already committed to Epsco units. Then a little later, Mason brought down Mr. W.A. Focs. Now Focs had some pretty fixed ideas about computer logic, and only understood the differentiation of leading edge type logic, but after a little while of talking, they both got quite excited about our type of logic, how simple it is to work, how much more equipment they got for their dollar, and I really impressed them with the reliability, so that these two fellows who are responsible for turning out the equipment, are really excited about our equipment. Paul Eagle, who is in charge of the section, is still quite cool. Mr. Focs should be on our mailing list, and also I talked briefly to, Jim Ellis, who is at IT & T labs, should be placed on the mailing list.

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INTEROFFICE MEMORANDUM

DATE November 2, 1959

SUBJECT Calls (cont.) Page 2

TOW. Weeton, HE. Anderson, J. Brown

FROM Stanley Olsen

MAGNAVOX

Mr. A.J. Jacobson - I talked to him for about twenty minutes to a half hour, explaining our equipment; he was very happy, but has no immediate application. And on their phone, I talked to Mr. Gerard K. McAuliffe. He was very busy, is not doing anything in the digital line now, but is quite interested in our equipment and would like to be called on the next time we are out.

CHICAGO

WESTERN ELECTRIC

Mr. David Irwin - He said that I couldn't come out to see him at the moment, as he was too busy working on a proposal to Bell Labs, but that they were familiar with our equipment and they expected that they will be buying some equipment, not necessarily ours, between December 1, and January 1. My feeling is that we should really hit them during the month of November.

ARGONNE LABS

Mr. Stan Hanson - He was looking for equipment a while ago, and couldn't find it, so they decided to build their own. The system they're building uses some 21,000 transistors, and the equipment operates in the 2 to 4 megacycle range. Also talked to Dean McMillen, who has no interest at the moment. Both McMillen and Hanson feel that Andy had covered our equipment well during his demonstration and that they were quite familiar with what we had.

TELETYPE

Mr. B.S. Wray - He said he wasn't interested and that they make their own plug-in units now. These units operate with a half micro-second rise time.

John Peterson - He has some slight interest in the 500 KC line. Both Peterson and Wray were familiar with our equipment.

digital equipment corporation

MAYNARD, MASSACHUSETTS

**INTEROFFICE
MEMORANDUM**

DATE November 2, 1959

SUBJECT Calls (cont.) Page 3

TOW. Weeton, H.E. Anderson, J. Brown FROM Stan Olsen

TONI COMPANY

Mr. L.E. Taylor - He has no real interest at the moment, but wants to be kept up to date.

ADMIRAL CORPORATION - Spoke to several fellows there.

Mr. A.H. Markow - No interest. He now uses relays.

Mr. W. Leon Chick - Not in

Mr. A. Tash - Out; no interest in the equipment.

Mr. Dale H. Jaster - No interest, though he is familiar with our equipment.

ARMOUR COMPANY, Research Foundation

Mr. H. Tobinsky - He has no real interest, but wanted the information for his file.

Mr. Byron R. Wien - He has no interest right now. He made a survey at one time of different equipment and his survey is now over.

Mr. E.S. Schwartz - He has moved to another section, no doing digital work at this time.

Mr. D.C. Reukauff - No interest at the moment.

George Pajer - He is happy that he has all our equipment information, and has not need at the moment.

Prof. Blair - Prof. Blair should be put on our mailing list, and I couldn't get in touch with him. He is responsible for their lab facilities.

CONTINENTAL CAN

Mr. J. Babakitis -(Bab-ah-key-tis) - He is in the same office as Mr. K. Okada. This fellow really knows very little about digital techniques, but has a problem where he is going to bid on a particular system which includes a digital ratio circuit. Actually I guess you would call it a divider. It starts off with a one megacycle oscillator and then there is frequency divided to one kilocycle. These two signals are fed through gates which go into the first divider circuit, and the high frequency register is divided by the low frequency register; then a second set of gates go and do the same thing again. The two answers then are subtracted together. He spoke as if this would take two dividers, one adder and subtractor, when in reality, this can

**INTEROFFICE
MEMORANDUM**

DATE November 2, 1959

SUBJECT Calls (cont.) Page 4

TO W. Weeton, H.E. Anderson, J. Brown FROM Stan Olsen

be done with one divider that adds and subtracts, seeing that the three different things happen at three different times. What we ought to do is put this into a quick and dirty proposal in a form, where, if he would use our proposal, he would pretty much have to use our equipment; giving him only enough information so that he is committed to us, and yet the information he gets would apply only to our type equipment. I may have gotten the wrong impression, but it seems that he was out to pump us for all the information he could get and then go off and do the job himself. He doesn't quite seem to have the experience and know-how to do this, though.

VICTOR ADDING MACHINE

Bob Carlson - He said there is not much going on in their place, but he knows Ken and is well-versed on our equipment. Frank Goldstein and Robert Warman both work for him. These are all fellows on our mailing list.

GPE CONTROLS

Mr. Glass - He is up to date on our equipment, but has no interest at this time. The same thing is true of Mr. Blase. Mr. Schneider of their company, has moved to California with Librascope. He was their computer expert, so it might be well to try to find him at Librascope.

HALLICRAFTERS

Mr. B.A. Scalzitti - He actually wasn't working for Hallcrafters, though his name on our mailing list says "Hallcrafters"; He was working for Ampex at Hallcrafters.

Mr. Halm - He is up to date, but has no interest, and the other two men on the mailing list, Mr. Leopold Sternlicht, and Mr. Mueller, both have moved to Rome, New York, where Hallcrafters has another plant.

**INTEROFFICE
MEMORANDUM**

DATE November 2, 1959

SUBJECT Calls (cont.) Page 5

TO W. Weeton, H.E. Anderson, J. Brown

FROM Stan Olsen

INTERNATIONAL-HARVESTER

Mr. E. Peck - The first time I called, he was out; the second time he was at a meeting.

LAND-AIR

Mr. W.O. Cott - He has some slight interest in our equipment, but has nothing hot at the moment. I spoke to him about letting us in on the invitations to bid, as I vaguely remember that we had an invitation back about a year and a half ago.

SEIBERG

Mr. Anthony Day - He wants more information on a memory core tester, and he wants schematics of our units; that is, all the units that are used in a core tester.

STEWART-WARNER

Mr. Paul N. Haywood - He is up to date with our products, with no immediate interest.
Mr. Larson - He was out for the day.

MOTOROLA

Mr. N. Petrakos - Tried to get in touch with him, but he was out for the day.

Mr. Martin Cooper - He was also out.

Mr. Peter Leahy - He is familiar, but has no interest at the moment. This was also the story with Mr. E. Schimmel and Mr. Thomas Flisk.

Mr. M. Klingberg - He has a problem that is impossible for us to do, the way he wants it done. He has to divide by ten; he has a 60 KC signal, and he wants to get 6 KC out. He is now doing it with seven transistors, for about 75 dollars. He wants it done cheaper, that should be minus 40 degrees to 80 degrees C, and he wants to be able to do it with less transistors. I think he uses something like a Flip-flop on a ring counter right now.

Mr. B.M. Kroll - He is working on the same problem as Mr. Klingberg.

**INTEROFFICE
MEMORANDUM**

DATE November 2, 1959

SUBJECT Calls (cont.) Page 6

TO W.Weeton, H.E. Anderson, J. Brown FROM Stan Olsen

Mr. E.L.Roberts - He is no longer in digital work, but he referred me to Mr. Whitney Campbell. We should put him on our mailing list, and also send literature.

KELLOGG SWITCHBOARD - Called the three different plants of this company.

Electronics Division, West 51st Street

Incidentally, the phone operator was about one of the most un-cooperative persons I've come across. She felt that if she got you one, she was doing you a tremendous favor; to get more than one, was above and beyond the call of duty. When I tried to get the sixth person, she hung up on me.

Mr. LeRoy Anderson - He was out of town.

Mr. Richard Manesek - He was out.

Mr. Harry Ligotky - He was out, also.

Mr. Piszczek - The operator said she didn't know him, and by this time thought I was crazy.

Mr. Unseren - Finally got to talk to him. He has all our information, and was familiar with us, but has nothing hot at the moment.

South Harlem Street plant

Mr. Miller - He has nothing at the moment.

Mr. Maciulis - He has a problem where he wants to drive a Burroughs beam-switching tube. It's a Model No. 6701B. He wants to drive it at 100KC with a 50% duty factor, which is a 50 mil pulse. He seemed quite interested. I kind of went out on a limb and thought that our Current Driver might do it, but have really no idea. Let's see what we can do for this fellow.

Mr. John A. Quinn - He was out.

South Cicero Avenue plant

Mr. R.F. Clem - He was in the sales office and just wanted our information for his file. He says they are in competition with us, so we patted each other on the back and said good-bye.

November 2, 1959

Calls, (cont.) Page 7

W. Weston, H.E. Anderson, J. Brown

Stan Olsen

Mr. Harold E. Hoffman - He was not in.

By this time, I thought the West 51st operator might be cooled off, so I tried calling there again.

Mr. Grace - His line was busy.

Mr. Lamin - His main interest was in getting hold of our schematics.

Our Schematics

Several people on this trip, that I have noticed, perhaps you fellows have, too, like the Ecco type literature, where you get some idea of what the circuit is like. Our diagrams are quite inadequate to let the customer know just exactly what's in the package. Most people don't want to know what the values of the resistors are, and they really aren't out to copy, but they do want to know what's in the circuit. This might be something to think about. There were at least three, perhaps four or five, that mentioned this on this trip. I believe we ought to consider it.

COO**INTEROFFICE
MEMORANDUM**

DATE November 2, 1959

SUBJECT

TO Jack Atwood
Harlan Anderson
Wally Weeton

FROM Kenneth H. Olsen

One specification sheet which we are lacking badly is the description of our mounting panels. Very few people know what we have to offer in the mounting panels. There are three sizes:

1) 19" 2) 24" 3) 30"

with the following variations. The 19" is available with 5/8" spacing and 3/4" spacing. All are available with the wiring on the front or in the back. Pillars are available for the 19" size. Panel layouts or tracing paper are available for the 19" size.

I think this catalog sheet should have a photograph of each of the three sizes, one on top of the other and maybe the other size 19" panel. Then we should try to get all this information on one sheet and get it out in one of the next mailings.

1000

INTEROFFICE MEMORANDUM

DATE October 29, 1959

SUBJECT - COMPATIBILITY OF 10MC LINE AND 5MC LINE

TO Walter Weeton

FROM Jack Brown

Perhaps the best way to explain the limitations of the compatibility of the 10MC line with the 5MC line is first to set down the actual differences, second to explain the ramifications of these differences, third give some common examples of operations effected by mixing the two lines, and last to make some general statements.

A. Differences

1. The 10MC line is not as broad as the 5MC line.

In fact, at present, the 10MC line consists of only a crystal clock and a flip-flop which also contains two high speed gates.

2. Pulses for the 10MC units are shorter (35-40 musec instead of the 60-80 musec ones of the 5MC).
3. The transistor gates on the 10MC Flip-Flop use the 2N501 MADT fast transistor instead of the 2N393 MAT ones of the 5 MC Line.
4. The built in delay of the 10MC FF is shorter (40-60 musec instead of 80-100 musec for the 5MC FF).

B. Ramifications

1. A 10MC pulse can only drive 10MC transistor gates (MADT) with the one exception that the short (10MC) pulse can drive the 5MC Pulse Amplifier through normal 2N393 (MAT) transistor gate.

The reasons behind the restriction is that the 2N393 (MAT) gate is not fast enough to completely saturate when pulsed by a short 10MC pulse. The Pulse Amplifier is an exception because the input amplifier has such a high gain that its input gate need not completely saturate.

2. A 5MC pulse cannot be used to simultaneously sample and change a 10MC FF. Nor can a 5MC pulse be used to compliment a 10MC FF. The 5MC pulse can, however, be used to set and clear a 10MC FF as long as these pulse are separated by more than 0.1 (i.e. 10MC) musec.

digital equipment corporation

MAYNARD, MASSACHUSETTS

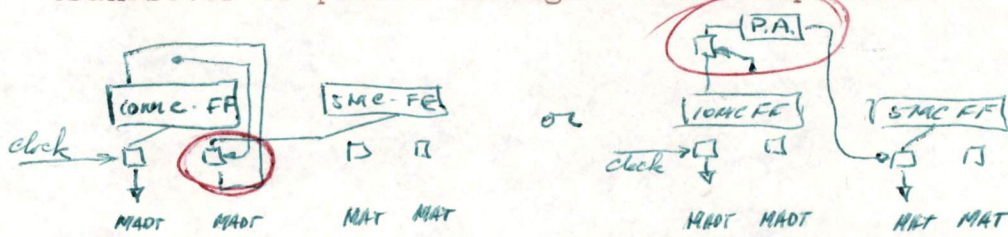
The reason behind these conditions is that the built in delay of the 10MC FF is only 40-60 musec while the pulse width of the 5MC pulse is broader (60-80 musec), The 5MC pulse will still be present as the 10MC FF begins to change states, and therefore one cannot obtain a reliable sample of the FF condition at the same time it is pulsed. The restriction on complimenting is for exactly the same reason, since the act of complimenting involves a sampling of the FF present condition. As long as one allows time for the 10MC FF to change states before it is sampled, however, there is no problem. Therefore to set and clear a 10MC FF with a 5MC pulse is permissable.

3. A 10MC pulse (such as the "P" pulse out of a 10MC FF), if it is to compliment, set, or clear a 5MC, must either be gated through by a high speed (MADT) transistor as opposed to a MAT transistor or passed through the 5MC Pulse Amplifier.

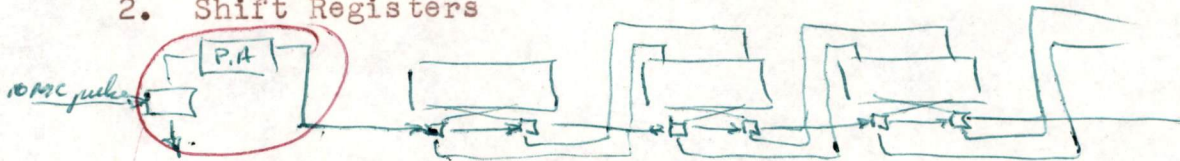
This restriction is brought about by the fact that a less speedy (5MC - MAT) transistor would not completely saturate and therefore trigger the next circuit.

C. Examples

1. Counters - In moving from a 10MC flip-flop to a 5MC flip-flop, the "P" pulse should be gated by a high speed MADT transistor or passed through a Pulse Amplifier.



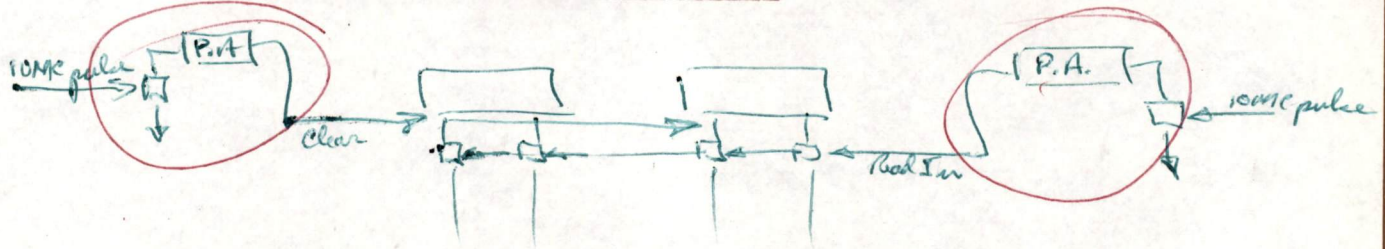
2. Shift Registers



If you must shift at a 10MC rate, all FF must be 10MC flip-flops.

If you shift at 5MC or less, you can use the 5MC flip-flops, but if the shift pulse is a narrow 10MC pulse it must first be passed through a Pulse Amplifier

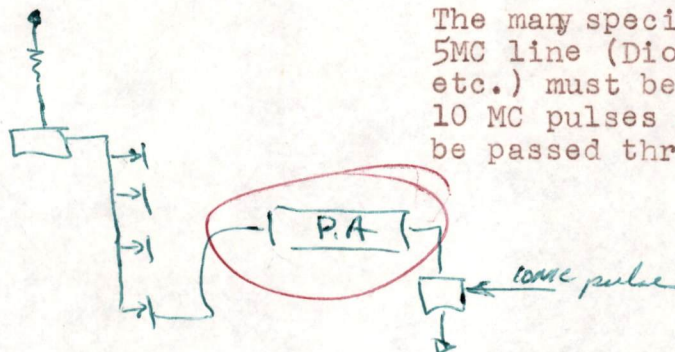
3. Clearing Read In and Setting



If FFs are 10MC FFs these operations may be performed by either 5MC pulses or 10MC pulses.

If FFs are 5MC FFs yet pulses are 10MC, the pulse must first be passed through a Pulse Amplifier.

4. General Logic Operations



The many special logic packages of the 5MC line (Diodes, Delays, Inverters, etc.) must be pulsed by 5MC pulse. If 10 MC pulses are used they must first be passed through 5MC Pulse Amplifier.

D. Conclusion

1. The 10MC and 5MC lines are most definitely compatible and "logic" can be performed at a 10MC rate.
2. More care must be taken in designing a mixed system, however, since the 10MC pulse cannot (except for the Pulse Amplifier) be used to trigger units in the 5MC line without first being converted to a 5MC pulse by passing it through a P.A.
3. 5MC pulse can be used to trigger the 10MC flip-flops as long as one does not attempt to sample at the same pulse time. (Remember this means no complimenting).
4. Voltage levels, power supplies, power connections, etc. are identical for both the 10MC and the 5MC lines.

4 Anderson

**INTEROFFICE
MEMORANDUM**

DATE 27 October 1959

SUBJECT

TO Sales

FROM Ted Johnson

If you haven't received a copy, 3C's has sent out a new price list for their M packs 100 kc. units. New flip-flop price is \$33. Call attention to their quantity discount schedule which I feel does not overly penalize the low dollar order customer. 5% for \$5,000 - \$25,000, 8% for \$25,000 - \$50,000, and 10% for \$50,000 - \$100,000.

On the subject of discount, the expected order from Livermore, David Lawrence Radiation Laboratory will be the first of a series of orders which should amount to a considerable number of units and probably into the quantity discount range. They are interested in knowing if we can grant a quantity discount on a cumulative basis. If so, how should I present our policy. It is my feeling that if this first system is successful, they will be building several others over the next year period.

I think I mentioned this in a previous memo, but it would be very desirable for me to receive the mating connectors for both the Test Equipment and System Building Blocks, so that I could attach this to my demonstration kit power supply and plug in an individual unit to check it out for minor repairs here in the office. I don't need anything elaborate, but it seems it would be very simple to do. I presently have one Flip-Flop 201 which isn't working properly.

Two of the patch cords which Ampex had on loan presented the previous problem of the metal remaining in the eyelet and breaking off at the end of the plastic plug.

Reference to a previous memo on equipment or supplies from Maynard. I have received duplicate invoices. Should I sign one of these and return it to the office or should I keep all the copies.

I would like to receive blank application note sheets that I could use in drawing out a specific customer problem here in the office.

H. Andersson

DEC
**INTEROFFICE
MEMORANDUM**

DATE 27 October 1959

SUBJECT APPLICATION NOTE

TO Sales

FROM Ted Johnson

The new core tester application note is the kind of literature I think we should be sending out for product application information. I would, however, like to see the actual set up detailed more than it is to illustrate the actual hook ups of the Test Equipment. It is not evident, for example, from the drawing just how the delay unit accomplishes your pulse width control. On the other hand, this type of preservation skips over details nicely and accomplishes the purpose of showing what the Test Equipment is intended to do.

H. Anderson

**INTEROFFICE
MEMORANDUM**

DATE 27 October 1959

SUBJECT

TO Harlan E. Anderson

FROM Ted Johnson

H.B.S.

Had lunch today with Bob Schmidt and Professor Paul Charrington. We discussed some of their plans for getting into the data processing area. They operate some kind of a division in Cincinnati which is working with Blue Cross - Blue Shield to handle their data processing needs if only as a semi-social call, it might be worth while to pay a visit to D'Arbeloff or have some of their people drop out to the plant in the very near future. Their connections, for example, might be a good way to check into the possibilities of computer applications in the medical electronics area. Charrington himself was very interested in the company and would be a very worth while contact.

H. Anderson

REC
**INTEROFFICE
MEMORANDUM**

DATE 27 October 1959

SUBJECT SALES CONTACTS

TO Sales

FROM Ted Johnson

In the coming week, plan to visit Holloman Air Force Base after a discussion with Gschwind. He called into the office and said they are considering using some System Building Blocks. He felt the information in the eight page brochure was inadequate. This seems strange in view of his early presumptions with the Test Equipment brochure, but offered to pay a visit and will be there next Thursday, October 29, 1959, early. At the same time plan to stop in at Sandia, Wednesday, October 28. Ed Dowling held no real hopes for accomplishing too much other than showing what new has been going on and possibly getting to talk out their problems and find some new approach to the organization penetration and purchase obstacle we have encountered at Sandia. If possible will drop into Phoenix on Friday to talk to General Electric and see what their present level of activity is. I will also have to be down to San Diego fairly shortly. Since I have not received a call from SRI I would assume that they want us to send along a Current Driver for their examination. As mentioned, they are interested in distributing along ten channels the logic required would be just to run through a counter distribute ten pulses in sequence along the ten lines as in our application notes. Example, they want to be able to control pulse width with delays. It seems to me that you ought to be able to get by with a single delay unit and inverter logic to control all these pulse widths unless they decide they want independent pulse width control over each of the ten pulses. If you have any drawing of how you would accomplish this you can send it along.

COO**INTEROFFICE
MEMORANDUM**

DATE October 27, 1959

SUBJECT

TO Harlan Anderson

FROM Kenneth H. Olsen

Badger Manufacturing Company, in Cambridge, Massachusetts, is a builder of large Chemical processing plants such as petroleum, citric acid, benzine, etc. Because they're so close, we should contact them to see if they need computers for control. I don't know if they just build hardware after someone else designs it or if they engineer it start to finish.

United Aircraft, in Hartford, has a weather contract for which they'll need computers. We have to get in that one also.

Have we checked with Curtis Wright in New Jersey to see if they need our equipment?

Have you noticed that Philco is claiming 213,000 arithmetic calculation per second for their Transact 2,000. They must be using overlap memories or else don't count but call that memory.

dec**INTEROFFICE
MEMORANDUM**

DATE 26 October 1959

SUBJECT CONTROL DATA CORPORATION

TO Kenneth H. Olsen

FROM Walter Weeton

Control Data Corporation's large computer, Type 1604, is apparently quite successful. To date they have sold five units. They are building a sixth one for their own use and a seventh one for stock. The basic price of the computer is approximately \$800,000. The computer uses a magnetic core memory which is 128 x 128 x 48 deep. There are two such memories in each of the computers and a six cycle time of the memory is 6.4 microsecond. However, the two memories are duplex which effectively cuts down the cycle time of the memory in two. The speed of addition is approximately one microsecond and their clock rate is $2\frac{1}{2}$ microseconds. The most usual installation includes four magnetic tape memories at a cost of approximately \$140,000 extra. They are planning on producing these units at the rate of one unit per month and they expect to be able to sell them in this rate. The company at the present time employs about 250 people in their digital computer division. They are apparently doing fairly well and one of companies was mentioned in the Fortune magazine in its last issue describing computer manufacturer's.

cc: Harlan E. Anderson

Western Electric - Greensboro

Was unable to see G. B. Manning but talked to him on the telephone. He was involved in twister work there quite similar to that being done at Bell Telephone Labs. Although his complete Tester has not been designed, he is certain he is going to use DEC for the logic and should be ordering very shortly (within the next week). Magnitude will be something like 6 flip flops, 6 diodes, a power supply, etc. Estimated value of around \$2000. There seemed to be some problem about how to physically mount the equipment. I should send him a letter describing our 1904 mounting panel and its cover chassis

Sales Report 10/29 - 10/22

Summary, Western Electric - North Carolina

There are three Western plants here in this area — one in Burlington, one in Greensboro, and one in Winston-Salem. Burlington's plant is independent, has its own purchasing as well as its production and engineering staff. The Greensboro plant, however, is not. It's purchasing is conducted at Winston-Salem. The Winston-Salem plant has not been visited as yet but is primarily the production of components such as gears, switches, etc. The two areas that we should be interested in is Greensboro and Burlington. In Greensboro, the contact is G. B. Manning, in Burlington it's either John Ballinger, Jack Moffet, or the purchasing agent S. T. Hearne. One other warning on Burlington. They have a special purchasing man by the name of Don Wolff whose job it is to intercept the salesman on their way in and make sure that they talk only to interested people.

The follow up for this should be:

1. Send schematics to Jack Moffet, 3 sets of our test equipment and our system blocks
2. Send to V. M. Hoover a little block diagram of the 10 megacycle count down to 100 cycles.

Sales Report 10/20/ - 10/22

Naval Research Laboratory - Washington D. C.

Interest breaks into 3 groups. Mr. W. B. Polland's group which is a group that has developed a computer of their own which is a high speed parallel machine. Herbert Peterson's group which is doing calculation work where they take data on tape recorders and take it into the labs and process it. Mr. Charles R. Phipps department. This department is primarily interested in studying digital techniques and making small special systems. Mr. Polland is quite familiar with our equipment and intends some day to get some but at the moment, however, he has no need. Two men working with him are Allen Bliagh and Irwin Levy. Mr. Charles R. Phipps and his side kick, Charles A. Bass, are familiar with our equipment but consider that the speed makes it overpriced. They would be very good prospects for a low speed line and should be contacted later. Mr. Herbert Peterson was out of town. Did not talk to him on this trip. He is what I would consider a hot prospect. One of his men by the name of Allen J. Rider said that they need to purchase a 10 bit high speed multiplier. He implied they are definitely going to buy it and they will need it around the end of the first quarter of next year. He was quite interested in equipment and I intend to make a block diagram for him and send it down, the faster the better as far as he's concerned and he realizes he may pay a good penny for it.

Follow up should be:

Make a block diagram of a high speed multiplier and send it to Mr. Rider

Cost of this trip was \$188.91

ced**INTEROFFICE
MEMORANDUM**

DATE 21 October 1959

SUBJECT Raytheon - Wayland, Massachusetts

TO File

FROM H. E. Anderson

Mr. Martin Schramm telephoned today and asked if someone could come over and talk to them about our building block equipment. He said they are just starting on a new sizable project known as PIN CUSHION for which our equipment is of potential interest. His questions on the telephone related to how much application consultation we would be able to give them in connection with our products. He also indicated that high speed was important to them. I have made a date to visit him on Thursday, October 22, and provide a demonstration of our equipment.

This project is classified, so I have arranged for my clearance to be sent over for this visit. I don't know whether this will be necessary in the future or not, but we can keep it in mind.

Mr. Schramm's extension is 2134, and an alternate name to be contacted is John Ward, same extension, at Raytheon in Wayland.

100

INTEROFFICE MEMORANDUM

DATE 19 October 1959

SUBJECT Grumman Aircraft, Bethpage, Long Island, WE 1-1500, Avionics Div.

TO Jack Brown

FROM W. Weeton

Contacted Mr. Harry Fadiman who is interested in our equipment and would like to set up a demonstration in about three weeks to six weeks. He has contacted his boss concerning this and they will either call us or we should call them. I suggested that we should probably call them in about three weeks to a month to remind them of it. This is in the Avionics Division. They appeared to have a problem in converting information from a gray to binary code or a binary to decimal code. ~~XXXX~~

cc: ✓ H. E. Anderson
Reminder File

dec**INTEROFFICE
MEMORANDUM**

DATE 19 October 1959

SUBJECT Kearfott Company

TO Jack Brown

FROM W. Weeton

Contacted Kearfott Company in Clifton, New Jersey - Gregory 2-1000. Meeting was somewhat handstrung by the appearance of many Air Force officers on an inspection trip, so I could not contact exactly the people I had wanted to. However, through Dr. L. J. Brady I was able to contact Mr. Frank Peer, Ext. 19, supervisor of production engineering, Plant 9. Mr. Peer is a mechanical engineer. They manufacture a digital encoder and decoder of some sort and are experiencing considerable difficulty in contact bounce specifications. This to me was reminiscent of the problems involved in contact bounce and current relays and I suggested that it might be possible to use our equipment in such a manner that specifications could be written to control these elements. Mr. Peer is very serious about this. They have purchased many thousands of dollars worth of equipment and none of it has been useful to them. Their customers are also very much involved in this and they would like to discuss with us how to go about measuring this unit. He is taking the information back to Mr. A. Lehmann who is a design engineer for digital units. Mr. Lehmann work for a Mr. Mike Nigro who is a supervisor of design engineering. These people are serious enough so that they will probably contact us within the next two weeks. If they do not do so, they have suggested that we contact them.

cc: ✓ H. E. Anderson
Reminder File

DEC**INTEROFFICE
MEMORANDUM**

DATE October 16, 1959

SUBJECT NAVAL SUPERSONIC LAB AT M.I.T.

TO FILE

FROM Harlan E. Anderson

Mr. Gordon Oro of the Naval Supersonic Lab at M.I.T. telephoned today. His telephone number is University 4-6900, Ext. 2623. He is interested in more information about our building blocks for a potential application connected with wind tunnel work. They wish to convert pressure measurements as measured with alphanon system into digital numbers which can then be put into a Bendix computer which they have. Essentially they want to measure the time between two pulses that come from an alphanon. This time is then proportional to pressure. They have a rotary stepping switch that goes between the alphanon and the measurement points so that they can use one alphanon for many pressure measurements in the wind tunnel.

The outputs they need going into the Bendix computer are from 0 to -20 volts. I suggested that we would send the literature to Mr. Oro and contact him in about a week to pursue the matter further.

cc: Reminder file 10/23

**INTEROFFICE
MEMORANDUM**

DATE October 12, 1959

SUBJECT Renegotiation

TO H.E. Anderson

FROM J.C. Conley

Some time ago you asked me to look into the question of renegotiation of government contracts, subcontracts and purchase orders. Specifically you wanted to know about the exemptions we might take, the information we should accumulate and when and what reports we should file with the Renegotiation Board.

I am making this report on the basis of information contained in the "Renegotiation Board Regulations", the "Renegotiation Board Annual Reports" for 1956, 1957 and 1958 and interviews with people in the Accounting Departments of Hermes Electronics and Baird Atomic Incorporated.

Recommendations

I suggest that no reports be submitted until renegotiable receipts and accruals reach that point beyond which financial reporting is mandatory.

At some appropriate time (now or at the beginning of the next fiscal year), a system for segregating and accumulating renegotiable sales should be installed. Unless it can be demonstrated that the use of the "Renegotiation Clause" in purchase orders sufficiently determines the use of sales by our customers, I recommend that a questionnaire be sent out with each invoice. This questionnaire, in the form of a self-addressed post card, would ask if the sale is renegotiable and what percentage if less than total is involved. The valuation of renegotiable sales could then be totaled month by month as the year progresses. If only information on purchase orders is involved, the renegotiable sales should still be accumulated period by period.

Discussion

In the broadest sense any sale made to an agency of the government, either by direct contract or indirectly through subcontracts and purchase orders or any sale of equipment which will be used to produce items sold to the government, which affects the national defense is subject to renegotiation by the Renegotiation Board.

.....over

To: H.E. Anderson
Subj: Renegotiation
Date: October 12, 1959

Page 2

The responsibility for determining which of its sales are renegotiable rests entirely with the company. Any method which is acceptable to the Renegotiation Board may be used. Renegotiable sales from prime contracts must be accumulated separately from those under subcontracts or purchase orders. It is the duty of the company to obtain the information necessary to determine customer use of a sale when such information is not determined at the time of sale.

When is a report required?

When the aggregate receipts and accruals for renegotiable sales, in one fiscal year, exceeds \$1,000,000 a report and financial statements must be submitted to the Renegotiation Board.

This \$1,000,000 floor is after any exemptions which are allowable have been deducted. In the case of our company the amount of our sales which would be considered renegotiable is reduced by various exclusions and exemptions.

These exemptions are as follows:

- 1) Any contracts or subcontracts under which the profits can be determined when the contract price is established, such as leases and license agreements are not subject to renegotiation. This exemption can only be received by having the government agency or prime contractor file a request with the Renegotiation Board.
- 2) Exemption of Standard Commercial Articles - all sales of standard commercial articles which meet the two following conditions may be deducted from renegotiable sales without application to the Board

Condition I - The article must be customarily maintained in stock or must be offered for sale in accordance with a price schedule regularly maintained by the contractor.

- a) An article is maintained in stock if it is kept in continuing inventory on a max-min or other acceptable inventory basis, and if sales orders are customarily filled from such supply.

Condition II - To be a standard commercial article, the non-renegotiable receipts or accruals from the sales of the article must aggregate at least 35 percent of the total receipts or accruals from such sales in the fiscal year under review.

.....over

digital equipment corporation

MAYNARD, MASSACHUSETTS

To: H.E. Anderson
Subj: Renegotiation
Date: October 12, 1959

Page 3

- 3) There are other less definite exemptions that might apply in specific cases. These are applied for by the company to the Renegotiation Board, with specific reference to the Contract involved.

What reports must be submitted?

Within 5 months after the end of the fiscal year, if aggregate renegotiable sales exceed \$1,000,000 after exemptions, the "Standard Form of Contractor's Report", RB form 1, and Exhibit 1 and 1 (a) - Statement of Income, RB form 1B, must be filed with the Renegotiation Board. (These forms and instruction sheets are attached to this report.)

The information needed to complete these forms is entirely within the framework of our present accounting records with the exception of the segregation of renegotiable and non-renegotiable sales. It would be best to accumulate this information as sales are completed rather than at year end. This can be done either by determining use of sale from the purchase order or from questionnaires sent to the customers.

This same information will serve as a basis for allocating expenses to renegotiable sales. What the Renegotiation Board is concerned with is the profit made on renegotiable sales. This means that all deductions used for tax purposes must be split up to show the portion applicable to renegotiable sales.

General

My talks with people in other companies indicate that much of renegotiation accounting is a seat of the pants affair. That is definite rulings are hard to get and issues are usually not decided unless actual renegotiation proceedings take place. The companies I talked to have not had a renegotiation case and so have not forced the issue on many of the questionable points of the Renegotiation Act.

J.C. Conley

JCC/hl

MEMO
**INTEROFFICE
MEMORANDUM**

DATE 9 October 1959

SUBJECT

TO Sales

FROM Ted Johnson

1. What procedure should be followed on loaning equipment from this office in the form of memo invoicing. Please send appropriate paper.
2. I have requested a Relay 801. Please see that this has been sent.
3. On shipments of equipment from Maynard, I have been getting three copies of the invoice. Should I sign one of these and return it as confirmation of receipt at this end, and if so which copy?
4. I will be in the San Francisco area tomorrow and Friday. Primarily meeting with Ampex, Lockheed, and Livermore. To date I have not received the requested information on high speed units and delay packages.

ced

INTEROFFICE MEMORANDUM

DATE 8 October 1959

SUBJECT New Low Speed Line Model Numbers

TO Kenneth Olsen

FROM H. E. Anderson

3000 Series (Digital Test Equipment)

- ³²⁰²~~3203~~ - Dual Flip-Flop (Counts, No Inverters)
- ³¹⁰¹~~3103~~ - Inverter (6 Inverters 4 Loads)
- 3401 - Clock
- 3301 - Delay
- 3110 - Diode Nor (2 circuits with 6 inputs each)
- 3410 - Pulse Generator
- 3601 - Pulse Amplifier
- 3201 - Flip-Flop (Counts, carries, and 2 Inverters)

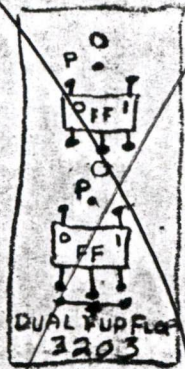
4000 Series (System Building Blocks)

- 4212 - Dual Flip-Flop (Counts, No Inverters)
- 4210 - Triple Flip-Flop (No counting)
- 4104 - Inverter (4 Inverters, 4 Loads)
- 4401 - Clock
- 4301 - Delay
- 4110 - Diode Nor (2 circuits with 6 inputs each)
- 4410 - Pulse Generator
- 4601 - Pulse Amplifier

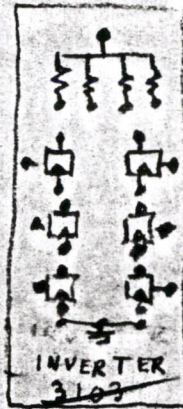
Front Panel for Test Equipment (3000 series) are shown on the attached drawing.

cc: Dick Best

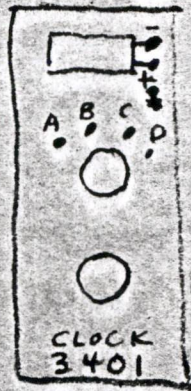
3000 Series Front Panels (PRELIMINARY)



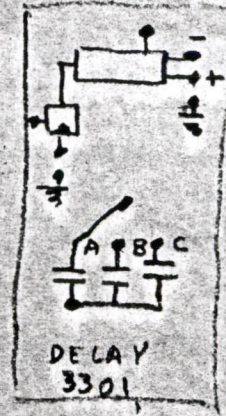
omit



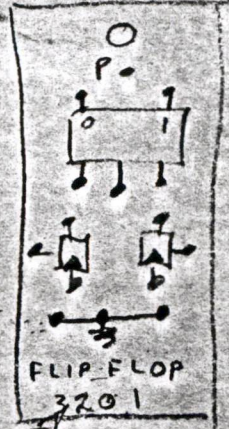
3101



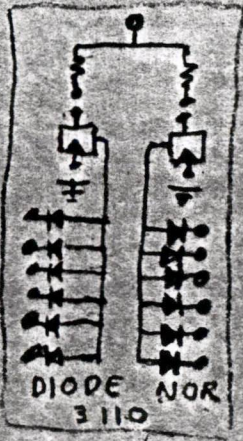
CLOCK
3401



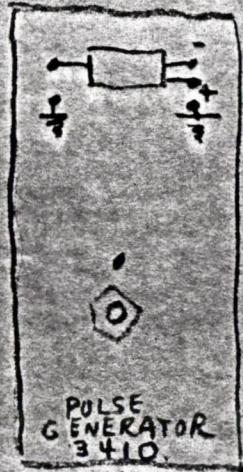
DELAY
3301



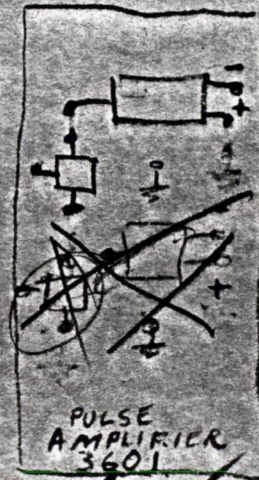
FLIP FLOP
3201



DIODE NOR
3110



PULSE
GENERATOR
3410



PULSE
AMPLIFIER
3601



DIODE POR
3111

omit

FRONT PANELS TO BE SCREENED IN BLUE

JA-00632

H. E. ANDERSON
10-8-59

ed
MEMODATE 8 October 1959TO ✓ Harlan Anderson FROM Kenneth H. Olsen

Have we checked the Space Technology Laboratories lately to see if there is any work we can do for them? May be a real push on Moose would help.

ed
**INTEROFFICE
MEMORANDUM**

DATE October 2, 1959

SUBJECT MERCHANT MARINE COMPUTER

TO Harlan Anderson

FROM Jack Brown

Talked with my friend about the computer the Merchant Marines want. The problem is that ship radar gets confused at short ranges and therefore many collisions have occurred in spite of radar. Therefore, the Merchant Marines want a computer to tell them how *close* two (or more) ships will pass to one another. They will provide all of the radar inputs to the computer and will probably be satisfied with one output—closest point of pass. The problem is one of extrapolating both ships' speeds and courses to a passing point. Naturally, this extrapolation must be upgraded with the addition of new data.

How fancy of an extrapolation is still undecided, perhaps just linear. How often the data is to be upgraded is still undetermined, as is the number of ships the computer must handle.

At present the Merchant Marines just want one prototype but it appears reasonable to expect a production run of about 20 to 25. Environmental specs are very loose. Accuracy required is something like $1\frac{1}{2}^0$ or 200 yards whichever is smaller. Cost is important and a ball park figure is something like 10K.

If we are interested, the man we should contact is Mr. Neidermeier, Acting Director of Research at the Maritime Administration who is located in the General Services and Administration Building in Washington.

By the way, we should say we got the lead from the newspaper or something, but definitely not through my friend.

de MEMODATE October 1, 1959TO H. ANDERSON & FILEFROM John B. BrownUNITED GAS

Telephoned Mr. R. W. Bains of United Gas Research Labs in Shreveport, La. (UN 1-4531) and learned that his application is to transfer recorded (I believe tape) data into commercially available computers. At present he is just collecting information both on digital building blocks and new computers. He expects to have a better idea of his problem in a month or two.



DEC**INTEROFFICE
MEMORANDUM**

DATE September 30, 1959

SUBJECT

TO Sales

FROM Wally Weeton

R. L. Kettenring, Instrument Laboratory Inc., Seattle Washington P.O. Box 4098 stopped in. He is one of the Managers there and he is quite interested in our product. These people and about 12 other companies involved in the Atomic Energy work in Idaho Falls are working with Mr. Kettenring and his group.

Mr. Robert L. Fillmore, Manager of the Machine Control Division of Minneapolis Honeywell Regulator Company in Minneapolis 8 Minn. 3753 fourth avenue south, stopped in and asked on our next trip to Minneapolis to give him a call.

DEC**INTEROFFICE
MEMORANDUM**

DATE September 29, 1959

SUBJECT

TO Sales

FROM Harlan Anderson

Mr. Larry Jasorka of the Western Electric Company was in this morning from Hawthorne Station Chicago 22, Illinois. Telephone number is LA 1-5000, Extension 5037. He works for Mr. Dave Erwin. They are very interested in obtaining new equipment. They are setting up a new area in Columbus. They have Burroughs old equipment and are now looking at other equipment that they can use for replacement. I think this would be well worth our while contacting immediately. Andy and I will try to do it while we are here this trip. Mr. Erwin may come down to the exhibit.

Mr. J. C. Haube of the Allegheny Ludlow Steel Corporation in Breckinridge Pennsylvania, Emerson 2-2400 stopped in. They are interested in purchasing a small digital computer or in making it. Actually it's a very small unit. What they really need is about 25 flip-flops and some logic blocks to put it together. He would like to talk to somebody about this. I told him we would contact him in the near future concerning this.

100

**INTEROFFICE
MEMORANDUM**

DATE September 29, 1959

SUBJECT

TO Sales

FROM Harlan Anderson

Wally Weston

1 { A gentlemen who apparently is a representative in the Chicago area stopped in and suggested that we see Marv Wiggins at Argonne National Laboratories, since he is a very key man in procurement of our type of equipment. Mr. Wiggins was here at the show yesterday, but did not stop in our booth as far as I know.

2 { Mr. Robert Carlson from Victor Adding Machine Company stopped into our booth and appears to be a rather promising customer. Wally knows him and will probably follow up on this. Carlson also talked to Ken Olsen at a transistor circuit meeting several years ago.

**INTEROFFICE
MEMORANDUM**

SUBJECT *Jack Brown*
TO Sales

DATE September 29, 1959

FROM Harlan Anderson

Mr. R. D. Godfrey I believe the man's name was, stopped into our booths from Leeds & Nothrup Company in Philadelphia Pennsylvania. He was a young fellow, not terribly familiar with digital techniques but yet asked alot of good questions and seemed to be an intelligent person whom we should keep in mind for future contacts.

*Reminder File for JBB
for Oct 5*

DEC**INTEROFFICE
MEMORANDUM**

DATE September 29, 1959

SUBJECT

TO Sales

FROM Walter Weeton

Mr. Steve A. Zarling of the Clark Controller Company, New Products Division 1146 East 150 2nd Street Cleveland Ohio, Zone 10. Telephone number, UL 1-2000. I talked to him somewhat about our equipment and he would like to have a Sales Engineer come out and talk with them whenever convenient. They are getting into the digital field and are looking for a relatively simple type of equipment to get them started.

REC**INTEROFFICE
MEMORANDUM**

DATE 21 September 1959

SUBJECT Sales

TO H. Anderson, W. Weeton, and
J. Brown

FROM Ted Johnson

1. Ampex Corporation. Called the engineer and will talk to them again early next week about a possible visit.
2. Autonetics. I checked with Quady and several other people on the rumor about a subcontractor using our equipment. This might have been Rese in a bid for a memory exercisor sometime back, or it might have been a possible consideration where they ended up using their Minute Man marginals for building up a small test set-up. I will be talking to them again and Quady said he would let me know of anything he hears on this business, but it doesn't look like a real situation at this point.
3. Gave a demonstration at Consolidated Electrodynamics Data Lab to a large number of people, and several engineers are trying to encourage the purchase of some of our test equipment.
4. Beckman Corporation. Following up the TWX message I received it turned out that this person is making a general inquiry after reviewing the literature and he will do what he can to direct me to interested parties at Beckman.
5. Aeronutronics. The time is not yet ripe to discuss tester possibilities with Tony Galopin. On my recent visit I talked with Warren Yancey who is excited about the equipment and there is a strong possibility of a test equipment purchase there.
6. Edwards Air Force Base. I talked with four different groups there. They were JPL, General Electric, NASA, and the Computing Center for the Air Force. This pretty well covers Edwards Air Force Base and the strongest possibility exists at the computing center.
7. Eminent sales trip. I will be in San Diego during the middle of the coming week. My main objective will be to cover the Naval Electronics Laboratory.
8. Please send a list of those Industrial Directories in which our company and product listings appear. By this I mean, Electronic Buyer's Guide, etc.
9. I would like to maintain an inventory of patch cords at the office. At the moment I would like to receive a sufficient number of patch cords to make one mounting panel full of equipment useful. This is for my office supply which I will arrange to loan on occasion and I would like to have you allocate a reasonable number of boxes,

digital equipment corporation

MAYNARD, MASSACHUSETTS

**ed
c****INTEROFFICE
MEMORANDUM**

DATE

SUBJECT

TO

FROM

Cont. 2

particularly of the shorter patch cords to have on hand if for example, we should underestimate the number of patch cords required on an order out here, as in the case of the recent Telemeter Magnetics order. Of that I haven't received notice of another patch cord order and was expecting this several weeks ago.

10. Mailing list names. I am finding the present system of recording mailing list names, and particularly the large post cards as being much more useful for contact work. On the other hand, it is dangerous to place too much emphasis on the frequency of inquiries and the checked indications of particular interest of these inquiries. On both the cards which checked have a salesman call, for far received, these prospects turned out to be of fairly minimal interest. That is they had no greater interest than a large number of the ordinary inquiries. The main problem in my mind is still to attract the interest of and get in contact with relatively few key people in each potential customer organization.
11. Future sales trips. I probably will be visiting the San Francisco area within the next two weeks. If I am able to do any effective advance work in finding key people at Boeing in Seattle, I expect to visit up there in the very near future and hope to arouse some interest at General Electric in Phoenix.
12. I would like to receive the notes on the TX-0. Mr. Anderson mentioned that there was only one available copy and I will send this back after reading it.
13. I would like to receive a written statement of our position regarding equipment leasing on a large scale, such as at U.S.N.O.T.S., whenever this might possibly be practical and available.
14. I purchased a triplet VON. This should ~~do~~ do the job I require very nicely and is considerably more compact than the recommended Simpson meter. By six volt and soldering iron, I assume you mean one with six volt output transformer. Is any particular yardage recommended? For convenient testing it might be useful to have individual test plugs for a test equipment package and a system building block package possible as a part of the demonstration kit set-up and feeding from the kit's power supply.

DEC**INTEROFFICE
MEMORANDUM**

DATE 16 September 1959

SUBJECT TXO

TO H. Anderson and B. Gurley

FROM Kenneth H. Olsen

Wes Clark called today and said that he got a letter from Dr. Sidney Winestein saying that he was impatiently waiting for a letter from us which Wes Clark said we would send a long time ago. Wes Clark convinved him that he needs a TXO for his work, which is like the electroencephalographic work at M.I.T.

I don't remember Wes Clark mentioning the name but we should apologetically get out on this. His address is Dr. Sidney Winestein, Director of Research, Department of Rehabilitation Research, Albert Einstein College of Medicine, East Chester Road and Morris Park Avenue, New York 61, New York. He is interested in a copy of the TXO so that he can run a TXO program. We should try to sell him a PDP-1, but we should also consider the possibility of changing the order code so it is exactly like the TX2.

DEC INTEROFFICE
MEMORANDUM

DATE 8 September 1959

SUBJECT PDP-1

TO H. Anderson

FROM T. Johnson

Please see that I receive any additional information on the new PDP-1, particularly decisions on which input-output equipment would be to use and possibly any extra catalogs you have on this equipment.

I will study the proposal I have received and will outline any questions I have on this information.

ed
**INTEROFFICE
MEMORANDUM**

DATE 3 September 1959

SUBJECT Harvey-Wells Design Philosophy

TO H. Anderson, W. Weeton,
J. Brown and T. Johnson

FROM Kenneth H. Olsen

We do not sell our equipment by attacking our competitors, but we should know their weaknesses. We all know they lack many of the common inhibitions in business practices. It is good also to mention that they also lack many of the engineering inhibitions. This is because they have not had very much experience and background in the field. A particularly interesting point is the output stage of their flip-flop. The 2N393 transistor is rated to dissipate 50 milliwatts peak, and so we take this as being the emergency conditions rating or the rating that the transistors should take under the worst possible conditions that can be conceived of, and so our flip-flop output transistors will dissipate just 48 milliwatts under these very extreme conditions. However, Harvey-Wells, because they made low impedance output stages and because they have a four volt supply, feel the worst conditions they can dissipate is 120 milliwatts, which would destroy the transistors instantly. Transistors, unlike vacuum tubes, have negligible margin of safety beyond their rated dissipation.

H. Anderson

DEC INTEROFFICE
MEMORANDUM

DATE 26 August 1959

SUBJECT Digital Equipment Corporation, 11

TO Sales FROM Ted Johnson

Talked with A. W. O'Sullivan, President, of new (1½ months) company in San Diego (La Jolla). Have 5 people. Strictly custom-built magnetic drums. Address, 7541 Eads, La Jolla. Glencourt 9-1724.

He said name was mistake. Did know of us. Proceeded to change the name as soon as they were incorporated. Advertised at WESCON as Digital Development Corporation. Two principles are O'Sullivan and Dick Stephenson. Both at Aeronutronics and Alwac.

Name is still too close to suit me.

Sales Report on Trip to New York City

Visited: Republic Aviation, 2 locations; Ford Instrument, Long Island City; Airbonr Instruments Lab, Melville, Long Island

Phoned: W. L. Maxson Company concerning request for bid they sent in week of 8/17/59.

Republic Aviation, Deer Park, Long Island

The three men ^{Kulba} to contact in Deer Park are J. Urbanki, Joe Murphy, and Nick ~~Galba~~. These are the men that have our equipment on consignment to investigate the feasibility of equipping their new laboratory in Farmingdale. They are pleased with the equipment and have made a decision that it is this equipment that they would like to buy. However, management has not approved the proposal yet, and they would like to have a letter from us mentioning some of our customers and their use so as to be a help in selling their proposal to their management. The pulse generator that they had was now functioning. The trouble turned out to be an intermittent capacitor on the input integrator to the pulse generator. I'd say we were in pretty good shape at this location.

Republic Aviation, Mineola, New York

In the Missile Lab, which is located in Mineola, New York, I visited Mr. Robert T. Williams who recently has sent in two inquiries for literature on our products. This call did not prove too fruitful. Williams is a Servo man and was only interested in our light drivers, and for his application ours was not suitable.

Airborne Instruments Laboratory, Melville, Long Island

This call took all morning and proved to be of no real value. Although we have received 13 requests in the last two weeks none of the key men were available for me to talk to, and the ones I did seemed to have little knowledge of this type of equipment. Shortly, within half a year, Airborne Instrument Lab will move to the Fairchild Engine Building in Deer Park. The head of the digital section there is Dr. Kentner and his assistant Sol Goldstone. While waiting there I noticed in their display rack the equipment they have for the Star Program, and this equipment consisted of building blocks which in appearance were very similar to ours except in smaller size. The significance of which I could not discover. Mr. Spector with whom I talked, however, indicated that Airborne Instruments may try to market these building blocks commercially.

Ford Instruments, Long Island City

This was perhaps my most fruitfull call on the trip. In many different departments there was interest expressed in our equipment with the one drawback of size and non-militarization. The most important complaint, however, was in size. They could not understand why we took so much room to put so little fundtion. They are fairly familiar with our products and Ted has done a good job before me. In the past, we have dealt with Building 3, I believe. On this trip, however, I met Mr. Maxwell Levy in Building 4 who was extremely

Cont. 2

interested in our equipment and would liked to have seen a demonstration but was going to be tied up for the day. This man should be contacted again sometime in the future.

Cal to W.L. Maxson Company

Mr. G. Richard evidently is the purchasing agent for W. L. Maxson. I quizzed him on the possibility of our bidding just our building blocks for the job as opposed to the entire system. He said that my call was premature, and that he had received no bids as yet and was acceptable to the idea of our bidding building block basis.

General Comments: It is my belief that to make appointments by phone call before the trip is well worth the money. Furthermore, that we should build up our road map inventory as rapidly as possible for planning trips before actually leaving DEC. The cost to the company for this trip was \$80.44.

dec**INTEROFFICE
MEMORANDUM**

DATE 14 August 1959

SUBJECT RETURN AUTHORIZATION

TO H. Anderson, S. Olsen, K. Olsen, FROM Walter Weeton
M. Sandler, D. Best, T. Johnson,
and J. Brown

One of the problems which we are beginning to run into more frequently is that of the equipment being returned to us for repair or replacement. In order to control this it is necessary to develop a normal flow of this equipment. When a customer requests a RETURN AUTHORIZATION for some of his equipment, the Sales Department should be checked with and a RETURN AUTHORIZATION number associated with this particular return. The Sales Department will keep a record of these RETURN AUTHORIZATIONS. The record will include the following data: the RETURN AUTHORIZATION number, the date of the RETURN AUTHORIZATION, the company name and address, the person in the company with who this was discussed, his phone number, a list of the equipment involved, action to be taken, the date and the name of the person who has requested the RETURN AUTHORIZATION, and when the equipment arrives at the company. The date the equipment is received will also be recorded on this form. A RETURN AUTHORIZATION number then should be given to the customer and the equipment should be returned to Digital Equipment Corporation with some packing slip referencing this number. When the equipment is received at DEC, the Sales Office should be notified and the equipment should be opened and turned over to Quality Control for complete testing and repair as necessary. When this is done, Quality Control will notify the Engineering Department of the problems involved routinely and it is suggested that they do this in their weekly Quality Control report. Engineering may then take any steps necessary to insure that this trouble does not develop in any future equipment. After the equipment has been fully tested and new test data sheets are made out they should be turned over to the Sales Department for return to the customer or whatever other disposition is decided on.

RETURN AUTHORIZATION

Return Authorization No. _____ Date _____

Company Name and Address:

Person Contacted _____ Phone No. _____

Equipment Involved _____

Description of Trouble _____

Date Equipment Received _____

Serial Nos. _____

Date of Purchase _____

Comments:

Signature _____

DEC 12 1959

**INTEROFFICE
MEMORANDUM**

DATE 12 August 1959

SUBJECT Schlumberger Corporation

TO Harlan Anderson

FROM Kenneth H. Olsen

The Schlumberger Corporation spends a million dollars a year in basic research and they have over a thousand employees making their logging equipment, and if they don't need a computer in their work I'd eat my teeth.

We better go down and talk to these people and see whether they can use a PDP-1.

DEC**INTEROFFICE
MEMORANDUM**

DATE August 10, 1959

SUBJECT Progress Report

TO Ken Olsen

FROM Nathan S. Bromberg

The Flexwriter

To date, the mechanical translator and punching operations have been isolated from the flexowriter. The punch has been electrically disconnected from the flexowriter and is being operated by DEC equipment. The same is true for the translator. Both of these units receive their driving power from the motor in the flexowriter. The signals required to drive the flexowriter translator and punch are developed in the following way:

The timing and the signals for the various solenoids are developed on our own logic. The timing is developed by using our standard delay units with external capacitors, connected in place of the ones given in the unit. The values of these capacitors are in the neighborhood of 6 microfarads in order to give the necessary range of about 20 to 50 milliseconds.

Standard inverters are used to drive Clare mercury relays, HGS-1009. One side of each relay coil is tied to the minus three volt supply. The other side is tied to the collector of an inverter. There is no load on the collector. The resistance of the coils in the relays is 600 ohms. When diode clamps were used in conjunction with the load, the relay coils stayed on, once the inverter had been stepped for 20 milliseconds. It was felt that small voltage drops across the diode clamp could keep the relay picked, once it had been initially tripped. The relays seem to be working satisfactorily without a collector load.

In order to avoid the necessity of going through any of the relays that are on the flexowriter at the present, the connections to the flexowriter were made directly across each coil. It was noted that each of the above units is connected by a amphenol type plug to the flexowriter. The wires into this plug come directly from either side of the coils in the translator and punch. These wires have been brought out in a temporary cable and the mercury relays are switching a 50 volt supply to these wires. The mechanical clutches have approximately a 10 millisecond delay between the time that the relay for the clutch has been stepped, and the time that the mechanical clutch has fully engaged the drive shaft to the translator or punch. It is for this reason that it is planned to send the binary code information and the signals to step the clutches simultaneously. The translator and punch clutches will be fully picked by the time the translator and punch shaft begin to rotate. For

DEC INTEROFFICE
MEMORANDUM

DATE August 10, 1959

SUBJECT Progress Report -- The Flexowriter - Page 2.

TO Ken Olsen FROM Nathan S. Bromberg

experimental purposes, a small delay has been inserted between the time that the decoding relays are pulsed and the time that the clutch relay is activated. In other words, we are making sure that the 8 decoding magnets have been set up before the clutch is pulsed. This is sort of a precaution which might be desirable if it does not slow down the overall operation of the flexowriter.

A rather simple way to handle the carriage return and tab operations is to use 2 standard diode gates, 1 pulse generator, and a few inverters. When a carriage return or tab shift operation was called for, the above equipment would generate a pulse which would set the hold-go flip-flop in the hold position. There is a contact which is closed when the carriage on the flexowriter comes to rest after either a carriage return or tab shift operation. A pulse generated by the closing on this contact would set the hold-go flip-flop into the go position.

To date, a driving panel has been constructed, consisting of the 10 mercury relays and associated circuitry. A simple logic driving panel has also been wired in with standard DEC equipment. There are damping networks across the contacts of the 50 volt side of the mercury relays. The flexowriter, which is on order, has damping networks across the punch magnets. There are also diodes across the flexowriter solenoids.

**de
ce****INTEROFFICE
MEMORANDUM**

DATE 17 July 1959

SUBJECT Visit from Galileo Corporation and
Republic Aviation ComputerTO ✓ H. Anderson, W. Weeton, Bi-Weekly, FROM Kenneth H. Olsen
Ken's fileVisit from Galileo Corporation

Mr. Barti of Galileo Corporation visited us on July 15, 1959 to discuss replacing an analog computer with a digital computer in an anti-aircraft tank which they are proposing to bid on for NATO. We told him that we felt it would be of no improvement to digitalize this computer and that our equipment would be too big and not rugged enough for the job. He is, however, interested in developing digital know-how and capability within the company and so they are very interested in buying our Test Equipment. I promised to send him literature on our memories when they are available. In a week or two we should follow up with a good sales letter to them.

Republic Aviation Computer

Republic Aviation Corporation needs a general purpose computer to try out various control techniques that would eventually be installed in airplanes. This computer would do such things as bombing control and navigation. We feel they need something like our PDP because this would give them the general purpose characteristics they are interested in. They have only about \$45,000 with which to buy the computer, but they do have more to buy analog to digital converters. This thing is not supposed to look like a computer but as a piece of Test Equipment for developing and proving systems. He gave me several formulas which I told him we would demonstrate the solution of on paper.

To: H.E. Anderson
From: John C. Conley
Date: July 2, 1959
Subject: Export Procedure

The official regulations and policies which govern exporting encompass, in one way or another, all phases of the selling and delivery operation. In broad terms these regulations are concerned with two operations, the securing of an export license and the shipping of materials out of the country.

As you know there are different types of licenses required for exporting. The license to be used is determined by two things, the country of destinations and the Department of Commerce classification of the item to be shipped. The commodity classification divides items into positive list and no-positive list commodities. Items which are not on the positive list may be shipped to all countries outside the Soviet Bloc under general license GRO. Items on the positive list require one of the validated licenses. At present it appears that the majority of our products are not on the positive list and may be shipped under a GRO license. A definite assessment of this cannot be made until we receive Schedule B from the Department of Commerce. The positive list is under constant surveillance and our products could appear there at any time.

The advantage of a general license is very great because application does not have to be made to the Department of Commerce. Any one qualifying for a general license may ship at any time merely by presenting a Shipper's Export Declaration to the customs official at a port of exportation. We have copies of this form and complete instructions for filling out and filing.

Validated licenses are a different story and involve much more, both on our part and on the part of the foreign buyer. The first difficulty is that only items with the same processing code and Schedule B number, from the Department of Commerce commodity lists, may be shipped under the same license. Conceivably 3 or more licenses might be required to make one complete shipment abroad.

In order to secure a validated license application must be in made to Washington. We have copies of the necessary forms and the procedure is outlined in the Comprehensive Export Schedule. The application must be accompanied by an Import Certificate from the buyer or a Single Transaction Statement depending on the commodity. Also photostates of letters or purchase orders from the buyer may be required. I have not as yet gotten the exact requirements for the different validated licenses. We also must have a complete description of the end use of our items, by the buyer, to accompany the application.

The second area, that of making the actual shipment, is more procedural and varies between types of licenses only with regard to paper work that must be presented to the customs officials. Markings on crates, shipping documents and clearing procedure are outlined in the Export Schedule. This is fairly straight forward and not of much trouble. Our problems would be mainly centered around choosing a means of shipment and securing insurance coverage. General Radio recommends air shipment, whenever possible, as the easiest, most reliable and usually cheapest.

Mr. DeBlois at General Radio offered the following information. He estimates 15-25% of list price will be added to the price for import duties and about 10% for shipping and insurance. He says that shipping F.O.B. factory eliminates legal and financial entanglements that often arise from overseas shipments. Mr. DeBlois has extended an invitation to me to visit him and hash out the details of an export shipment.

There are several short cuts that can be taken in the export procedure by utilizing agents on a fee basis. Freight forwarders in this country will handle all the details of shipment including quotes on freight rates; handling of shipment while in custody of carriers; advice concerning insurance coverage; furnish advice on customs requirements of foreign countries, weights, packing and marking of crates and preparation of necessary shipping papers. Overseas representatives may handle orders, import certificates and problems concerning service of products in the foreign country.

I am working on the various details of the export procedure and will get some estimates of fees from freight forwarders. I plan to visit Mr. DeBlois and get some information on overseas representatives. I feel sure that we have enough information to go ahead on any inquiries from abroad which may be of interest. The Field Office of the Department of Commerce assures me that they will give us any help we need and offer emergency service should we get backed into a corner.

**ed
c****INTEROFFICE
MEMORANDUM**

DATE June 29, 1959

SUBJECT Responsibilities of Mrs. Nancy Dawes and Mrs. Pat Reguera

TO Harlan Anderson

FROM Walter Weeton

The purpose of this letter is to formalize the responsibilities of Mrs. Nancy Dawes and Mrs. Pat Reguera. Pertaining to their activities in the Sales Department. The enclosed list is what I expect them to be responsible for.

Nancy

1. Letters
2. Quotes
3. Mail Sent (Signed & Mailed)
4. Telephone
5. Internal Correspondence
6. Price List
7. Keep field office up to date.
8. Travel arrangements
9. Customer Order Book
10. Calendar

Pat

1. Product Availability
2. Order Book by Order
3. Shipping Papers
4. Teletype Messages
5. Field Contact Reports
6. Expense Reports
7. File (Reminder File)

cc: Nancy
Pat
W. Weeton

MEMO

DATE June 25, 1959

TO Kenneth H. Olsen
Harland Anderson

FROM Henry J. Crouse

Pat Brown, Purchasing Agent of Waters Mfg. Co. in Wayland, passed on some information that may be of interest.

The NASA (National Aeronautics and Space Administration) is looking for prime and secondary contractors of electronics, who could be used in their area of work.

If this is of interest we could enter our name with the:

Procurement Officer NASA
1520 H Street N. W.
Washington 25, D. C.

The information was taken from an advertisement in Purchasing.

MEMO*Jack Brown*DATE 6/12/59TO K. Olsen
H. AndersonFROM T. JohnsonAmerican Standard, Systems Division
Plant #1Norwood, Mass.
Norwood 7-3320

They had solicited bids on a computer in connection with work on stabilized periscope for the Polairs missile. Die has been cast, apparently for Epsco but not sure. Time scale involved now is 5 months. Jim Hazelton checked to see if we could come into consideration at this point with negative reply. However, very interested in having reputable local source and we should call in next week to arrange visit to Mr. Harper (Project Engineer) and Mr. Dave Smith (Senior Digital Engineer). Our problem was 3 axis to 2 axis conversion. Other was real time accuracy. Good case for our services might still wield some power here.

560 Providence Highway

ced**INTEROFFICE
MEMORANDUM**

DATE June 10, 1959

SUBJECT ADVERTISING ACCOUNTS

TO Harlan E. Anderson

FROM Jack Atwood

On the basis of our discussion last night, I should like to recommend that the activities of my group be classified for accounting purposes as follows:

- 864 PUBLIC RELATIONS - activities specifically intended to facilitate the operation of the Corporation with respect to its dealings with present and potential customers, employees and stockholders and with other interested parties.
- 865 SALES PROMOTION - activities specifically intended to promote the acceptance and sale of the Corporation's products and services.
- 866 TECHNICAL INFORMATION - activities specifically intended to provide such information about the Corporation's products and services as may be required for their proper development, production or rendering, and utilization.

Under each of these main classifications might come five subclassifications, which would be sufficiently detailed for our purposes but sufficiently general to avoid the necessity for adding more and more subclassifications to meet specific situations.

- Sub. 0 General Expenses: supervisory, supplies, overhead, etc.
- Sub. 1 Expenses in connection with the preparation, production and dissemination of (appropriate) printed material.
- Sub. 2 Expenses in connection with the preparation, production and placement of advertisements in recognized media.
- Sub. 3 Expenses in connection with the preparation, production and dissemination of publicity in recognized media.
- Sub. 4 Expenses in connection with the preparations for and participation in meetings and conferences.
- Sub. 5 Expenses in connection with public relations (or sales promotion or technical information) activities outside the preceding classifications.

digital equipment corporation

MAYNARD, MASSACHUSETTS

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INTEROFFICE MEMORANDUM

DATE June 10, 1959

SUBJECT ADVERTISING ACCOUNTS con't

TO Harlan E. Anderson

FROM Jack Atwood

The account numbers would be used in this way, for example:

- An issue of "Digital Developments" would be 8641.
- A "Product Bulletin" should be 8651 but could be 8661.
- An "Applications Note" would be 8661.
- A Help Wanted Advertisement would be 8642.
- An employment application would be 8645.
- A trade show could be 8664.
- An instruction manual would be 8661.
- A new product release would be 8663.

The could be incorporated as a suffix to our job numbers in this fashion:

DAP-9256-41

or better:

D/9256-41

This would indicate to all hands that this was an "8641" or "Public Relations - Printed Material" job (the "86" portion of the account number being understood).

I think this system would prove very workable in our operation and also quite definitive from an accounting standpoint. And it is worded in such a way that neither Internal Revenue nor Government Contract Negotiators should find much to quarrel with.

000**INTEROFFICE
MEMORANDUM**

DATE May 5, 1959

SUBJECT Booth for Next Year

TO H. Anderson
S. Olsen
J. Atwood

FROM K. H. Olsen

Ramo Wooldridge has white tables with neat wrought iron legs which are very effective in their booth this year at the IRE Show. A variation of this which would be very useful for us would be high, fairly wide tables maybe 30" broad, made of Formica with skirts around the edge in walnut. The skirts might be 6" deep. Then coffee tables made the same way except white tops and white edges only 2" wide. Coffee tables are ideal for handing out literature and the white top tables are very good for equipment. A variation of this would be to have walnut top tables which would show off our white equipment better, and white coffee tables for our literature.

The design trend seems to be going from the shadow box type to what T.I.C. and Ramo Wooldridge have which is a set of panels set up from the back only, about 5 feet tall and behind that, with a dark background, the name of the company in white, well illuminated.

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**INTEROFFICE
MEMORANDUM**

DATE March 13, 1959

SUBJECT 10 megacycle product line

TO Sales

FROM Ted Johnson

The following people expressed an interest in our developments and future availability of 10 megacycle building blocks. These names are by no means the complete listing of people who have expressed interest. The list is not meant to be anything but a personal mailing list when we do make a decision on 10 megacycles.

1. Bernard Quinn - Johns Hopkins University
2. Jim Nottingham - IBM - Kingston
3. George Riech - I. T. & T.
4. Bob Thomason - China Lake, California - USNOTS
5. J. H. Foster - Erie Resistor (disregard)
6. Benson Electronics - St. Louis, Missouri - (no record of individuals name)
7. Jim Kiseda - IBM - (only general interest)
8. Richard Genke - Bell Telephone Laboratories

In addition to the names listed (and please note any names that may be recalled on this subject) the following list is a few of the people I think would be interested in this development and also where it would be helpful particularly to use this as a sales opener.

1. Any group at IBM
2. Joe Stern - STL
3. Carlos Rossi - Remington Rand
4. Jim Ruff - Bell Telephone Laboratories
5. Groups at JPL
6. Rese Engineering

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**INTEROFFICE
MEMORANDUM**

DATE March 13, 1959

SUBJECT 10 megacycle product line

TO Sales

FROM Ted Johnson

7. Stabler at General Electric
8. Jack Raffel in film work at Lincoln Laboratories
9. Naval Electronics Laboratories - San Diego
10. National Security Agency
11. RCA - Camden
12. And others

It appears that 10 megacycle equipment will be produced in the system building block line only due to the problem of lead lengths at grounding problems in the Test Equipment. If this is the case prospective customers for 10 megacycle equipment are those people who could use our systems units for construction or for semi-permanent or permanent test equipment set-ups. This would break down into:

1. Government Research and development facilities
2. Production test groups of large computing companies
3. Any small size or medium size company who presently would turn to us as a source of systems components (building blocks).

Because of the penetration problem in our market I think we will always be left with the problem of making these product decisions largely on the basis of our own knowledge and estimation of levels of development in the industry as a whole. It is usually the case that no one person presents an accurate bench mark for the potential building blocks although the latter would conceivably be more general to any development program and therefore more permissive of market measurement by us.

CONTENTS OF FILES

File 1 - Drawer 1

Daily Shipments
Shipping Folder
Order Books
Railway Express Books
Air Express Folder
Backlog Sheets

File 1 - Drawer 2

Quotations
Proposals
 Bendix Radio
 Shoran
 M.I.T. Adder Proposal and Notes
 R.C.A. Memory Tester Type 1510
 I.T.T. Proposal
 Adder Masters
 Memory Masters
 Saber M.I.T., Lincoln Laboratory
 I.T.T. Masters
Maintenance
General Sales
Government Sales
Sales Representatives
Sales Representative - Gerald B. Miller Company
Sales Trip Reports
West Coast Branch Office

File 1 - Drawer 3

Empty

File 1 - Drawer 4

Stencils

File 2 - Drawer 1

Refused Quotation Requests
Hot Prospects
Customer List
Subcontracting
Customer Folders A - G

File 2 - Drawer 2

Customer Folders H - P

File 2 - Drawer 3

Customer Folders R - W

File 2 - Drawer 4

Miscellaneous Letter File

File 3 - Drawer 1

Master Letter File
Western Union Book

File 3 - Drawer 2

Test Data Sheets
Old Railway Express Books

File 3 - Drawer 3

Pricing Folder
M.I.T. Computation Book
Competition File
Automated Controls
Avco
Burroughs
C. G. Electronics Company
Computer Measurements
Computer Control
Daystrom
Dynamic Research
Eeco
Electropulse
Epsco
Farranti Electric Limited
General Mills
Harvey-Wells
Kellogg Switchboard & Supply Company
Mark Electronics
M F Electronics Company
Magtrol
Nader
Navcor
Packard-Bell
Philco
Rese Engineering
Sprague
Sylvania Electronic Systems
Triple T
Walkirt
Wang Laboratories

File 3- Drawer 4

Travel
Time Tables & Transportation
Travel
Maps & Time Tables
Maps of Cities
Official Airline Guide
Air Travelers Guide

digital

EQUIPMENT
CORPORATION
MAYNARD, MASSACHUSETTS

Nancy -

Wouldn't you like this
in your files? We have
nothing else on this man.

J.R.

REFERENCES



THE RAMO-WOOLDRIDGE CORPORATION
GUIDED MISSILE RESEARCH DIVISION
P. O. BOX 45564 AIRPORT STATION • LOS ANGELES 45, CALIFORNIA • OREGON 8-0311 • ORCHARD 2-0171

February 19, 1958

Mr. Harlan E. Anderson
No. 1 Peter Spring Road
Concord, Massachusetts

Dear Mr. Anderson:

Thank you for your comments relative to
Mr. Litsios' application for a Ramo-Wooldridge
Fellowship. This information was very helpful and
we are most appreciative of your courtesy and
assistance.

Sincerely,

R. F. Mettler

R. F. Mettler
Chairman
Ramo-Wooldridge Fellowship Committee

RFM:fb

Dec. 24, 1957

Dear Harlan,

As you can see by the enclosed reference blank I am applying for a Ramo-Wooldridge Fellowship. I would appreciate it very much if you could be one of my references. The fellowship provides for one year graduate study in Systems Engineering at MIT or Cal Tech. If you have any questions or if you want to say yes or no to my request you can reach me on ext. 126.

It was nice running into you in Washington. I received your Christmas card. My wife and I would like to wish you and your family a Merry Christmas and a Happy New Year. I am looking forward to hearing from you.

Yours truly,

Socco

December 30, 1957

Mr. Socrates Litsios
404 Massachusetts Avenue
Arlington, Massachusetts

Dear Socco;

It was a pleasure to fill out your reference blank
for a Ramo Wooldridge fellowship and forward it to them.

Best of luck.

Sincerely,

Harlan E. Anderson

HEA/jef

Mr. Litsios worked with me for a period of approximately one year at MIT Lincoln Laboratory. During this time I found him to be an intelligent and cooperative individual. He is capable of doing original thinking. His experience at Lincoln Laboratory was primarily from a mathematical slant as opposed to a more engineering viewpoint. This was probably due to the nature of his job rather than a lack of ability along ^{equipment} engineering lines.

He has demonstrated ~~his~~ his ability to sell his ideas ^{to others} only to a moderate degree. Perhaps his age and lack of ~~his~~ wide experience have ~~been~~ restrained him along these lines. He seems to have his feet on the ground technically ^{however} and this is probably more important.

Scholastically, I understand his past record has been quite outstanding and I would expect him to be an excellent student in the future. His personality and appearance are both excellent. His cooperation and ability to ~~get along~~ ^{deal effectively} with others are also excellent.

I would rate him in the upper 10% of individuals with similar background whom I have supervised.

~~The~~ Graduate study in systems engineering would ~~be~~ help Mr. Litsios' long range career considerably. It would tend to round out his background nicely. I think that his promise for graduate study and research ~~is~~ is excellent.

I am very happy to make an unqualified
recommendation of Mr. Litcher for a ~~the~~ Lamo-
Woodbridge fellowship.