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Folder Record

Title: Ken Olsen Collection

Author: Olsen, Kenneth H.

Arrangement: Series I: Letters to/Letters from

Imprint: 1968

Subjects:

Description: Two folders

Notes:

Summary: Mar 21 to A.I. Llewelyn, British Ministry of Technology: describing plans for expansion of Reading manufacturing operation to create a Special Systems Group to do European work and also to manufacture PDP-8/I and PDP-9 with a majority of British content

March 29, 1968

Mr. Morris L. Norfleet
Director of Research & Program Development
Morehead State University
Morehead, Kentucky 40351

Dear Mr. Norfleet:

C Thank you for your letter of March 4, 1968, to Mr. Olsen mentioning the CAI project being conducted at Morehead State University.

I have heard excellent reports of the project and would appreciate your sending the portfolio describing accomplishments and plans.

O Our efforts in the area of computers in education have been more closely related to Computer Extended Instruction, with secondary school students learning to use the computer as a tool for solving math and science problems. Our small computers (PDP-8, PDP-8/S and PDP-8/I) are also used by vocational schools for courses in Computer Science and by colleges and universities for any number of research projects including several in the field of CAI.

P Enclosed is a brochure describing our "hands-on" approach to computers in the classroom and a brief write-up on FOCAL, our new conversational language. If you would like further information about our computers, their uses or our new leasing plans for the PDP-8/S, please contact me.

Y I am looking forward to hearing from you.

Sincerely,

(Mrs.) Joan K. Fine
Education Applications

cc: Kenneth H. Olsen

JKF/mc

Enclosures

digital

March 29, 1968

Mr. Morris L. Norfleet
Director of Research & Program Development
Morehead State University
Morehead, Kentucky 40351

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I am looking forward to hearing from you.

Sincerely,

Joan K. Fine
(Mrs.) Joan K. Fine
Education Applications

cc: Kenneth H. Olsen

JKF/mc

Enclosures

Original sent to George Rice to answer ^{3/8}

MOREHEAD STATE UNIVERSITY

MOREHEAD, KENTUCKY 40351



March 4, 1968

Mr. Kenneth Olhson, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Mr. Olhson:

Our President of Morehead State University, Dr. Adron Doran, passed your name to me as being a person who was highly interested in the project that we are conducting here at Morehead State University and in eastern Kentucky with Computer Assisted Instruction.

We have just expanded this program to go out into ten rural schools in the Appalachian area of eastern Kentucky. We find that this has great potentiality for future development and taking up-to-date curricular materials to the most remote and isolated school systems within our region.

If you have further interest in this project, I shall look forward to hearing from you at which time I shall send you the complete portfolio on what has been done and what is being planned at this time.

Yours truly,

A handwritten signature in cursive script that reads "Morris L. Norfleet".

Morris L. Norfleet
Director of Research and Program Development

MLN/gld

copy sent to Gerg Wood 4/2
read this to Gerg Wood 4/2

The Commonwealth of Massachusetts



OFFICE OF THE DIRECTOR
DIVISION OF WATER
POLLUTION CONTROL

Water Resources Commission
State Office Building, Government Center
100 Cambridge Street, Boston 02202

March 29, 1968

Mr. Ken Olsen, President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

RE: MAYNARD
Digital Equipment Corp.
Industrial Waste Treatment

Dear Sir:

We refer to the letter from this Division dated March 15, 1968 regarding the approval of the preliminary report by Lancy Laboratories on the proposed treatment of your metal plating wastes.

Complete oxidation of cyanides to N_2 and CO_2 will be required if treated wastes are to be discharged to the stream. If permission is received from Maynard for discharge of your wastes to the sewer, this Division will permit a cyanide concentration in the rinse waters of 1 mg/L. This may not be construed to signify any change in our requirements for toxic metals.

Very truly yours,

A handwritten signature in blue ink that reads "Thomas C. McMahon".

Thomas C. McMahon
Director

TCM/AFF/lb

cc: John J. Martin, Jr.
Lancy Laboratories
60 Connolly Parkway,
Hamden, Connecticut 06514

Kevin T. Spratt, Supt.
Dept. of Public Works
Maynard, Mass.

Whitman & Howard
89 Broad Street
Boston, Mass.

digital

March 28, 1968

Mr. Kevin Spratt, Superintendent
Department of Public Works
Maynard, Massachusetts 01754

Dear Mr. Spratt:

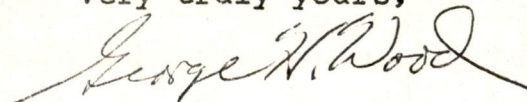
In reference to the State Water Resources Commission's letter of March 15, 1968 and a telephone conversation with you, Mr. Thaddeus Zeleski and John Martin concerning that letter, my understanding of the waste treatment situation is as follows.

Digital's responsibility for proper waste treatment is to the town of Maynard. On the basis of our proposal, we have received permission to connect to the sanitary drain. Additional future requirements for control or treatment would come from your department and be requested through John Martin, Lancy Laboratories, Inc.

Realizing that the town of Maynard has a responsibility to the State, we will cooperate in any way so as to prevent any intolerable situations at your waste treatment plant, or in response to any future additional requirements imposed upon you by the State.

Please let me know if I am in error in this understanding.

Very truly yours,



George H. Wood
Project Manager

GHW/mm

CC: John Martin, Lancy Laboratories, Inc.
Ken Olsen, President

digital

INTEROFFICE MEMORANDUM

DATE: March 28, 1968

SUBJECT: Letter from State Water Resources Commission

TO: Ken Olsen

FROM: George Wood

I received the copy of the March 15, 1968 letter to you from the State Water Resources Commission and have since discussed it's contents with John Martin (our consultant), Kevin Spratt (Maynard public works) and Thaddeus Zaleski of Whitman & Howard (consultants to the town of Maynard.)

The letter should not have been sent to us but more properly to the town of Maynard. We only have to satisfy the town. They in turn have to satisfy the State, because their sewage treatment plan discharges into the Assebet River.

Based on our proposal to the town, we have already received permission to connect to the sanitary drain. They may at any time in the future request that we add additional monitoring controls for treatment tanks, but for the present they feel our system is completely adequate.

Enclosed is a copy of a letter to Kevin Spratt which relates to his telephone conversation with me on March 27, 1968 and essentially states our intention to cooperate.

The letter from the Water Resources Commission does not require a reply.

George

mm

Original sent to George Wood for answer ^{3/26}



OFFICE OF THE DIRECTOR
DIVISION OF WATER
POLLUTION CONTROL

The Commonwealth of Massachusetts

Water Resources Commission
State Office Building, Government Center
100 Cambridge Street, Boston 02202

March 15, 1968

Ken Olson, President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts

RE: MAYNARD
Digital Equipment Corp.
Industrial Waste Treatment

Dear Sir:

The Division of Water Pollution Control has reviewed a preliminary engineering report prepared by Lancy Laboratories on the proposed treatment of the industrial wastewaters.

The Digital Equipment Corporation proposes to install finishing facilities consisting of alkalies and acids, used in the preparation of metals for plating, and plating solutions of copper sulfate, copper pyrophosphate, gold cyanide, tin lead and ammonium persulfate etch solutions with water rinses after the various processing solutions.

It is proposed to discharge the wastewaters to the municipal system after the following pre-treatment of the wastewaters. The spent acid and alkalies will be stored in separate collecting tanks and pumped at a rate of $\frac{1}{2}$ gallon per minute (gpm) to a flashmixer. The rinse waters will also go to the flashmixer and the pH adjusted between 5.5 and 9.0 before being discharged to the municipal sewer.

The proposed pre-treatment of the spent baths and drag out wastewater is summarized below:

Spent Baths

Acid and alkalies

Ammonium persulfate

Hydrofluoric acid

Proposed Treatment

Collecting tanks and
neutralization to pH 5.5 -
9.0

Patented process; inert
copper sold as by-product

Treated with lime

Drag - Out

Gold cyanide plating

Copper pyrophosphate

Ammonium persulfate

Miscellaneous

Floor spills, tank leakage
or accidental overflow

Proposed Treatment

Drag - out tanks with
return to gold solutions

Precipitated in acidified
stagnant rinse, rinse
neutralized pH 5.5 - 9.0

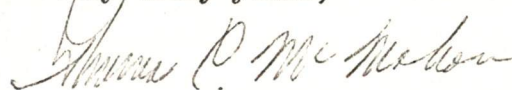
None or same manner as
concentrated spent per-
sulphate pollution

to alkali collecting tank

The Division approves the preliminary report subject to the following conditions:

1. The report indicates that it might be possible to eliminate the persulphate solutions which would reduce the amount of copper discharged to the sewer. If these alternate methods are unsuccessful a large holding tank and reactor should be added to treat these rinse waters in the same manner as the concentrated spent sulphate solutions.
2. The cyanides from the dilute drag out tank should be completely oxidized to nitrogen and carbon dioxide.
3. If the wastes discharged to the sewer are suspected of causing any problems at the treatment plant, it will be the responsibility of Digital Equipment Corporation to further treat these wastewaters.

Very truly yours,



Thomas C. McMahon
Director

TCM/HB/1b

cc: John J. Martin, Jr.
Lancy Laboratories
60 Connolly Parkway
Hamden, Connecticut 06514

Kevin T. Spratt, Superintendent
Department of Public Works
Maynard, Mass.

Whitman & Howard
89 Broad Street
Boston, Mass.

March 26, 1968

C
O
P
Y

Science Associates, Inc.
601 Easy Street
Garland, Texas 75040

Gentlemen:

We were interested in the Spheratron information display exhibit at the IEEE Show last week.

We feel we may have a use for one of these units, and would like very much to receive catalog and pricing information.

Very truly yours,

Kenneth H. Olsen

KHO:ecc

K. H. OLSEN

1/24/68

Tom Stockebrand:

Has anyone carried on correspondence with Mr. Ott? Will you please answer this letter if it is necessary and send me a copy for file.

Ken

800

10.00

March 25, 1968

Mr. Owen J. Ott, Manager
Engineering Department
Data-Control Systems, Inc.
East Liberty Street
Danbury, Connecticut

Dear Mr. Ott:

I was as excited as you were after our meeting in January. After working the project through with various individuals who would actually approve projects and work out the details, however, I found a lack of continued interest. I made another pass recently and found the case to be essentially the same:

1. With respect to the short-run board fabrication, the costs to convert your system to our boards and the fact that we have in-house computing capability and NC drilling, make it unreasonable to pursue the item further.

2. We are a project oriented company. The list of projects with more immediate (though perhaps not greater) payoffs seems to us to preclude consideration of the somewhat more expensive long term digital-video disc system. Further, we try to sell basic products which others can buy and turn to use in a multiplicity of specialized applications. The disk is such a basic system; the electronics package could be worked out by you as an OEM and sold to a market of your own generation.

Sincerely yours,

Tom Stockebrand
Process Engineer

TS:bt

cc: ~~Ken~~ Olsen

^{1/24}
Tom Stockbrad
to answer

DATA-CONTROL SYSTEMS INC.
EAST LIBERTY STREET
DANBURY, CONNECTICUT



January 9, 1968
(dict. 1/5/68)

Mr. Kenneth H. Olsen
President
Digital Equipment Co.
146 Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

Please accept my sincere thanks for the stimulating meeting you arranged for me last week. I was most impressed with the caliber of the people I met and was also very much intrigued by the possibilities that might be opened by cooperative ventures.

It seems certain that we would be able to increase the storage density of digital data on both tape and disc systems, and by factors of three or more, making it an attractive program provided that you are not constrained by IBM compatibility. We would be happy to show you production equipment similar to what we would propose to supply for the high density storage application.

The automatic fabrication of short run circuit boards on a quick reaction basis might also be of value to you although it would require some software revisions to make it compatible with your card configuration. However, we would be willing to make these revisions should it be economically justifiable.

Perhaps the most interesting topic we discussed came up after the formal meeting and was related to the possible use of your mini-disc memory as both a digital and analog storage device in display systems. Although it might involve a fairly considerable engineering effort, it is possible to store both wirephoto pictures and teletype text on the disc and output a video signal for CATV systems or television broadcast stations (consisting of news pictures, text, and even voice if desired). The market for such a device would be considerable, both for memories and associated digital equipment and the analog equipment we would supply.

DATA-CONTROL SYSTEMS INC., EAST LIBERTY STREET, DANBURY, CONNECTICUT

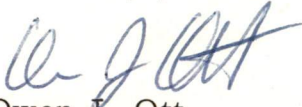
Mr. Kenneth H. Olsen

-2-

January 9, 1968

There are undoubtedly other areas in which our skills would complement yours and I certainly hope we may have a chance to explore them. In the meantime, I hope that some of your people will visit our facilities in Danbury to become more fully acquainted with our capabilities and to discuss, in somewhat more detail, the three projects I have outlined above.

Sincerely yours,



Owen J. Ott
Manager
Engineering Dept.

n

March 25, 1968

C
O
P
Y

Mr. James M. McGowan
Vice President and General Manager
Systems Division
General Precision Systems, Inc.
Link Group
Binghamton, New York 13902

Dear Mr. McGowan:

We are pleased to hear of your interest in a license agreement with DEC for building computers. I would like very much to discuss this with you at your convenience. I tried to call you today, and will try again, to make arrangements to meet.

I feel it might be worthwhile for you to send one of your engineering or manufacturing people to see how we build computers. Much of the economy of manufacturing computers comes about with the tooling and test fixturing which is only practical on fairly large numbers, and I feel our conversation might be more worthwhile if you had a picture of this.

I look forward to talking about this with you soon.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

cc: Rod Belden, R02

**GP GENERAL
PRECISION
SYSTEMS INC.**

LINK GROUP

BINGHAMTON, NEW YORK 13902 | TELEPHONE 772-3011 | TWX 510-252-0195

March 13, 1968

Mr. K. H. Olsen, President
Digital Equipment Company
Maynard, Massachusetts

Dear Mr. Olsen:

After reviewing our long range plans and our potential simulator sales for the next five years, I feel that we must take a fresh look at the utilization of general purpose computers in our simulation equipment. In this vein, I have had discussions with one computer manufacturer regarding the possibility of building a computer under license for use in our own equipment. In order to evaluate this possible solution more objectively, I would like to sit down with you for a brief meeting to ascertain whether or not you might have interest in such a plan. Any agreement which we might reach with a general purpose computer manufacturer would, by necessity, be long term, and I would hope would also cover any new generation computers which would be developed in the next few years. It would be our intention to utilize the selected manufacturer's computers on as much of our simulation equipment as would be practicable and, for that reason, I feel that a licensing program on your part might be mutually beneficial to both of us.

I fully recognize from past experience that there are always problems in the first few units of any new generation of a computer, and it would be our intention in those circumstances to purchase our first units from the manufacturer and, at some appropriate point in time, when drawings were available, to produce follow-on computers at Link for use in our equipment.

There is certainly no intention on our part at this time to consider building computers under license for use by anyone other than our own group or, perhaps, corporation.

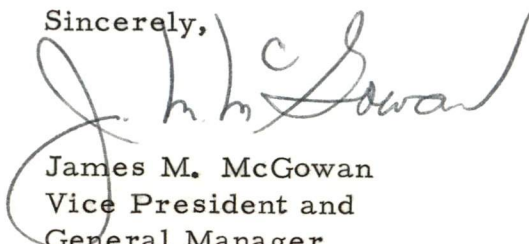
Mr. K. H. Olsen, President

- 2 -

March 13, 1968

I would like very much to meet with you within the next few weeks if you would be interested since, as I mentioned earlier, I feel that this plan could be of substantial benefit to both Digital Equipment Company and Link.

Sincerely,



James M. McGowan
Vice President and
General Manager
Systems Division

JMM:bm

March 22, 1968

Mr. Cesar M. Gutierrez, Jr.
Productos de Acero, S.A.
Hidalgo Pte. 540
Apartado 270
Monterey, N.L., Mexico

Dear Mr. Gutierrez:

Thank you for your recent letter requesting information about our Company. Enclosed are several pieces of literature describing the products we make, and a copy of our latest Annual Report.

I am also taking the liberty of enclosing an American Research and Development Corporation Annual Report.

Very truly yours,

(Mrs.) Elsa C. Carlson
Secretary to the President

Enclosures

C
O
P
Y

PRODUCTOS DE ACERO, S.A. February 22 1968,
TELEFONO 3-48-00 · HIDALGO PTE. 540 · APARTADO 270 · MONTERREY, N.L. MEXICO.

PERSONAL MR. CESAR M. GUTIERREZ Jr.

Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts 01754, USA

Att. Mr. Kenneth H. Olsen
President.

Dear Mr. Olsen:

I am a shareholder of Digital Equipment and because I would like to invest more I would appreciate if you could send me complete information of your Company as well as catalogues or folders of the different products of your present and - future manufacture.

I am also a shareholder of The American Research and I would appreciate if you could give me the address and to whom I will refer asking for the above information.

I am the General Director of the following Companys:

Productos De Acero, S.A.,
Hidalgo Pte. 540
Apartado Postal No. 270
Monterrey, N.L. Méx.

AceroZinc, S.A.,
Hidalgo Pte. 540
Apartado Postal No. 1555
Monterrey, N.L. Méx.

and I am enclosing herewith a leaflet folders which describes the products of our present manufacture.

Thanking you in advance for your attention

I remain,

Yours Very Truly,
CESAR M. GUTIERREZ, Jr.



FABRICANTES DE... **TELAS METALICAS**

BODEGA EN MEXICO, D. F.
CALLE UNION No. 30 ESQ. JARDIN, COL. TLATILCO TEL. 47-77-11

March 21, 1968

Mr. A. I. Llewelyn, O.B.E.
Ministry of Technology
Abell House
John Islip Street
London, S.W.1, England

Dear Mr. Llewelyn:

On April 3, 1968, several key executives of Digital Equipment Corporation will be meeting with you to discuss our plans for expanding manufacturing of our small computers in England.

We are very proud of our subsidiary in England. We feel we have an organization which is both competent and enthusiastic, and that we are well underway in our program to train young men to do an efficient job and to act as career representatives of the Corporation. Our plan is to continue to develop a solid, capable organization, and to continue our dedication to support our customers.

A year and a half ago, we started to carry on some of the manufacturing steps for our PDP-8 computers in our Reading plant. We feel we have been very successful in this, and would now like to expand our manufacturing in England. We plan to develop a Special Systems Group in Reading that would do most of our special systems work for the European continent, and we plan to expand our manufacturing so that our PDP-8/1's and PDP-9's will have a major United Kingdom content.

On April 3, we would like to discuss our plans with you to determine what impact they would have in causing our equipment to have preferential treatment over imported equipment in the United Kingdom, and to develop, with your help, other possibilities to enhance our efforts in the United Kingdom.

We look forward to this conversation, and hope we can work out a plan that will make our computers considered United Kingdom products.

Very truly yours,

Kenneth H. Olsen
President

KHO:ecc

draft letter

written by Ted Johnson

① Rewrite

② Telex to Johnley
for comment and
get proper address

③ Send - Special Delivery

digital

March 15, 1968

Llewellyn

Mr. Llewelyn
Ministry of Technology

Dear Mr. Llewelyn:

On April 3, several key executives of Digital Equipment Corporation will be meeting with you to discuss our plans for manufacturing our small computers in England.

We are very proud of our achievements and contributions in England, as we are elsewhere in our international organization. Consistent with our dedication to simple, straightforward programs and policies and to the support of our customers, we have, from the start, acted to build a solid, capable organization there. Rather than exploiting short-term opportunities, we began by dedicating ourselves to employing and training young men to do a competent job and to act as career representatives of the corporation. Our success has been a result of these efforts and the investment and contribution we made in this organization. In doing this, we established our European base in Reading, training European personnel there and adding a support organization for Europe largely consisting of citizens of the U.K., and facilities in Reading.

As an indication of our commitment and involvement, we acted several years ago to begin manufacture of computers in Reading. We put limits on this activity based on very real volume/efficiency factors and the developing competence of our manufacturing group there. Although setting up manufacturing may seem a simple, transferrable activity, it certainly is not within the context of the rapid changes in volume, automation and equipment designs which are particularly characteristic of our company in this particular segment of the computer market. As you know, the real-time, small computer business has been characterized by much shorter individual machine lives than is true of EDP computer manufacturers.

Overall, we look at our real contributions in the U.K. to be applications knowledge, technical specifications and quality of our hardware and software, and competent organizations to support our customers.

Mr. Llewelyn

-2-

March 15, 1968

At this point, we are planning an expansion of our production. It is our simple intent to identify our products in the U.K. as being of local manufacture. Our plan will be our best effort to add local content in parts and labor and will express our intent to continue to add to this program in the future.

In addition to manufacture of computers, we are planning a significant increase in systems engineering to meet the special needs of customers in the U.K. and elsewhere in Europe. We feel this is a very meaningful and valuable part of our contribution. ~~Concept?~~ In fact, it clearly represents a local activity which is unique and self-sufficient. The benefits of these activities will be measured in terms of cost savings and technical advancement in research and local industry in England.

We will deeply appreciate your consideration of our plans and acceptance of our intent. Our past efforts do, we feel, deserve recognition based on the contribution made and the sincere commitments we have made in the market. Mr. Mazzaresse, who is the Vice President in charge of our PDP-8 Family of Computers, Mr. Mann, our Vice President, Finance, and Mr. Kaufmann, our Vice President of Manufacturing, hope to be able to reach an agreement with the Ministry during their visit.

Sincerely,

Kenneth H. Olsen
President

KHO:mr

SUGGESTED CHANGE:

On April 3, we would like to discuss ^{our} ~~these~~ plans with you ~~and~~
to ~~consider~~ ^{determine} what impact they would have in causing our equipment to
have preferential treatment over imported equipment in the U.K., and
to develop, ~~other approaches~~ with your help, other
possibilities to enhance our efforts in the U.K.

Keri: I feel strongly that
we generalize our position as
much as possible at this point.
There are enough questions in
my mind at this point as to
the real posture of the U.K. and
where the authority ~~is~~ rests,
that we should not overcommit
ourselves.

3.20.68

TO JOHN LENG
FROM ELSA CARLSON

FOLLOWING IS A LETTER FROM KEN OLSEN TO MR. LLEWELYN AT THE MINISTRY OF TECHNOLOGY. TED SAID TO TELL YOU THAT HE IS IN AGREEMENT THAT IT BE SENT AS IS. WOULD YOU PLEASE GIVE ME MR. LLEWELYN'S FULL NAME, TITLE, AND ADDRESS SO THAT I CAN MAIL IT TODAY.

DEAR MR. LLEWELYN;

ON APRIL 3, SEVERAL KEY EXECUTIVES OF DIGITAL EQUIPMENT CORPORATION WILL BE MEETING WITH YOU TO DISCUSS OUR PLANS FOR EXPANDING MANUFACTURING OF OUR SMALL COMPUTERS IN ENGLAND.

WE ARE VERY PROUD OF OUR SUBSIDIARY IN ENGLAND. WE FEEL WE HAVE AN ORGANIZATION WHICH IS BOTH COMPETENT AND ENTHUSIASTIC, AND THAT WE ARE WELL UNDERWAY IN OUR PROGRAM TO TRAIN YOUNG MEN TO DO A COMPETENT JOB AND TO ACT AS CAREER REPRESENTATIVES OF THE CORPORATION. OUR PLAN IS TO CONTINUE TO DEVELOP A SOLID, CAPABLE ORGANIZATION, AND TO CONTINUE OUR DEDICATION TO SUPPORT OUR CUSTOMERS.

A YEAR AND A HALF AGO, WE STARTED TO CARRY ON SOME OF THE MANUFACTURING STEPS FOR OUR PDP-8 COMPUTERS IN OUR READING PLANT. WE FEEL WE HAVE BEEN VERY SUCCESSFUL IN THIS, AND WOULD NOW LIKE TO EXPAND OUR MANUFACTURING IN ENGLAND. WE PLAN TO DEVELOP A SPECIAL SYSTEMS GROUP IN READING THAT WOULD DO MOST OF OUR SPECIAL SYSTEMS WORK FOR THE EUROPEAN CONTINENT, AND WE PLAN TO EXPAND OUR MANUFACTURING SO THAT OUR PDP-8/I'S AND PDP-9'S WILL HAVE A MAJOR UNITED KINGDOM CONTENT.

ON APRIL 3RD, WE WOULD LIKE TO DISCUSS WHAT IS NECESSARY TO HAVE OUR PDP-8/I AND PDP-9 CONSIDERED AS UNITED KINGDOM PRODUCTS. WE FEEL THAT BY PURCHASING COMPONENTS IN THE UNITED KINGDOM, BY SUBCONTRACTING SOME OF OUR WORK TO UNITED KINGDOM FIRMS, AND BY INCREASING OUR MANUFACTURING FACILITIES IN READING, WE CAN DEVELOP A LARGE UNITED KINGDOM CONTENT.

WE LOOK FORWARD TO THIS CONVERSATION, AND HOPE WE CAN WORK OUT A PLAN THAT WILL MAKE OUR COMPUTERS CONSIDERED UNITED KINGDOM PRODUCTS.

PLS ANSWER BY TELEX, NOT DAYTEL, SO LETTER CAN BE SENT OUT TODAY.

ALSO

1968 MAR 20 PM 3:40
RECEIVED
DIGITAL EQUIPMENT CORP.
TELETYPE PUBLICATIONS

K. H. OLSEN

3/18/68

Ed Schwartz:

What shall I do about this?

Ken

Elsa:

A similar letter was sent out by Harry concerning his
1 share.

Mary

*Kenn Olsen
File Copy*

March 19, 1968

Cooper Brothers & Co.
Abacus House, Gutter Lane
Cheapside
London, E. C. 2, England

Reference: Your letter of March 14, 1968, S.206

Gentlemen:

In response to your letter of March 14, 1968, I wish to advise that one share of Digital Equipment Corporation (U.K.) Limited stock is held by me as nominee of the parent company.

Very truly yours,

Kenneth H. Olsen
President

ml

3/18
Copy to Schwerty for advice

COOPER BROTHERS & CO.

CHARTERED ACCOUNTANTS

LONDON, BEDFORD, BIRMINGHAM, BRISTOL, COVENTRY, GLASGOW,
GREAT YARMOUTH, HALESWORTH, LEEDS, LEICESTER, LIVERPOOL,
LOWESTOFT, MANCHESTER, NEWCASTLE, NORTHAMPTON, NORWICH,
PETERHEAD, THETFORD, WELLINGBOROUGH, AND NORTHERN IRELAND.

OVERSEAS
COOPER BROTHERS & CO. AND COOPERS & LYBRAND
UNITED STATES OF AMERICA, CANADA, MEXICO, NICARAGUA,
BERMUDA, BAHAMAS, JAMAICA, PUERTO RICO, URUGUAY, VENEZUELA,
AUSTRALIA, NEW GUINEA, NEW ZEALAND,
MALAYSIA, SINGAPORE, HONG KONG, JAPAN, IRAN,
CHANNEL ISLANDS, BELGIUM, DENMARK, FRANCE, GERMANY, ITALY,
THE NETHERLANDS, NORWAY, SPAIN, SWEDEN, SWITZERLAND,
SOUTH AFRICA, RHODESIA, ZAMBIA,
KENYA, TANZANIA, UGANDA,
NIGERIA, GHANA, LIBERIA.

S. JOHN PEARLS
SIR HENRY BENSON, C.B.E.
VIVIAN R. V. COOPER
BRIAN W. GRAVES
JOHN PERFECT
J. FRANCIS SHEARER, O.B.E.
ROBERT PHILP
RONALD F. SUMNER
BRIAN A. MAYNARD
DAVID C. HOBSON
GREVILLE C. B. GIDLEY-KITCHIN
S. J. DAVID CORSAN

T. ANTHONY TANSLEY
DONALD R. CHILVERS
ALEXANDER D. GORDON
ANTHONY PINKNEY
DEREK J. JAMES
PAUL F. M. SHEWELL
C. BERNARD WULCKO
ALAN W. BROOKLAND
JOHN C. COX
HON. ROGER R. E. CHORLEY
GERALD C. DREW
TIMOTHY G. R. LAWRENCE

TELEPHONE: 01-606 4040.
TELEGRAMS: COOPERS, LONDON.

ABACUS HOUSE,
GUTTER LANE,
CHEAPSIDE,
LONDON, E.C.2.

CONSULTANT J.R. SMITH, PRINCIPAL MANAGER PETER H. HODGKINS

Enclosure
OUR REFERENCE S.206
Air Mail

Kenneth H. Olsen, Esq.,
Weston Road,
Lincoln,
Massachusetts,
U.S.A.

14th March 1968

Dear Sir,

Digital Equipment Corporation (U.K.) Limited
Section 27, Companies Act, 1967

We would like to draw your attention to the provisions in the Companies Act, 1967 relating to the disclosure of directors interests in companies. Briefly, the Act now requires that all directors declare, to the company, all interests in any type of share or debenture of the company, or if in a group, in companies in that group whether held by themselves or near relatives and to disclose all changes in their interest. Changes must be notified within fourteen days from the event causing the change or fourteen days after the director first becomes aware of the change.

The register of directors shareholdings, which we maintain for the above company, is being substituted by a new form of register, to enable the information to be correctly recorded in accordance with the provisions laid down in the new Act. The information contained in the register of directors shareholdings, at present in our possession, shows that you hold one ordinary shares of £1.

A duplicate copy of this letter is attached and we should be grateful if you would return this to us, signifying your confirmation that the information contained in the present register is correct and also indicate the further information which is required to be disclosed by the Companies Act, 1967. If you hold the share as nominee for the parent company please let us know as the holding will then not have to be recorded.

Yours truly,

Coopers & Lybrand

March 19, 1968

Mr. Y. T. Huang
Sales Manager
Taiwan Office Machine Co., Ltd.
P.O. Box 1761, Taipei
Taiwan, China

Dear Mr. Huang:

Thank you for your letter of February 29, 1968 concerning representation in Taiwan. As a general policy, we do business directly rather than to use representatives. This, of course, severely limits the number of customers sufficiently sophisticated to buy from us in areas not covered by our sales offices. All Taiwan is handled directly from Maynard and our business activity there is very low at present.

While we are constantly reviewing the position, it is doubtful whether there would be enough business in Taiwan to sustain effective representation, considering our sales expenses are typically 5 per cent and our commissions would have to be commensurate with this percentage.

We would be pleased to fulfill requests from customers who would like copies of our literature. As we do not pay spotters commissions, we would prefer not to have you distribute our literature or act in any way which would imply to the prospect that you have our representation.

We greatly appreciate your interest in our organization, and regret that we cannot be more constructive on this question of representation in Taiwan.

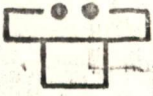
Yours sincerely,

DJA:pgl

D. J. Alusic
Sales Support

cc: Mr. Kenneth H. Olsen ✓

C
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P
Y



台安計算儀器有限公司
TAIWAN OFFICE MACHINE CO., LTD.

P. O. BOX 1761, TAIPEI,
TAIWAN, CHINA.

CABLE ADDRESS:
"TAIOFF" TAIPEI
TELEPHONE
47993

OUR REF. NO. MC-1/68
YOUR REF. NO.

TAIPEI. Feb. 29, 1968

Mr. Kenneth H. Olsen, President
Digital Equipment Corp.
146 Main Street,
Maynard, Massachusetts 01754
U. S. A.

Mr. Olsen;

We owed your esteemed name from the Marketing Service Dept. of Business Week, and understand that you are the pioneer of mini-computer manufacturers.

Our market is just setting into computers. At present 2 sets of NCR 390 are installed in US Air Force base, 1 set 395 by Post Office, 8 sets IBM 360, 2 sets 1620, 10 sets Tabulating machines and 1 set CDC computer are using at this market. Among those computers only IBM is on rental basis. There are still a very prosperous market for the cheaper model computers.

We hope to be able to dispose your Mini-computers at this market, if you are still no connection at this area. Of course, the programmer and engineer will be trained when there are a firm order concluded.

If you interest in our proposal, we would like you in sending us your computers technical manuals and all available data at your earliest convenience.

Yours very truly,
TAIWAN OFFICE MACHINE CO., LTD.

Y. T. Huang
Y. T. Huang
Sales Manager

*Std Letter
Rep
DA*

YTH/rh

March 15, 1968

C
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Mr. James McKalip
1688 Grizilo Drive
San Jose, California

Dear Jim:

We are sorry to hear that things haven't worked out for you at Fairchild. I have asked our Vice-President of Manufacturing, Pete Kaufmann, to consider your ideas about manufacturing. Although he is not scheduled to do this immediately, he is fascinated by the idea because we use so many memories.

I have asked around to see if there are any needs for a senior engineer with your background, and, at the present time, we are not looking for senior people, except for a few specialties. Therefore, I feel we have to give you a negative answer in this regard.

With best wishes, Jim,

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

408
-266-5591

1688 Grigilo Drive
San Jose, Cal. 95124
March 6, 1968

Dear Ken,

at the risk of making a real pest of myself after I having already talked to you this evening, I would like to make one last try at interesting you in the stack business.

The best stack manufacturing engineer I have ever met and I both feel that we have the most producible $2\frac{1}{2}$ " stack in the business today. It is particularly suited to your large computer needs.

The investment would be quite small; our salaries plus a few thousand dollars for tooling, parts and assembly labor. Beyond

prototype, normal production costs would apply. Time to start of production would be 6 months or less. The entire operation is quite straight forward if you know what you are doing. We do.

We are armed with design information, cost data, manufacturing information and other relevant details. We wish someone would ask us to tell them about it.

If you can see any way to use this to your advantage, either as an in-house operation or as a garage venture, we'd like to do it.

I don't want this proposal to exclude any other possibilities that you might see for me.

Thanks again.

Jim
(McKalis)
200

March 14, 1968

Larson Industries, Inc.
2325 Endicott Street
St. Paul, Minnesota 55514

Gentlemen:

Please send me literature on the Glasspar boat, and
names of dealers in Massachusetts and New Hampshire.

Your assistance is appreciated.

Very truly yours,

ecc

C
O
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March 13, 1968

C
Mr. Ole A. Nordby
Skovveien 8 11
Oslo 2, Norway

Dear Mr. Nordby:

Your Ref.: ON/AMH

O
Thank you for your letter of March 4th concerning representation in Norway. We are sorry that your first letter did not reach our office.

P
As a general policy, we do business directly or through our subsidiaries rather than using representatives. This, of course, severely limits the number of customers sufficiently sophisticated to buy from us in areas not covered by our sales offices. All Finland is handled directly from our United Kingdom subsidiary.

Y
While we are constantly reviewing the position, it is doubtful whether there would be enough business in Norway to sustain effective representation, considering our sales expenses are typically 5 per cent and our commissions would have to be commensurate with this percentage.

We would be pleased to fulfill requests from customers who would like copies of our literature. As we do not pay spotters commissions, we would prefer not to have you distribute our literature or act in any way which would imply to prospects that you have our representation.

Mr. Ole A. Nordby

-2-

March 13, 1968

We greatly appreciate your interest in our organization and regret that we cannot be more constructive on this question of representation in Norway.

Sincerely,

Donald J. Alusic
Sales Support

DJA/mrf

cc: Ken Olsen

C
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Original to Ron Smart to handle ^{3/8/68}
le

CABLE ADDRESS: OLNORD

TELEPHONE: 55 07 50 - 55 08 54

OLE A. NORDBY

SKOVVEIEN 811 - OSLO 2 - NORWAY

YOUR REF.:

MY REF.: ON/AMH

OSLO, March 4, 1968

DIGITAL EQUIPMENT CORPORATION,
146 Main Street,
MAYNARD,
Massachusetts, 01754,
U. S. A.

Attention: Mr. Kenneth H. Olsen, President.

Re.: Representation for your company in Norway.

Dear Mr. Olsen,

Please refer to my letter to you of September 11, 1967 regarding the representation for your company in Norway.

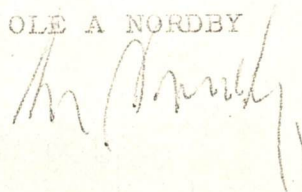
In my letter I stated that I planned to go for USA sometime around the middle of October, but unfortunately my trip to America was delayed until the middle of November and when I was in America my time was limited that I had no time to get in touch with you.

However, I wonder if there is any possibility for the representation for your company in Norway and should very much appreciate to hear further from you in this connectuon. There are many of my customers that have asked me to try to get this representation and I would, of course, very much like to be able to offer your equipment to my many important customers.

I shall look forward to hear from you and thanking you beforehand for your prompt reply, I beg to remain,

Sincerely yours

OLE A NORDBY



March 13, 1968

C
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Mr. Owen J. Ott
Manager, Engineering Department
Data-Control Systems, Inc.
East Liberty Street
Danbury, Connecticut

Dear Mr. Ott:

While in France recently, I was asked if we could help in laying out an automated system for making printed circuit boards. I said that we were not in a position to do so, but mentioned you had offered to help us do this and might be interested in helping them.

If you would like to pursue this, the man to contact is:

Mr. Pierre Turpin
Centre de Villarceaux
Noxay par Montehery
Essonne, France

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

March 13, 1968

C
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Manager, Engineering Department
Data-Control Systems, Inc.
East Liberty Street
Danbury, Connecticut

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Mr. Pierre Turpin
Centre de Villarceaux
Noxay par Montehery
Essonne, France

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

March 11, 1968

C
P
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Professor Wyle Childs
Material Engineering Department
Rensselaer Polytechnic Institute
Troy, New York

Dear Wyle:

I was pleased to see you again on Wednesday, and I'm very sorry I didn't have a chance to visit with you.

If there is anything we can do to help in any way, please feel free to call on us.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

digital

March 8, 1968

Mr. Peter E. Haase
Midwest Institute for Research & Training
43 East Ohio Street
Chicago, Illinois

Dear Mr. Haase:

I am writing this reply for Mr. Ken Olsen who has referred your letter of February 19 to me.

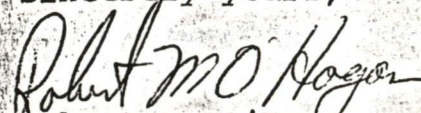
Your interest in oceanology is commendable, and your concern over the future availability of technically qualified persons is very timely and significant. We at Digital also recognize the importance of the future markets in this many disciplined area of science, and we realize the possible problems involved in the procurement of properly trained technicians.

However, we do believe as time progresses, the broad term of oceanography will become quite restrictive in nature. It will become restrictive to the individual basic discipline that the individual technician was trained for, i.e. Marine-Chemical Technician, Marine Seismic Technician, Marine Ocean Dynamics Technician, Marine Meteorologic Technician, Marine Fisheries Technician, and so forth.

We also recognize that a possible post high school course of the technical college level could qualify many technicians for these related fields. Such an education could promote general understanding of the ocean system, whereby the individual could operate and record various instruments and with added experience even interpret data.

We are sorry to say that at this time we are unable to participate in your program since we have only one oceanographer in our employ.

Sincerely yours,


Robert M. O'Hagan

Oceanographic Applications

dm

*Original and enclosures
to Dick to answer*



MIDWEST INSTITUTE *for* RESEARCH & TRAINING

February 19, 1968

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
Small Computer Products
146 Main Street
Maynard, Massachusetts 01754

Dear Mr. Olsen:

I am contacting you in the belief that your company will be interested in participating in a major research program aimed at improving educational programs in the field of oceanology. Major support for this 18 month study program will be provided by the U. S. Office of Education, but industrial participation is also needed.

The planned program is described in the enclosed brochure. It involves, as you can see, a comprehensive analysis of the role of, and training requirements for, technical personnel in oceanology and related fields. I believe your experience will confirm the present critical need for such people in all technical fields; because of both the interdisciplinary nature of oceanology and its rapid growth, the need for technical persons in this field is especially critical.

With the help of firms such as yours, and with the support of the U. S. Office of Education, we expect to be able to make a major contribution toward the solution of this problem.

I hope you will give the program your careful consideration. I believe it warrants your support. If you would like to discuss the program in more detail, please feel free to write or call. I would be delighted to meet with you at your convenience.

Even if you do not feel you can participate in this program I would like very much to hear from you. I would like to explore the possibility of contacting you during the study program to discuss your company's experience and outlook in this connection.

Thank you for your interest.

Very truly yours,
P. E. Haase
Peter E. Haase
Vice President

PEH/rh
Encl.

March 8, 1968

**Mr. Marc Sterling
Sterling and Company
9255 Sunset Boulevard
Los Angeles, California 90069**

Dear Mr. Sterling:

I want to thank you for your letter of March 4 concerning your client's interest to merge with our Company. However, I feel that we have to give a negative answer to your inquiry.

We see the plans for DEC laid out quite clearly before us, and do not now see the need for making corporate ties.

Very truly yours,

Kenneth H. Olsen

KHO:ecc

C
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March 8, 1968

Mr. Marc Sterling
Sterling and Company
9255 Sunset Boulevard
Los Angeles, California 90069

Dear Mr. Sterling:

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We see the plans for DEC laid out quite clearly before us, and do not now see the need for making corporate ties.

Very truly yours,

Kenneth H. Olsen

KHO:ecc

March 4, 1968

Mr. G. W. Way
TransAirco, Inc.
P. O. Drawer B
Delaware, Ohio 43015

Dear Mr. Way:

Thank you for your letter of February 26 in reply to mine of the 16.

Since writing you I have had another meeting with the controlling principals and have received detailed financial data regarding the company about which I wrote you on February 16.

Prior to forwarding the available data on the company we would appreciate receiving from you a confirmation of our fee of 5% of the first, 4% of the second, 3% of the third, 2% of the fourth and 1% of the fifth and any additional million dollars of the transaction in the event the company about which we wrote is merged with or acquired by Transairco, Inc., said fee to be paid by Transairco, Inc.

Our company would agree to accepting it's fee in the form of Transairco, Incorporated. stock.

It has been our experience that when the fee arrangement has been agreed upon before negotiations are commenced, such negotiations and subsequent consummation of a transaction is usually expedited.

I am sure you will understand our position and I shall look forward to receipt of a signed copy of this letter approving our fee arrangement as set forth herein.

Sincerely,

STERLING AND COMPANY

Marc Sterling

MS/rg

APPROVED AND ACCEPTED:

TRANSAIRCO, INC.

by GLEN G. WAY, PRESIDENT



STERLING AND COMPANY · CORPORATE FINANCE

9255 SUNSET BOULEVARD · LOS ANGELES, CALIFORNIA 90069 · CRESTVIEW 4-0181 · BRADSHAW 2-8707

March 4, 1968

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Mr. Olsen:

We are in contact with the management of a very profitable, growth company, whose products appear to be extremely compatible with those of Digital Equipment Corporation. Our contacts have confirmed the possibility of a merger of the company with a listed company in a compatible product line.

Sales for 1967 were in excess of \$10,000,000 with respectable profits.

Should the subject company merge with or be acquired by Digital Equipment Corp. we would look to Digital Equipment Corp. for our usual fee of 5% of the first, 4% of the second, 3% of the third, 2% of the fourth and 1% of the fifth and any additional million dollars of the transaction.

Should the above fee arrangement meet with your approval we shall be pleased, upon receipt of your company's confirmation of our fee, to forward details concerning the subject company.

We shall look forward to the pleasure of hearing from you on this matter.

Sincerely,

STERLING AND COMPANY


Marc Sterling

MS/rg

APPROVED AND ACCEPTED:

DIGITAL EQUIPMENT CORPORATION

by KENNETH H. OLSEN, PRESIDENT



March 7, 1968

Mr. Frank J. Ponzio, Jr.
51 Pitney Avenue
New Providence, New Jersey

Dear Mr. Ponzio:

Ken Olsen has asked me to reply to your letter of January 7, concerning your request for the installation of a time-sharing terminal or for other support of your efforts to teach programming to some of the inmates at the Rahway State Prison. He passed your request to me because my product, the PDP-10, is Digital's time-sharing computer.

We would like very much to support your teaching effort in some way and I have discussed the problem with members of our programming department to see what we might do. In the immediate future it would not be possible for us to install a time-sharing terminal because while our computer is designed for remote time-sharing our only in-house computer at present is not time-shared remotely, i.e., we do not have an operator present to perform the necessary tape changes, etc. that would be required for remote operation of a time-sharing terminal. All users at present are congregated in the same room and perform their own operator's services. In addition, our present work load and commitments to customers for time on the system are so high that we are having difficulty meeting them. We also feel that for teaching computer programming to people with limited prior experience in programming that there are better software systems available such as GE BASIC or IBM QUICK TRAN. Our time-sharing system is quite sophisticated and flexible but hence more difficult for beginners to learn to use.

We have two customers whom you might contact that would be in a better position to supply time on a time-sharing system - the first of these is Applied Logic Corporation in Princeton, New Jersey, and the other is On-Line Systems in Pittsburgh, Pennsylvania. Applied Logic Corporation offers time-sharing services using a Digital Equipment Corporation PDP-6 computer while On-Line Systems offers time-sharing operation using both G. E. and Digital Equipment Corporation PDP-10 computers.

Another alternative might be to utilize one of our smaller computers located in the prison as part of your training program. We contribute equipment to various types of institutions each year and have done so this fiscal year ending June 30, to the limit of our capability. We would however be willing to consider such an alternative in the future.

Mr. Frank J. Ponzio, Jr.

- 2 -

I would be glad to discuss your plans and needs further to see if there is any additional way in which we might be able to support your efforts.

Yours very truly,

Robert E. Savell
Product Line Manager, PDP-10

RES/bwf

cc: Mr. Ken Olsen - DEC

^{1/24}
Original to Sub Snell to take care of
Frank J. Ponzio, Jr.
51 Pitney Avenue
New Providence, New Jersey
January 7, 1968

Mr. Kenneth H. Olsen
President Digital Equipment Corp.
146 Main Street
Maynard, Massachusetts 01754

Dear Sir:

I am presently involved in teaching Computer Programming to inmates of the Rahway State Prison in Rahway, New Jersey. This has been one of my most challenging and gratifying endeavors.

From what began four years ago as a task clouded with uncertainty and skepticism has reached a major milestone by having one of my students upon his release from prison obtain a job as a programmer for a major company. This was also a new undertaking for this company, but their satisfaction has been exemplified by their willingness to employ other inmates upon their release from prison.

This has proven to be a tremendous boost to the course since a precedent has been set, and these men now know what positions are available to them if they earn them. To these men and their families something as this on the horizon gives them the hope that they can return to society and attain a respectable and well paying job, and to a prisoner this sometimes seems almost unattainable.

The course that is taught consists of lectures combined with each student developing several programs. The programs are developed using computers outside the prison which have been made available through the generosity of various companies.

The inaccessibility of the computers to the students, however, does retard the development of the students. As a result of the time these men have and their desire to learn, some could easily double their learning rate if the computers were more accessible.

In order to overcome this inaccessibility, I am soliciting your support for the installation of a time-sharing terminal in the prison. This appears to be the best solution for bringing the computer to these men since security regulations do not allow bringing them to a computer center.

Any support your company may desire to give for the installation and continued operation of a time-sharing terminal in the prison will be deeply appreciated. If you desire further information about this project please feel free to contact me.

I would appreciate hearing from you as early as possible in order that we may proceed to bring this to a reality.

Sincerely,

Frank J. Ponzio, Jr.

Frank J. Ponzio, Jr.

March 7, 1968

Mr. G. N. Hanson, President
The Data Master Division
of the Bristol Company
85 Hazel Street
Glen Cove, New York

Dear Mr. Hanson:

After receiving your letter a couple months ago outlining the problems we have had with Data Master, we immediately went to work to resolve them. I am writing now to make sure they are all taken care of.

Our people have the most complimentary things to say about your organization. Your people are cooperative, competent and patient. We have been trying hard to develop good communications with your people so that some of the problems which are the result of misunderstanding and poor data will not occur again.

Please let me know if there are still problems which we have not resolved.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

Jack Skuldas
cc: Mike Ard
Nick Mazzarese
Dave Deviniston
Ted Johnson

KENNETH H. OLSEN
PRESIDENT

March 7, 1968

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The Data Master Division
of the Bristol Company
85 Hazel Street
Glen Cove, New York

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Please let me know if there are still problems which we have not resolved.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

DATE: February 7, 1968

SUBJECT: DATA MASTER

TO: Jack Shields

FROM: Elsa Carlson

Please review the following draft of a letter to Data Master and make any necessary additions and/or corrections.

Mr. G. N. Hanson, President
The Data Master Division
of the Bristol Company
85 Hazel Street
Glen Cove, New York

Dear Mr. Hanson:

When we received your recent letter listing the problems you have had with DEC equipment, we made a particular effort to solve the problems. I looked into some of the specific complaints you mentioned, and feel that I should make comments on the information I found. I mention this not to claim innocence in the problems, but to point out that we will both have to work hard at developing fast and efficient communications between Data Master and DEC. Our people have the most complimentary things to say about our organization; that your people are cooperative, competent, and patient.

Because your service organization maintains the entire system, our knowledge about the problems you encountered have been delayed and incomplete. It is my understanding that in all the cases you mentioned, DEC equipment problems were corrected by our field service very shortly after we were notified.

At Houston Natural Gas, the original machine was serviced by our Bill Freeman, and it ran error-free for fifteen days prior to being replaced. The DEC programs and type-out routines operate satisfactorily in the replacement. If this system problem continues to exist, it would seem that your diagnostic programmer should be able to determine what it is.

At Pan American Petroleum in Tyler, the DECTape problem was resolved during the week of December 10. Since then, the machine has, to our knowledge, operated error-free.

The memory problem at Sinclair Oil was also corrected during the week of December 10.

Jack, can you help out on a closing paragraph.

digital

INTEROFFICE MEMORANDUM

DATE: February 7, 1968

SUBJECT: DATA MASTER

TO: Jack Shields

FROM: Elsa Carlson

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The memory problem at Sinclair Oil was also corrected during the week of December 10.

Jack, can you help out on a closing paragraph.

By Bob Collings

Dear Mr. Hansen:

We deeply regret that the Data Master Division has had difficulty with our PDP-8 computers. Our experience with twelve hundred of these systems installed throughout the world is that normally they are a very dependable piece of equipment.

Because your service organization maintains the entire system, our knowledge about the problems you have encountered has been somewhat delayed and incomplete. It is my understanding that in all of the cases ~~that~~ you have mentioned, the DEC equipment problems were corrected by our Field Service Organization very shortly after we were notified of them:

Houston Natural Gas - the original machine was serviced by Bill Freeman and ran error free for the 15 days prior to being replaced. The DEC programs and type-out routines operate satisfactorily on the replacement. If a system problem continues to exist, it would seem that your diagnostic programs should be able to determine what it is.

Tyler, Texas - The DECTape problem was resolved during the week of December 10th. Since then, the machine has operated error free to our knowledge.

Sinclair Oil - Memory problem was also corrected during the December 10th week and there has been only one error since.

Baton Rouge - We have had no request for help nor indications of problems on this installation.

Long Island - The information we have indicates that the nine systems operating in-house are performing well.

The decision to allow Data Master to exchange disc systems for extended memories was Mike Ford's. As a firm, DEC meets all of its obligations without exception. The exchange of disc systems for extended memories will be made per Mike Ford's request.

In the future, I think we could avoid similar problems by having Data Master contact our Field Service Organization as soon as it becomes apparent a servicing problem exists. A second suggestion would be to make sure we have complete information before drawing conclusions. The statement which caused the difficulties at Houston by referring to the system as a prototype was made by a Bristol Regional Manager and not a DEC Field Serviceman.

Sincerely,

C. Nick Mazzaresse 12/27
Red Johnson
Mike Ford
Jack Shields

THE DATA MASTER DIVISION

OF THE BRISTOL COMPANY

85 HAZEL STREET, GLEN COVE, N. Y.

TELEPHONE
ORIOLE 6-7300

DEC 28 1967

DATA LOGGERS

INDUSTRIAL CONTROL

December 19, 1967

Fall

Mr. Kenneth Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Mr. Olsen:

For the past year we have had considerable trouble with PDP-8 computers, both at our Data-Master plant and in field installations. These troubles have involved miswiring of frames, failure of components and boards, maladjustment of memory read-write currents and random loss of instruction in memory. The first three troubles, while aggravating and time consuming to detect and correct, have not caused us as much trouble as the random loss of bits or instructions in memory. These troubles have persisted in computers that have been serviced more than a dozen times in the period of a few months. Although each service call seems to result in some trouble being found and card or cards replaced, the random loss of bits or instructions in memory continues.

Since DEC field-service personnel have been unable to do much about core memory troubles, we finally suggested to Mr. Dave Denniston that we return the extended memories we have received from DEC and exchange them for Disks. The proposal was made so that in the event the program was destroyed due to the loss of a bit in memory, it could be automatically read back into core from the Disk. The Disk memory, having non-destructive readout and being protected by a "read-only" switch, would not be subject to the same troubles as core memory. This conversation with Mr. Denniston occurred near the end of October.

Around the 7th or 8th of November, Mr. Tom Gianetti of DEC told me that Mr. Denniston had told him DEC had agreed to our proposal.

As a result of continuing exasperating computer failures, we tried to reach Mr. Denniston to confirm the exchange proposal. We were unable to reach him (this was November 13 to 15 and he was in California).

December 19, 1967

Finally, on November 16th, we called Mr. Gianetti and asked him if he would confirm in writing that DEC would exchange the extended memories for Disks. He said he would do so and would send the letter that day.

On the basis of Mr. Gianetti's statement, we immediately contacted four customers for our systems, cancelling the training school scheduled to be held at Data-Master November 27 to December 8, requesting that specifications be changed to replace extended memories with Disks and requesting that delivery dates be changed to allow us to re-program these four systems to use a disk memory. We agreed with our customers to do all this extra work at no cost, since there seemed to be no other way to make a reliable system with a PDP-8. These customers agreed to make the required changes in specifications and to accept delayed delivery.

The following morning, not having received written confirmation, we called Mr. Gianetti and were told that he was unable to give written confirmation.

Finally, on November 27th, a meeting was held with DEC personnel (Messrs. Shields, Dubay, Merrill, Ford, Gianetti, and Purcell) at the Data-Master plant. Our problems were discussed, and we agreed to run further tests. In spite of the fact that we had agreed with our customers to the exchange of Disk for Extended Memory on the basis of DEC's agreement to make the exchange, Mr. Michael Ford withdrew Mr. Gianetti's promise to make the exchange. On Friday, December 1, Mr. Denniston also called to say that DEC would not honor the exchange previously agreed upon.

We regret the internal confusion in your company that led to this situation. However, the fact remains that on the basis of a clear statement by DEC personnel that the exchange of extended memory for Disk would be made at no charge and that a written confirmation would follow, we now have a commitment to four of our customers to make this exchange. The Bristol Company intends to honor its commitments and expects the Digital Equipment Corporation to do the same.

The troubles with computers both at Data-Master and in the field have continued; and no solution is in sight, in spite of the fact that both Data-Master and DEC have been working hard on the problems. The computer in the system at Houston Natural Gas has been down for a month and as a result this customer gave us the option of either removing the system or replacing the computer. Unfortunately, this customer's confidence in

Mr. K. Olsen

-3-

December 19, 1967

the PDP-8 computer was shaken some time ago when he was told by DEC service personnel that it was an old computer (No. 56) and would never pass margin checks. Although we had believed we had corrected this wrong impression, the many recent troubles brought it to the front again. We have taken steps to replace this computer and have sent it back to Maynard to be brought completely up to date and thoroughly checked out. When this is done and the computer is virtually rebuilt, it would be wise to assign a new serial number to it.

The computer at Sinclair Refining in Houston, Texas, has been giving intermittent trouble for some six months. The program has had to be reloaded every day or two. The people at Sinclair learned from DEC personnel that we were replacing the computer at Houston Pipeline and are now contemplating a request for similar treatment.

The computer at Pan American Petroleum in Tyler, Texas, appears to be working now that the DEC tape has been properly serviced. Of course, if this system suffers from loss of words in core memory, the program is automatically reloaded from tape. In the past month or two this has occurred at least five times. However, the teletypes (ASR-33) have been giving trouble and, as a result of the statement by DEC service personnel that the ASR-33's would never work on that system, our customer has demanded that we replace them with ASR-35's.

As you can see, we have been having considerable trouble with DEC computers. We feel that if we are to mutually benefit from the large market for our type of systems, better cooperation between the two companies is essential. To achieve this, it is essential that DEC service personnel be extremely cautious in their relations with our customers. It does neither of us any good for DEC people to say that a PDP-8 computer is obsolete or a prototype. We have been careful to point out to our customers that we feel that many of the troubles we have been having are characteristics of all high speed digital computers with core memory, and not due to poor design of the PDP-8. However, these troubles exist, no cause or cure has been found; and we feel that the only way to assure reliable operation is to provide Disk memory in addition to core. We feel very strongly about DEC reconsidering their position on replacing extended memories with Disks. DEC's reputation will suffer far more if the word of their representatives cannot

Mr. K. Olsen

-4-

December 19, 1967

be relied upon, than by admitting inherent core memory troubles which can be avoided by using Disk memory. Meanwhile, we will do everything we can to cooperate with DEC personnel in eliminating any possible sources of trouble and assisting DEC personnel in locating the causes.

Sincerely,

THE DATA-MASTER DIVISION

G.N. Hanson
G.N. Hanson, President

GNH:clw

CC: Mr. D. Denniston
Digital Equipment Corp.



INTEROFFICE MEMORANDUM

DATE: January 4, 1968

SUBJECT: LETTER RECEIVED FROM G. N. Hansen, President of Data Master

TO: Ken Olsen FROM: Jack Shields / Dave Dubay

cc: Nick Mazzaresse
Ted Johnson
Mike Ford

Mr. Hansen's letter covers quite a few areas which we would like to clarify.

We feel that discs are probably more advantageous in Data Masters application rather than the use of extended memory, and we cannot help but feel that a number of the points raised by the Data Master people were made to reinforce their position that we swap extra memories for disc.

It is important to understand that Data Master intends and tries to do their own service, and until we met with Jerry Firth, neither Dave Dubay, Mike Ford or myself were really aware of the magnitude of the problem of memory failures which occurred on their machines.

The advents that took place after the meeting in Long Island were:

1. Two problems were cleared up on machines in the plant.
2. On the week of December 10th, Bill Moroney and a team of product support people went to Houston, Texas to clean up the other difficulties. There were to our knowledge three problem areas in Texas: Houston Pipe Line, Sinclair Oil and the Tyler installation.
3. Data Master was also in the process of installing a large memory machine at Baton Rouge, Louisiana and had requested that we stand by in case help was needed there.

RE: LETTER RECEIVED FROM G. N. HANSEN, PRESIDENT OF DATA MASTER

HARDWARE PROBLEMS: Houston Pipe Line. This was the most touchy of all of the installations and we had had reports that the machine was failing by losing memory locations almost daily. Bill Freeman resolved this problem and to our knowledge, the machine had run error free for fifteen days before Data Master replaced it. (Data Master was aware that it ran error free for this time.)

As we understand it, their replacement machine has been installed and all DEC programs operate satisfactorily, however, a system problem exists. The problem shows up as garbled typeout during the customer program operation. Since Data Master does not have diagnostics for their equipment and all of our typeout routines work properly, we feel the problem is Data Master. A programmer was dispatched from their Long Island office to look into this and we have heard nothing since.

TYLER, TEXAS: We had a DECTape error which was resolved during the week of the 10th of December. Since then, the machine has operated error free to our knowledge.

SINCLAIR OIL: Bill Freeman corrected the memory problem during the week of December 10th and to our knowledge there has been one failure since that time on which Data Master does not want any help from DEC.

BATON ROUGE: We have had no request for help or indications of problems on this installation.

LONG ISLAND: The past three weeks have been the best operating period they have ever had. Out of nine systems they have had two failures. Jerry Firth did not have any data on what those two failures were. Many of the systems have been running error free since our meeting in November.

MEMORY SPECS: Mr. Firth claims that one of his engineers quoted a bit failure rate specification (1 in 10^{13}) from a core memory manufacturer. He would not disclose who the manufacturer was. He relates this spec to his problem in that his calculations show that this would give him a memory failure about once every week to ten days. Because of that spec he felt his equipment was working properly and would not accept any help from DEC. We questioned where he got such a specification.

RE: LETTER RECEIVED FROM G. N. HANSEN, PRESIDENT OF DATA MASTER

COMMENTS CONCERNING INNUENDOS AND STATEMENTS MADE BY DEC PERSONNEL: Data Master has claimed that the reason they had to swap the Houston Natural Gas system was because a DEC representative had told their customer that the system was too old to meet margin specs. The DEC representative covering Houston Pipe Line was Bill Freeman and the following is his account of what happened.

At no time did he make any such statement. The customer did question him on the feasibility of adding a disc to their system. Bill told them that due to the age of their system they could not add a disc in its present state. (They do not have 3 cycle data break for operating the disc and a change in processor wings would have to be made to give them this feature.)

A Bristol representative told the customer that his machine was a prototype. After realizing his error he apologized to Bill and told him to use his name if any repercussions occurred. His name is: Mr. William T. A. Caraway, Regional Manager, Bristol Corporation.

We can never be absolutely sure of what was said to the people at Houston Pipe, however, the pressure to add a disc from Data Master, the fact that the Pipe Line machine could not have a disc added to it unless a wing was replaced, coupled with the fact that there were statements made by Bristol people, lead us to believe that Data Master was faced with a fait accompli when it came to replacement of the equipment.

SINCLAIR REFINERY: I don't know how Sinclair found out about the replacement of the machine at Houston Pipe Line and it could very well have been through DEC personnel. I do doubt this, however, since this concerns product support personnel and these men only work on the most difficult pressure problems where you always must be careful what you say and how you conduct yourself.

PAN AMERICAN PETROLEUM TYLER: The comments here are erroneous and false. The decision to replace ASR-33's with the ASR-35's was made before we arrived on the scene. Pan American has a contract with some other service Organization (Western Electric, we believe) for his teleprinters, and due to their inability to maintain the equipment, the decision to swap for 35's was made. Bill Freeman was questioned as to whether or not the ASR-35's would give them more reliable operation. His answer, of course, was yes. Our answer would have been the same.

RE: LETTER RECEIVED FROM G. N. HANSEN, PRESIDENT OF DATA MASTER

We feel Mr. Hansen's letter demands a rebuttal. It is loaded with assumptions and misinformation. We feel that DEC should not take the Houston Pipe Line machine back into the plant as it did function properly once fixed and it is up to date on mods. (The 3 cycle data break mod is an improvement mod that we will install for \$1,000.) If a rebuttal letter from yourself is not in order, then Jack Shields would like to write one.

We will remind all Field Service people about their conduct in the field and the traps they can fall into just to be sure we are on top of the situation.

JJS:ned

March 5, 1968

Mr. Richard H. Walrond
P.O. Box 38
Linden, Transvaal
South Africa

Dear Mr. Walrond:

Thank you for your interesting letter of February 17, 1968.

We have considered beginning a direct sales activity in South Africa. This would probably be done by assigning a trained sales engineer who could also service equipment for the first year or so, depending on volume. We would simultaneously bring someone (or several people) to Maynard for extensive training.

We will consider your letter further and be in touch with you.

Sincerely,

Theodore G. Johnson
Vice President, Sales

TGJ:mr

cc: Mr. R. Smart
Mr. J. Leng
Mr. J. Shields

bcc: Mr. K. Olsen (for file)

C
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P
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Linden,

17th February 1968.

Transvaal,

R. of S.A.

The President,
Digital Equipment Corporation,
Maynard, Massachusetts.

Dear Sir,

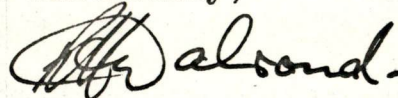
I am aware that you have had enquiries from South Africa about your systems, and some months ago your organisation kindly sent me literature about the PDP 9 computer. It has occurred to me that your organisation may well be missing a valuable share of the market in this country through not being represented here. Your Corporation's products appear to be competitive in price and might well be able to share a portion of the market which is presently held by I.C.T. with their 1900 series computers. Further, during my five years residence in this country, I have observed that this market does not yet seem to be ready for the large systems offered by the competition. A great many of the smaller firms are still in the "unit record" era, and since the use of service bureaux is not widely accepted, the logical next step during expansion is to a compact computer system.

Should you consider representation in this country, it would be essential to provide an excellent after-sales service. Your system of employing Salesman-Engineers for this purpose would probably work very well here. So far as I am aware no other computer manufacturer currently uses this system in this country, and in view of an experimental period during which time I worked on this basis, I can say that this novel approach seems to pull.

If you would like to investigate further the possibilities of opening a branch office or of nominating a representative in South Africa, I shall be pleased to assist you in your enquiries as far as possible. Further, if after due consideration you do decide to enter the South African market, I should be grateful for inclusion on your list of possible representatives whether with your organisation or as a full-time agency. In the hope that it will be of interest, I enclose a resume of my career to date. I would be grateful if you could omit to discuss this matter with my present employers for the moment.

I hope to hear from you in due course.

Yours faithfully,

A handwritten signature in cursive script, appearing to read 'R. Walrond', written in dark ink.

Richard H. Walrond.

Resumé : Richard Herbert Walrond.

Born at Northampton, England, 21st April 1936. / 31

Married with two children.

Education: Normal primary education. Secondary education at boarding school. British General Certificate of Education.

Career details:

<u>Approx. dates.</u>	<u>Name of employer.</u>	<u>Occupation.</u>
1953 to 1954	United Counties Omnibus Company.	Clerk.
1954 to 1956	Royal Air Force.	Ground radar operator.
1956 to 1959	United Counties Omnibus Company.	Traffic management trainee. Assistant to area manager.
1959 to 1961	Newport Instruments.	Electronics inspection. Production chargehand.
1961 to 1964	Leo Computers.	Computer maintenance engineer. (Came to South Africa on contract during this time.)
1964 to 1965	Hans Pollack & Co.	Electronic components salesman.
1965 to Present.	<u>Control Data</u> (South Africa).	Customer engineer. Duties have included software support, personnel training, sales assistance, etc., in addition to normal maintenance work.

Comments:

My duties with the United Counties Omnibus company included traffic scheduling, personnel control, and the interviewing of personnel for recruitment purposes.

The time which I spent in the Royal Air Force was compulsory. I held the rank of Corporal, and was in charge of the Station armoury in addition to normal duties.

March 5, 1968

C
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P
Y

Mr. J. P. Coleman, Chairman
Gresham Lion Group Limited
Twickenham Road
Hanworth, Middlesex, England

Dear Mr. Coleman:

Thank you for your letter of February 22, 1968. We will be pleased to welcome Mr. Clegg to Digital.

I suggest you have Mr. Clegg call us from New York and make any arrangements with Dr. Ronald Smart, Sales Support Manager.

Sincerely,

Theodore G. Johnson
Vice President, Sales

TGJ:mr

cc: Dr. R. Smart

bcc: Mr. K. Olsen (for file)

2/28

Come up to Maynard from New York -
Contact Ron Smart

● From New York - Contact Dave Denniston
Preliminary discussions

Following return UK - Contact Tom Dalzell
Discuss Requirements

Manufacture Magnetic Tape Heads-----
& perhaps ulterior motive might be to sell
them to us.

*Red
to answer*

John Leng

GRESHAM LION GROUP LIMITED.

TWICKENHAM ROAD, HANWORTH, MIDDLESEX

TELEPHONE 01-894 5511

TELEGRAMS 'GRESHAM FELTHAM'

YOUR REF

OUR REF JFC/JH

22nd February, 1968

The President,
Digital Equipment Corporation,
146, Main Street,
Maynard,
MASS.
U. S. A.

Dear Sir,

Our Managing Director, Mr. J.A. Clegg, is visiting the States and would like to call on your company some time between the 16th - 18th April to discuss the prospects of incorporating your products in systems we are contemplating building and shall be glad if you will let me know the name of the person whom he should contact on his arrival in New York.

Yours faithfully,



J.P. Coleman
Chairman

I.C.Box 38,

Linden,

Transvaal,

R. of S.A.

17th February 1960.

The President,
Digital Equipment Corporation,
Maynard, Massachusetts.

Dear Sir,

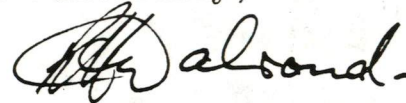
I am aware that you have had enquiries from South Africa about your systems, and some months ago your organisation kindly sent me literature about the PDP 9 computer. It has occurred to me that your organisation may well be missing a valuable share of the market in this country through not being represented here. Your Corporation's products appear to be competitive in price and might well be able to share a portion of the market which is presently held by I.C.T. with their 1900 series computers. Further, during my five years residence in this country, I have observed that this market does not yet seem to be ready for the large systems offered by the competition. A great many of the smaller firms are still in the "unit record" era, and since the use of service bureaux is not widely accepted, the logical next step during expansion is to a compact computer system.

Should you consider representation in this country, it would be essential to provide an excellent after-sales service. Your system of employing Salesman-Engineers for this purpose would probably work very well here. So far as I am aware no other computer manufacturer currently uses this system in this country, and in view of an experimental period during which time I worked on this basis, I can say that this novel approach seems to pull.

If you would like to investigate further the possibilities of opening a branch office or of nominating a representative in South Africa, I shall be pleased to assist you in your enquiries as far as possible. Further, if after due consideration you do decide to enter the South African market, I should be grateful for inclusion on your list of possible representatives whether with your organisation or as a full-time agency. In the hope that it will be of interest, I enclose a resume of my career to date. I would be grateful if you could omit to discuss this matter with my present employers for the moment.

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1965 to Present.	Control Data (South Africa).	Customer engineer. Duties have included software support, personnel training, sales assistance, etc., in addition to normal maintenance work.

Comments:

My duties with the United Counties Omnibus company included traffic scheduling, personnel control, and the interviewing of personnel for recruitment purposes.

The time which I spent in the Royal Air Force was compulsory. I held the rank of Corporal, and was in charge of the Station armoury in addition to normal duties.

March 4, 1968

Mr. Fritz J. Russ
Director
Systems Research Laboratories, Inc.
500 Woods Drive
Dayton, Ohio 45432

Dear Mr. Russ:

We are sorry about the confusion with respect to the 570 units. By changing job assignments, I think we have worked out a way in which we can deliver the two transports to you between the 15th and 30th of March; we hope it will be the 15th.

There has been some misunderstanding regarding this order. According to our records, the promised delivery date is late in April, but we do appreciate the importance of this and will do everything we possibly can to get it out by the middle of this month.

Please feel free to call on me at any time you have problems or misunderstandings.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

bcc: Bob Fronk, Ann Arbor Office
Jack Shields
Al Alexanian

C
O
P
Y



Systems Research

LABORATORIES, INC.

500 WOODS DRIVE
DAYTON, OHIO 45432
(513) 426-4051

FRITZ J. RUSS
DIRECTOR

February 21, 1968

Dear Mr. Olsen,

Recently, a matter has been brought to my attention by the Manager of our Data Systems Division, Mr. Roy Griffis, which I feel necessitates this correspondence.

On October 16, 1967 Systems Research Laboratories placed a purchase order with Digital Equipment Corporation for two Type 570 Magnetic Tape Transports and one Type 12 Memory Module. SRL purchased this equipment as part of an Air Force contract and SRL's performance on this contract was predicted on fulfillment of delivery schedules promised by DEC. In fact, the initial interest in the program was generated by DEC stating that several 570 transports were available for immediate delivery. None of the promised delivery dates have been met and, in fact, recent contacts have stated that delivery on the 570 may be as long as nine months. Needless to say, this situation has caused us considerable embarrassment, both professionally and financially, with a very old and very good customer.

*not true
earliest March 31
latest July*

*6mo AEO per JAS
Not true Type
12 memory shipped
12-22 or there.*

Systems Research Laboratories was one of Digital Equipment Corporation's first solid supporters, placing our first purchase order nearly seven years ago. Since then our records show we have purchased approximately one million dollars in equipment and services. We hope the phenomenal growth of DEC within the past few years will not necessarily cause poor service to old customers.

Delivery of the 570 transports before 15 March 1968 is essential in the performance of this program. We will appreciate your prompt attention to this matter.

Sincerely yours,

Fritz
Fritz J. Russ

Mr. Ken Olsen, President
Digital Equipment Corporation
Maynard, Massachusetts

March 4, 1968

Headquarters
U. S. Army Electronics Command
Fort Monmouth, New Jersey 07703

Attention: J. A. McClung

Reference: AMSEL-RD-LNI

Gentlemen:

We want to thank you for your invitation to participate in the conference on Aviation Electronics being held March 5, 6, and 7. We would like to do what we can to help in this program, but the meeting comes at the same time as our mother company's annual meeting, so all our senior people, including myself, will be tied up.

In the past, we have avoided military projects because this work is easier, but we would like to be invited to any other symposiums because we would like to do anything we can during the conflict.

Very truly yours,

Kenneth H. Olsen

KHO:ecc

C
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UNITED STATES ARMY
ELECTRONICS COMMAND

ARMED FORCES COMMUNICATIONS
AND ELECTRONICS ASSOCIATION

ARMY AVIATION
ASSOCIATION OF AMERICA

PRESENT

AN

ADVANCED PLANNING BRIEFING

AND

TECHNICAL SYMPOSIUM

ON

"AVIATION-ELECTRONICS"

5-6-7 MARCH 1968

FORT MONMOUTH
NEW JERSEY

1. Clearances
Clearances of SECRET for this specific briefing and technical symposium signed by organization Security Officers are required for each conferee. See inclosed Security card and instructions for completion.
2. Pre-registration
 - a. The inclosed registration card and clearance card should be completed as per instruction so as to reach its destination by 15 February 1968. Registration will be on a first come basis. No refunds after 25 February 1968.
 - b. Registration fee will include all social periods, luncheons, banquet, dinner, coffee breaks, and bus transportation.
3. Hotel Berkeley-Carteret Registration Center: The Registration Center will be located in the Palm Court, opposite the elevator, from 1500 through 2300 hours on Monday, 4 March 1968 and will provide the following services:
 - a. Registration of attendees
 - b. Security verification
 - c. Issuing of badges, programs and tickets for social events.
 - d. Air and rail transportation services
 - e. General information
4. Hexagon Registration Center - located in lobby at Main Entrance of Hexagon Building, from 0800-1700 hours on 5 and 6 March 1968 and will provide the following services:
 - a. Registration
 - b. Security verification and security stamping.
 - c. Message Center for incoming calls and messages (corridor to auditorium).

- d. Air and rail transportation services.
 - e. General information.
- Note: Conferees may be reached on the following corridor telephones:
During sessions: Area Code 201, 535-1578 or 535-1849
After sessions: Area Code 201, 775-5000 (Berkeley-Carteret).

5. Transportation:
 - a. Air: All major airlines arrive at Newark, New Jersey, and in New York at La Guardia and Kennedy Airports. It is recommended that arrivals and departures should be scheduled for Newark Airport since travel time from Newark to Monmouth by vehicle (rent-a-car) is approximately forty-five to sixty minutes. Travel time from La Guardia and Kennedy Airports by vehicle varies from two to three hours.
 - b. Suburban Airlines: Available from the airports to Red Bank Airport, New Jersey, and is prompt yet not too costly. Fares: One way - \$12.60 including tax, from any of the airports.
 - (1) From: Kennedy Airport - if you arrive on United Airlines, meet at Air Taxi Counter; if you arrive on other airlines, meet at American Airlines Gate 11.
 - (2) From: Newark Airport - meet at East Arcade, Gate 7.
 - (3) From: La Guardia Airport - meet at American Airlines, Gate 4.

All flights leave every hour and one half during the day. After 1700 hours, every hour on the half hour.

- c. Asbury-Red Bank Limousine Service - direct limousine service is available to Asbury Park from Kennedy (\$9.50) and from Newark Airports. The cost from Newark Airport is \$6.50. Call 995-9242 on arrival at either of these airports.
- d. Taxi and Rent-a-Car (Avis or Hertz Service): Available from all airports.
- e. Rail Transportation: Those traveling by rail should change trains at the Pennsylvania Station, New York City, for railroads serving Red Bank and Asbury Park, New Jersey.
- f. Private Automobiles: Those traveling south on the Garden State Parkway to the Berkeley Carteret Hotel should take Exit 102 to Route 66; those traveling north on the Garden State Parkway, should take Exit 100B to Route 66 to Asbury Park. Those driving direct to ECOM, Hexagon, drive south to Exit 105, turn left (just beyond toll booth) on Hope Road, turn left on Corregido Ave., (just beyond railroad crossing) to the Hexagon. See inclosed map.
- g. Bus Transportation Service: During the briefing, special buses will be furnished daily for all conferees from the hotel to the Hexagon, Field House, Myer Hall, Armstrong Hall, Squier Hall and return. (Fort Monmouth does not provide transportation for conferees to and from airports, station, etc., for briefings and symposia.

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ESC-FM 279-68

PROGRAMS

ECOM-AFCEA-AAAA ADVANCED PLANNING BRIEFING AND TECHNICAL SYMPOSIUM ON AVIATION ELECTRONICS

Guest Speaker Program Fort Monmouth, New Jersey Field House		Advanced Planning Briefing Auditorium, Hexagon Program		Technical Symposium Myer Hall, Squier Hall and Armstrong Hall Program		Industry Briefing and Technical Symposium - Speakers and Chairmen
5 March 1968	Luncheon	5 March 1968	Session I	5 March 1968	Session I	<u>Industry Briefing Speakers</u>
Lieutenant General Harry W. O. Kinnard Commanding General Combat Developments Command		Tuesday, 1400-1700 hours	Aviation Electronics Army Aviation Avionics Systems	Tuesday, 1400-1700	Systems Engineering and Analysis Surveillance and Electronic Countermeasures Antennas for Communications Command Control	Major General William B. Latta Colonel Edwin L. Powell Colonel James L. Burke Colonel Robert W. Studer Mr. Kenneth M. Barnett Dr. Eduard A. Gerber Mr. Theodore J. Sueta Dr. Robert A. Wiseman
5 March 1968	Dinner	6 March 1968	Session II	6 March 1968	Session II	and Other Scientists and Engineers of US Army Electronics Command
To be announced.		Wednesday, 0830-1145	Atmospheric Sciences Communications Electronic Warfare	Wednesday, 0830-1130	Environmental Sensing Systems Engineering and Analysis Antennas for Communications Communications Relay	<u>Technical Symposium Chairmen</u>
5 March 1968	Luncheon	6 March 1968	Session III	6 March 1968	Session III	Dr. George Kozmetsky Dean, College Business Foundation University of Texas
To be announced.		Wednesday, 1400-1700	Aviation Electronics Engineering Components and the New Look in Electronics	Wednesday, 1400-1700	Cockpit Environment Installation Engineering and Testing Formation Flight Human Engineering Atmospheric Systems	Dr. Eugene G. Sharkoff Program Director Pennsylvania-Princeton Army Avionics Research Contracts
6 March 1968	Dinner/ Entertainment Night	7 March 1968	Session IV	7 March 1968	Session IV	Dr. Harold P. VanCott American Institute of Research Princeton University
Registration		Thursday, 0830-1145	Combat Surveillance (Night Vision and Target Acquisition) Fundamental Scientific Problems in Aviation Funded Program of R&D	Thursday, 0830-1145	Cockpit Environment Navigation Automatic Controls Stabilization Intelligence Systems Air Traffic Regulation	Dr. Harold A. Zahl Consultant, USAECOM and Other Eminent Scientists and Engineers
4 March 1968	Hotel Berkeley-Carteret Palm Court					
5 March 1968	Hexagon Building Lobby					
Theme:	Fresh Winds, New Approaches					



DEPARTMENT OF THE ARMY
UNITED STATES ARMY ELECTRONICS COMMAND
FORT MONMOUTH, NEW JERSEY 07703

IN REPLY REFER TO:

AMSEL-RD-LNI

31 January 1968

Mr. Kenneth H. Olsen
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts 01754

Dear Mr. Olsen:

From the inception of the conflict in Southeast Asia, it has been obvious that this action differs substantially from any past warfare in which our country has been involved. Totally new concepts, tactics, equipment, and techniques have been and must yet be developed for future counter insurgency warfare.

A part of this new approach, air mobility, has become a watchword within the Army. As dynamic as air mobility is, it cannot realize its ultimate potential without the vast complex of aviation electronics needed in support. Radical new approaches in aviation electronics research and development are required.

In the translation of battle requirements into technical reality, I consider the briefing of industry to be of inestimable value. Accordingly, the Monmouth Chapters of the Armed Forces Communications Electronics Association, the Army Aviation Association of America and my command are co-sponsoring a three-day Advanced Planning Briefing and Symposium on the technological problems of Aviation Electronics. Conference plans include a series of presentations for advance planning by industry. Concurrently scientific and engineering papers on selected subjects will be presented. This conference will be held on Tuesday, Wednesday and Thursday, 5, 6, and 7 March 1968, at Fort Monmouth. Classified information to include SECRET will be covered.

Subjects of the conference include the Aviation-Electronics mission systems, including command control, communications relay, electronic warfare, surveillance and target acquisition; the aircraft electronics required for the fire power, observation and utility aircraft; the environmental support furnished by air traffic regulation, ground support equipment, guidance and control, micrometeorological systems, radio navigation and terminal landing operations; the related supporting developments, including components development, reliability, electromagnetic compatibility and human engineering. Many functional techniques are involved of which a few are altimetry, communications, navigation, formation flight, airborne surveillance sensors, radio navigation and position fixing.

This meeting will provide a unique opportunity to compare approaches and hardware and to discuss problems and plans for the next five years. I want to point out that I intend to release funding information covering pertinent areas of this command's research and development effort. This dynamic postulation of our aviation electronic development should provide you with the specific direction you need to pursue your in-house efforts. I wish to extend an invitation to you and one other top member of your team to join us at the Advanced Planning Briefing. Additional representatives may register for the Technical Symposium. Due to space limitations for lunches and dinner programs, total attendance will be limited to 840 persons.

To assure the provision of accommodations, security clearance, and transportation, I would appreciate a response by 15 February 1968. The necessary forms are inclosed.

I hope you can be with us. I feel sure the three-day program will promote closer cooperation and clearer understanding among members of the Defense Department - Industry team.

Sincerely,



W. B. LATTA
Major General, USA
Commanding

7 Incl

1. Program
2. Registration card
3. Security card
4. Security instructions
5. Hotel card
6. Area map
7. Return envelope

ESC-FM 278-68

ECOM-AFCEA-AAAA
INDUSTRY BRIEFING AND TECHNICAL SYMPOSIUM ON
"AVIATION ELECTRONICS"
5-6-7 MARCH 1968

INSTRUCTIONS FOR SECURITY REGISTRATION

1. All conferees are required to complete the inclosed security registration form. The reverse of the form is to be completed and certified by the appropriate security officer. (Company security officer for industrial representatives, activity security officer for government employees, and military personnel). The completed form will be returned to the address indicated.

2. At the time of registration indicated in the inclosed program, your security clearance will be verified by representatives of this office by means of individual identification. The following identity documents will be accepted:

- a. Military or civilian identification cards for government personnel.
- b. Company identification or security cards.
- c. A valid drivers license.
- d. Passport or diplomatic identity card for foreign conferees.

3. The completed security form must be received at this installation not later than 20 February 1968. Security clearances hand carried by industrial conferees will not be honored. (See paragraph 34f, DOD Industrial Security Manual), nor will security clearances on file at this activity be accepted for admittance to this meeting.

4. Government travel orders will be accepted if they contain the necessary security information.

5. No photographic or recording equipment will be carried into the meeting nor will notes be taken during any classified presentations.

6. If you desire a copy of the proceedings of this meeting, please indicate on the security form.

NOTE: If subsequent to submission of clearance date, the attendee finds that he will not be able to attend, and it is desired than an alternate replace him, the facility or activity security officer should be requested to forward clearance data on the alternate to the address indicated by electrically transmitted message followed by written confirmation. For any questions dial ECOM Electronics Intelligence, Area Code 201, 535-1905 or 535-2387.

March 1, 1968

Mr. W. Thomas Hinds, Jr.
7 Garfield Street
Maynard, Massachusetts 01754

Dear Mr. Hinds:

Thank you for offering private flight services to Digital Equipment Corporation.

We have considered your offer, and, in analyzing our traveling, find that we do very little within the radius which is practical to do by small plane. Therefore, we feel we have to give you a negative answer.

Very truly yours,

Kenneth H. Olsen

KHO:ecc

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February 5, 1968

Mr. Kenneth Olsen, President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts 01754

Dear Sir:

First, may we introduce ourselves. My name is Mr. W. Thomas Hinds, Jr. and my associate is Mr. Richard Angelino, both qualified commercial pilots with instrument and multi-engine ratings.

We wish to begin a charter service available *only* to you and your associates.

A private flight service would benefit a growing business like yours with its many busy executives, simply because of its low cost and, of course, the time-saving feature.

Our plan is to make available and easily accessible to you an aircraft that would suit your needs at any given time. We assure you prompt, efficient service from any airport in the continental United States, and Canada.

We look forward to hearing from you. May we speak with you at your earliest convenience.

Please phone 256-3362 or 897-2558 or write Mr. W. T. Hinds, Jr., 7 Garfield Street, Maynard, Massachusetts 01754.

Thank you for your consideration.

Sincerely,

W. T. Hinds
R. Angelino

W. Thomas Hinds Jr.
Richard A. Angelino

March 4, 1968

Mr. H. H. Kundler
Vice-President, Sales
A C Compacting Presses, Inc.
1 East 57th Street
New York, New York 10022

Dear Mr. Kundler:

Thank you for your letter of February 21 offering to give a seminar to acquaint us with your equipment. We have discontinued our work in the ceramic components area, and, therefore, have no further need for your product.

Thank you for following up with us, and we are sorry to have to give a negative answer to your generous offer.

Very truly yours,

Kenneth H. Olsen

KHO:ecc

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Y-7815

A C COMPACTING PRESSES

INCORPORATED

1 EAST 57TH STREET • NEW YORK, N. Y. 10022

TEL. (212) 755-8213

February 21, 1968

ORIGINAL



PRESSES

COURTOY
 PRECISION ROTARY PRESSES

Digital Equipment Corporation
 146 Main Street
 Maynard, Massachusetts 01754

Attention: Mr. Kenneth H. Olsen
 President

Dear Mr. Olsen:

Some years ago CERAMIC INDUSTRY MAGAZINE had forwarded to us your inquiry regarding our 20-ton Dorst Compacting Press which you had seen in one of our advertisements in their magazine.

At that time we sent you a general data sheet which illustrated the TPA 15, a two-page summary describing the outstanding features of the Dorst Presses, and a quotation on the TPA 15.

We would like to follow up on this interest today and advise you that various changes have been made by adding new features to our Dorst Presses which range in size from 2 tons up to 385 tons.

If you would like to acquaint yourself with our equipment, we would be glad to visit with you and give a seminar in your plant at which time films would be shown with emphasis on press motions and tool set-up. At the same time, we would like to offer you our test facilities in Nixon, N.J. where presses up to 110 tons can be demonstrated to you.

We would appreciate hearing from you whether you would like us to supplement the data sent to you with our letter dated May 19, 1964.

Also, do you have any specific interest or application for any of these presses?

May we hear from you?

Very truly yours,

A C COMPACTING PRESSES, INC.



H. H. Kundler
 Vice President - Sales

HHK/asf

CONTROL ENGINEERING

Al Eubank

THE MAGAZINE OF INSTRUMENTATION • CONTROL • SYSTEMS • DESIGN

February 12, 1968

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Main Street
Maynard, Massachusetts

Dear Mr. Olsen:

I seek to enlist the cooperation of your company in an undertaking which I believe will be beneficial both to you and to us. The undertaking is that of developing a series of market indicators for the controls business.

As you well know, marketing and business activity information in the control field is remarkably hard to come by. For this reason, the Marketing Services Co., division of Dun & Bradstreet, Inc. and we on CONTROL ENGINEERING propose to develop a series of indicators for the controls business that would be published monthly in CONTROL ENGINEERING.

These indicators would permit individual companies to measure their own month-to-month performance against trends of specific product lines and the total field. As a benefit to those who participate, an advance copy of the monthly index report will be sent to cooperating companies several weeks before publication in CONTROL ENGINEERING. The Marketing Services Co., division of Dun & Bradstreet, Inc. would handle the complete project, and only Mr. Paul L. Hopkins, Jr., Vice President--Research, and one or two of his key people would see the raw data. The Marketing Services Co. treats individual company figures as absolutely confidential. It has never had and does not expect to have a complaint about violations of confidence in handling individual company figures. In fact, each participating company will be given a code number so that the company's name will never appear throughout the tabulation.

The Marketing Services Co. has considerable past and current experience in similar information-gathering activities. It serves a number of trade associations as the confidential clearing house for shipment and backlog data. In these cases all information is distributed only to member companies and is not available for any other purpose. Rigid controls are exercised to prevent disclosure and maintain confidentiality of data entrusted to this division of Dun & Bradstreet.

We plan to develop a total index for the field as well as 13 sub-group indices. These sub-groups with the specifics that each will relate to are listed on the attached sheet. There are certain product categories that are left out either because of the dominance of one or two companies or because clear parallels can be drawn between listed and unlisted products. In total, the indices should give a clear indication of market movement.



Mr. Kenneth H. Olsen
February 12, 1968
Page 2

While a few of these areas may be partially covered by trade association statistics, nowhere is there available a real measure of control field activity. This will furnish one, and on a regular basis.

Even where figures on your specific product line are available through your trade association, I believe you would find interest in a preview of activity in other control areas not reported by your association. For example, a relay manufacturer might want to keep a close eye on progress in fluidics and moving-part pneumatic logic.

The proposed indices would be based on the dollar value of new orders on a monthly basis. Initially, the Marketing Services Co. would need from you a report of your new orders for each month back to January 1967 for comparison purposes and, thereafter, the requirement for participating companies is merely to fill in and return a simple form each month.

To reduce the figure-generating effort of the participating companies and to make sure we know exactly what the figures mean, we are asking each company to report on specific product areas. We would like DEC to furnish information on digital control computers in Category 4 and on logic elements in Category 5.

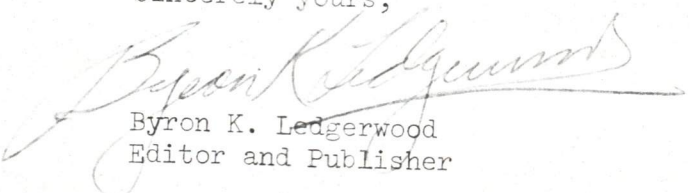
January 1967 would probably be selected as the base period (equal to 100) and sub-group indices and the total index would be calculated based on current orders versus those of the previous month.

You represent one of over 100 companies we are asking to cooperate in this project. If, as I very much hope, your company will cooperate in this mutual effort, would you please let me know so that I can tell the Marketing Services Co. to provide you with the necessary forms.

An important point is to select a specific contact (or contacts) within your company with whom we would deal every month, and to provide for continuity if this contact should change. I would appreciate it if you would give some thought to this.

If you have any questions I would be happy to discuss them with you by telephone or to meet with you personally.

Sincerely yours,


Byron K. Ledgerwood
Editor and Publisher

BKL:ka
Attachment

Product Breakdown For
Control Market Index

1. Process Control Equipment
(including stream analyzers; pneumatic and electronic recording and indicating analog controllers; pneumatic and electronic process-variable transmitters; and proportioning process control valves and valve actuators and positioners)
2. Electric and Electromechanical Drive Elements
(including ac and dc adjustable speed drives, dc motors, control clutches and brakes, and mechanical and electromechanical adjustable speed drive elements of under 500 hp)
3. Stepping Motors
4. Digital Control Computers
5. Electric Relays, Switches, and Logic Elements
(including electromechanical relays, reed devices, motor starters, limit and proximity switches, and electronic and magnetic relaying and logic elements)
6. Power-level Hydraulic and Pneumatic Control Equipment
(including hydraulic and pneumatic directional control valves, pressure and flow control valves, cylinders and motors, hydrostatic drives, servovalves and solenoid valves)
7. Signal-level Fluidic and Moving-Part Pneumatic Control Devices and Systems
(including all types of modulating [analog] and on-off [digital] fluidic equipment, and valve-type and diaphragm modulating and on-off devices for signal-level control)
8. Illuminated Display Devices and Systems
(including lighted switches, indicating lights, "Nixie" tubes, rear projection readouts, cathode ray tubes, "bulb-matrix" displays, and back-lighted pictorial or schematic display panels)
9. Program Control Input Devices, Counters; and Timers
(including those special curve-followers, plugboards, card and tape readers, mechanical and electromechanical drums, and other devices specifically designed for information input in program control systems. It does not include more or less standard punched tape and card readers and magnetic tape readers which are widely used other places in addition to their use in program control systems. Also includes electrical, electromechanical, and pneumatic timers and mechanical and electromechanical counters)

10. Electronic Control Components
(including photoelectric devices, power transistors, silicon controlled rectifiers, triacs)
11. Electronic Test Equipment
(including high speed counters, digital voltmeters, oscilloscopes, and oscillographic recorders)
12. Data Handling Equipment
(including punched tape equipment, magnetic tape equipment, digital data printers, drum and disc memories, and core memories)
13. Selected Control Components
(including operational amplifiers, shaft encoders, potentiometers, electromechanical servo components)

digital

February 26, 1968

Mr. Byron K. Ledgerwood
Editor and Publisher
CONTROL ENGINEERING
466 Lexington Avenue
New York, New York 10017

Dear By:

Ken Olsen has referred your recent letter to me.

The new undertaking to develop a series of market indicators for control businesses with Dun & Bradstreet sounds like an excellent idea and certainly most worthwhile to your readers.

Unfortunately, we are not quite set up to provide the particular information you need at this time. If we can make the necessary adjustments to give Dun & Bradstreet these statistics on a regular basis, I'll be in touch with you.

In the meantime, thanks for thinking of us By.

Best regards,



Alan L. Erskine
Public Information Manager

ALE/smf

cc: ✓ Ken Olsen
Allen Kluchman

February 21, 1968

Professor Wyle Childs
Material Engineering Department
Rensselaer Polytechnic Institute
Troy, New York

Dear Wyle:

It was good to hear from you, and I look forward to seeing you on March 6th.

Enclosed is a map showing how to get to Digital.

Sincerely yours,

KHO:ecc

Enclosure

C
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Y

February 19, 1968

Mr. Maurice Ponte
Compagnie Generale de Telegraphie Sans Fil
B P 2000
78 Versailles, France

Dear Mr. Ponte:

I enjoyed very much having lunch with you while in Paris recently and hearing about your activities in France.

Enclosed is a copy of a reprint entitled, "Good Managers Don't Make Policy Decisions," which Arnaud suggested you might be interested in.

Sincerely yours,

KHO:ecc

Enclosure

C
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February 16, 1968

C
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P
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Mr. Norman Taylor
Arthur D. Little, Inc.
25 Acorn Park
Cambridge, Massachusetts

Dear Norm:

Last week while visiting with Jean-Claude Peterschmitt, Manager of our French subsidiary, he told me how much he enjoyed working with you at Arthur D. Little. I developed the idea then that we have been very foolish in not keeping our consulting friends up to date on our products. Therefore, I am taking the liberty of sending you a collection of our product literature.

We feel we are now the strongest company in our field in both hardware and software. We have an exceedingly competent crew of programmers, and we are now the only one in our field to have all the basic programming done. All our competitors have a long way to go before they have competing software.

When Cambridge NASA asked for bids on a large time-sharing computer to be delivered a year from now, we were the only one to guarantee delivery of good time-sharing software for a large computer. We are confident of this because we had it working for two years on the PDP-6.

If we can give you any more information, please let me know.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

Enclosures PDP-8, 8/1, 8/S, LINC-8, PDP-9, 10, Annual Report

308
o - Stan Olsen

digital

February 15, 1968

Dr. Ivan Flores
Computer Consultant
931 President Street
Brooklyn, New York

Dear Dr. Flores:

Your letter dated January 9 to Ken Olsen has been referred to me. We have read with interest the material you sent us from your new book entitled "Computer System Organization" which contains material on our PDP-8.

The material has been reviewed and notations have been made on your copy to denote what we feel as inaccuracies. While the bulk of the material is factually accurate, we do detect a negative feeling on your part toward the 12-bit computer in some of your descriptions. We have noted one or two of these instances on the copy.

I feel you have stated the limitations and values of the PDP-8 in your first paragraph, thus allowing the reader to make his decision based on his needs. This is done quite fairly. However, in certain other places in the copy, your writing seems to dwell on what you feel are negative aspects of the machine when there doesn't seem to be any reason to do so after you have set the ground rules in your opening statement.

Other than these specific comments, I feel you have handled the material quite well. I thank you for this opportunity and your interest in Digital Equipment Corporation. I shall be happy to hear any comments you may have on our criticism.

Sincerely,

Stephen D. Bowers

Stephen D. Bowers
Product Promotion Manager
Small Computers

SDB:meb

Encl.

✓cc: K. Olsen

Chapter 5 THE PDP-8

5.1 THE SMALL WORD PROBLEM

Small Memory Word

The PDP-8 uses a ^(12-bit, 10) ~~twelve-bit~~ memory word. This is sufficient for many applications of the computer where the precision of calculations can be kept low. It is particularly appropriate for measurement and control applications. *although multiple words may be used if higher precision is required.*

The data word is defined as a simple ^{12-bit} ~~twelve~~ bit datum. Operations upon it are performed either by bit picking (editing and masking) or by considering it as a binary number and performing arithmetic operations on it.

As a binary number, the quantity is manipulated as an unsigned integer. It is left to the programmer to provide subroutines which convert his signed numbers into this form. Signed numbers can be converted into two's complement notation. The computer, of course, is unaware of the sign and manipulates them like binary integers. Two's complement notation assures a properly signed result. The overflow ~~flip-flop~~ ^{flip-flop} called the link is provided for checking overflow.

The Command Problem

Since memory words contain exactly twelve bits, the problem is to fit command information into such a small word. The main memory supplied with the computer is generally 4K or 4096 locations. This turns out to be the twelfth power of two. Hence, to address even this small memory in the most effective addressing base number two, it is necessary to use twelve bits. This obstacle is removed by the paging system described in Section 5.3. *Note just about all 16-bit machines have the same problem.*

Even with paging, some compromise must be made between address size and the number of command bits available to specify the command.

Command Structure

In Figure 5.1.1, the command word is examined. Three bits are provided for the operation code. Hence, ^{basic} ~~only~~ eight commands are available. The command repertoire is expanded by providing an operate code. This permits us to use many more combinations for commands which do not require addresses because their operands

are implied. A second of the eight combinations is required to distinguish I/O operations using an expanded format also discussed later. This leaves six actual combinations for use as command codes. These are discussed in Section 5.5.

Seven bits allocated for address can address 128 words of memory using the paging scheme described later. The two remaining bits convey addressing mode. The first may request single indirect addressing; the second conveys which page is being accessed.

5.2 ORGANIZATION

Aim

The aim of the PDP-8 design is to implement a small, effective, inexpensive, high-speed, scientific computer with as little hardware as possible. The computer should interface with conventional I/O devices. It should also be able to talk to analog equipment and measuring devices to function on line for measurement and control application. And when it's free, it can act as a normal, small general-purpose calculator.

The Plan

The plan of the computer is presented in Figure 5.2.1.

MAR

The memory addresses 4096 locations. To do this, the address register must contain twelve bits.

MDR

All words brought from memory are placed in the MDR and are twelve bits long. The MDR is a versatile register since it ^{is} must also ~~be~~ used as part of the control subsystem. Further, it loads one of the operands which takes part in addition or subtraction. Finally, it is incrementable for use with the autoindexing feature described later.

IC

The instruction counter is called, by DEC, the program address register. It can hold twelve bits so as to be able to address all of memory. It is incrementable, as described later.

IR

A three-bit register holds the command for which execution is required. As we have seen earlier from the command structure, three bits convey the command.

AR

The A register or accumulator accumulates numbers during addition and subtraction. It has an overflow register called the link associated with it.

adder

A parallel binary adder provides fast two's complement addition of binary numbers. The AR and MDR are added together and the result placed in the AR.

control

The control unit monitors all the activity which is taking place.

IO

IO activity is examined in more detail later in this chapter. Figure 5.2.1 shows that there are two kinds of IO interfacing provided.

For slow devices, an interrupt is provided which allows the main program to go to a subroutine each time a slow device needs servicing. This is less sophisticated than the channel controller principle, but is especially useful in this small machine.

For fast devices, channel stealing is provided with the facility called data break. More space is devoted to this later.

5.3 PAGING

Current Page

The instruction counter consists of two parts: the leftmost part the most significant five bits contains a page number and will be indicated as ICP. The seven right hand bits describes a word number on that page and will be referred to as ICW. In any case, the IC points to one word in memory by its absolute address there.

At the end of a command, the instruction counter is incremented as in the conventional computer. We do this by adding one of the contents of the instruction counter. Generally, ICW is increased by one and ICP is unaffected: we advance

POP-8 is not commented

from one ^{word} bit to the next on the same page. Eventually we get to the last word on the page which is 177₈. Now when we add one to the IC, ICW becomes 000₈ and the page number is increased by one. Thus, program sequencing flows from page to page without interruption.

The contents of ICP distinguishes one of thirty-two possible pages. This page is called the present page.

Data Address

Data can be accessed in one of four possible ways.

To get data from the present page the ^{present page}~~indirection~~ bit, IB, is set to zero and the page bit, PB, is set to one to indicate that we are accessing the present page.

page zero

To obtain information from the base page, page 0, PB is set to 0 and IB is set to 0 indicating direct access to page 0.

indirectly

Data may be accessed indirectly from either the present page or the base page according to the setting of PB. In this case, IB is set to 1. Only single indirect addressing is possible. Hence, the address of the datum is obtained from the present or base page in twelve-bit absolute form. This address, which can refer to any page in the computer memory, is then accessed for the actual datum.

5.4 FETCH AND OPERAND ACQUISITION

Fetch

The operations which occur for the fetch cycle are presented in Figure 5.4.1 and are discussed below according to the numbers which appear in that figure:

0. Before the fetch operation occurs the signal called end is provided to the control unit. It causes the instruction counter to be incremented.

1. The contents of the instruction counter are passed over to the MAR and a memory ^{rc} call cycle is initiated.
2. The memory produces a datum placing it in the MDR.
3. The operation code is extracted from the MDR and inserted in the IR.
4. From the contents of the IR it is determined if this is an instruction which requires an operand. If so, the operand will be acquired as described below. Otherwise, execution begins immediately as described in Section 5.6.

Direct Access, Present Page

The acquisition of a directly accessed operand is shown in Figure 5.4.2 and discussed below according to the numbers which appear in that figure:

1. The present page indicator, ICP is transferred to the page portion of the MAR, MARP.
2. The word portion of the MDR, MDRW, is transferred to the word portion of the MAR, MARW.
3. A recall cycle is requested.
4. The contents of the address presently in ^{H₁₂} MAR is placed in the MDR.

Direct Access of Page 0

This is shown in Figure 5.4.3.

1. MARP is set to 0 because the page bit is 0.
2. The contents of the MDRW is placed in MARW.
3. A recall cycle is requested for the datum is placed in the MDR.

Indirection

This is illustrated in Figure 5.4.4.

1. According to the setting of the page bit, however, MARP is set to 0 or the contents of ICP is placed there.
2. A recall cycle is requested.

3. The datum is placed in the MDR.
4. The entire contents of the MDR is placed in the MAR & this is our indirection cycle.
5. A recall cycle is initiated.
6. The datum is placed in the MDR.

Autoindexing-

The PDP-8 computer has no indexing or other form of address modification. This is a severe limitation when loops are encountered. One way around this is the autoindexing feature. It permits certain cells of memory to be incremented automatically when they are used indirectly.

not favorable working

The autoindexing feature is invoked only under the following conditions:

1. Cells 10_8 through 17_8 are referenced.
2. They are referenced indirectly.

When these cells are referenced directly they are not autoindexed; when these cells are addressed indirectly we cannot avoid autoindexing; no other cells are autoindexed.

The autoindexing feature requires the incrementation of the contents of the indirecting address cell before it is used as an address. The new quantity is returned to memory. It is also used as a pointer to the data.

example

Consider the command

ADD 10 012 (5.4.1.)

It references memory indirectly through cell 12, page 0, requesting autoindexing. Suppose that cell 12 contains octal 5432 thus

(12) = 5432₈ (5.4.2)

The contents of cell 12 is incremented before it is used as a pointer to the desired data. Hence the octal command executed is

ADD 5433 (5.4.3)

At the end of the execution of this command cell 12 contains the new quantity 5433.

execution

Let us see how a command involving autoindexing is performed. This is illustrated in Figure 5.4.5.

1. The instruction is placed in the MDR.
2. The mnemonic is (ADD). The three bit command code is placed in the IR.
3. The indirect flipflop is set to one indicating that indirection is required.
4. 0's are placed in the most significant portion of the MAR.
5. 12_8 is placed in least significant portion of the MAR.
6. The autoindexing detector determines that this is an autoindexing instruction.
7. The memory cell on page 0 is accessed and its contents brought to the MDR.
8. These contents are incremented by 1.
9. The incremented quantity is returned to memory.
10. The contents of the MDR is placed in the MAR.
11. The datum is placed in the MDR.
12. The rest of the command proceeds in the execute phase in the normal fashion.

5.5 COMMANDS

Main Commands

The main commands, with one exception, fall into the pattern established for FLAPJAC. The mnemonics the Digital Equipment Corporation uses for these commands are slightly different. The commands are presented in Table 5.5.1. The operation codes are designated by the first octal digit in the command word and range from 0 to 6 for the main commands.

ISZ

The one different command is called Increment and Skip If Zero. It brings the contents of the selected memory location into the memory data register.

There, this quantity is incremented by 1. Next we test to see if the MDR contains 0. If not, we continue the program by getting the next instruction from the next cell in sequence. If the MDR contains 0, a skip is requested. To do this, we doubly increment the instruction counter before the next fetch operation.

IO

IO operations are requested with the command with code 7_8 and the mnemonic (IOT) for input and output transfer. It is the format:

(IOT): 7_8 device, event (5.5.1)

Here device is a 6 bit designator for one of the possible peripheral devices which might be attached to the computer. Event permits or inhibits pulses at different times to be transmitted to the selected device. These pulses inform the device of its task or test the device to see how it's completed it's operation. More detail is provided about this later.

Operate

Since we only have a small command repertoire so far we seek a way for enlarging it. We do this with a special set of operate commands - they do not require explicit reference to an operand.

All operate commands have the same first digit, 7_8 . The meaning of the rest of the bits in the command word is somewhat specific. To increase the number of such meanings we divide operate commands into two groups according to the fourth bit in the command word.

group one

Group one operate instructions are diagrammed in Figure 5.5.1. Bit 3, the fourth bit in the command word, is 0 for group one operate commands. The meaning of the other bits is presented in the figure. Several of the bits require clearing or complementing either the accumulator or the links (overflow) bit. Bits 8, 9 and 10 are used for single or double left or right rotation. The last bit, bit 11, designates incrementation of the accumulator.

Several of these bits may be 1 at once. For instance, to get 1 into the accumulator, we can clear and increment the accumulator. A most useful command requests that the accumulator is complemented and incremented. Since negative numbers are represented with 2's complement notation, this command is used for making a positive number negative. Complementation means the 1's complement. This makes subtraction possible where no explicit subtract command exists in our repertoire. This is illustrated in Table 5.5.2. The subtrahend is placed in the accumulator with the command XMA. The 2's complement of the subtrahend is found using CIA. Now the minuend is added into the accumulator with the command ADD. The difference of the two is hence found in the accumulator.

group two

The group two commands illustrated in Figure 5.5.2 request skips of various sorts. The conditions for skipping are found in bits 5, 6 and 7. If these conditions are present, a skip is requested. Otherwise we do the next command in sequence.

To request that the conditions be reversed one is placed in bit 8. Now if the condition called for is absent, a skip is required. This is best demonstrated in Table 5.5.3. Here are some of the operate commands presented.

Skip commands are of group two. To skip on a zero accumulator we use a mnemonic SZA having a one in bit 6 but zero in bit 8. To request a skip on nonzero accumulator we again place 1 in bit six and also 1 in bit eight.

5.6 IO

Types

There are three kinds of IO operations possible:

1. Dedicated, called a program data transfer.
2. Interrupt called the program interrupt.
3. Cycle steal called data break transfer.

dedicated

A dedicated IO operation is one where no processing or control operation takes place. There is no simultaneity. All processing operations are held up

until the IO operations are completed .

interrupt

For an IO operation which occurs in interrupt in the PDP-8 a single word transfer between IO and memory is delegated to an IO device; when this single operation is complete, an interrupt of the main program takes place . This is most suitable for very slow devices where processing may then proceed while we wait for the next transfer to take place.

cycle stealing

Only certain IO devices and controllers operate on a cycle stealing basis similar to the channel control operation described earlier except that no subcommands are involved . A single command delegates an IO interchange of several words to a device controller . As each new access is required, a memory cycle is stolen for the transfer of information between memory and the device.

The remainder of this section is devoted to dedicated IO; interrupt and cycle stealing and discussed in the next section.

Dedicated IO

Control for a device is unidirectional; but some devices are bidirectional; A separate control is required for each direction for the device . For instance, when the teletypewriter is used to enter information, it's addressed differently than when the computer wishes to print out information.

The IO command consists of four octal digits. The first digit is 6₃ to indicate IO. The next two digits provide a choice of 64 control units. The fourth octal digit designates one or more pulses supplied to the device .

Figure 5 5.1 indicates control information going to the device controller . The last three octal digits are broadcast to all the device controllers over the IO control buss when the command code is 6₃. The two middle digits appear on the device selection buss. Each device controller has an unique DECODE which responds only to the code for this device. When that code is received

the output of the decoder permits the IOT pulses to activate the device. They direct the device to perform one of several tasks. We continue the explanation by providing an example.

Teletype write

The teletypewriter as mentioned earlier has a bidirectional device. The device contains a device buffer of eight bits. Let us now examine commands which apply to the teletypewriter when used as a teleprinter.

6041

This command begins with 6_8 indicating an IO command. 04_8 is the address of the teleprinter - the teletypewriter being used for printing. 1_8 is a query to determine if the flag in the device is set. If it is so set this requires a skip. Otherwise we do the next command in sequence.

Figure 5.6.2 shows how this command operates. The select pulses are supplied to the DECODE. Since we address unit 04 the decode produces an enabling signal to the gates. Next the IOT pulses arrive. Only IOT1 is sent out; it tests the flag flipflop. If this flipflop is set to 1, a signal appears on the skip buss. That buss is returned to the computer causing a skip only if a signal is present thereon.

6042

This is a request to clear the flag. The reader can follow its execution on Figure 5.6.2.

6044

This is a request to load the device buffer. The information source for this command is the accumulator. A character must have been placed there by an earlier command. This command causes IOT4 to enter the character from the accumulator into the device buffer. After the character is received in the buffer, the device causes the corresponding character to be typed on the teleprinter.

This is a combination of 6042 and 6044 requesting a data transfer and the clearing of a flag.

program

Figure 5.6.3 is a three step program which permits us to dispatch a character for printing in a dedicated fashion.

Write

Let us see the commands applicable to the paper tape reader. It too contains an eight character buffer.

6011

This is a skip-on-flag command.

6012

This requests that the accumulator be filled from the device character before.

6014

This requests that the device character buffer be filled from the paper tape reading device.

program

Figure 5.6.4 shows a dedicated program to read information from paper tape. First we request that the buffer be filled. Then we see if a character is available. If none is available, we do not skip but instead we return to the command which does the checking. When the character buffer is loaded we clear the accumulator and place the character from the buffer therein.

5.7 INTERRUPT; CYCLE STEALING

Interrupt Procedure

There is an interrupt flipflop, IFF in each device controller for which an interrupt can take place. This is illustrated in Figure 5.7.1. IFF can be set by the device controller according to the condition present in a device; it can be reset by computer signal.

There is another flipflop in the ~~device controller~~^{processor} which is used to inhibit the interrupt signal, the suspend flipflop designated SEE. A single signal ~~from~~ⁱⁿ the computer is used to suspend interrupts for all the device controllers; a similar signal is used to restore interrupts for all devices.

When a condition calling for an interrupt occurs for a device and no other interrupt has prevailed, this condition causes the IFF to go to one. If the SEE is also in a one condition an interrupt signal appears on the interrupt line. This causes an interrupt to take place.

The Interrupt

An interrupt for the PDP-8 operates exactly as though the command below were given

JAS 000

(5.7.1)

As any other command in the instruction sequence it can only take place after the current command has completed execution. The interrupt signal whenever it occurs sets a separate flipflop IPFF indicating that an interrupt is pending. At the completion of execution the IPFF forces the command of (5.7.1) into the instruction register. This causes the instruction counter to be stored at location zero and the address from the next command to come from cell 1, page 0. The interrupt subroutine takes care of all the housekeeping which takes place for the interrupt.

Software

There is only one kind of interrupt -- interrupts from all devices are handled in the same fashion. It is up to the software to distinguish the cause of the interrupt.

An interrupt causes us to jump to cell 1 page 0 which contains an unconditional jump to the first step in the service subroutine. Interrupt servicing for the PDP-8 is similar at least in concept to that described earlier:

1. Suspend all interrupts.
2. Save registers as required.
3. Make tests. The order in which the tests are made establishes a priority in servicing the devices.
4. Each test looks for a condition flag. When the flag is present it causes us to skip to the service routine.
5. The service routine places a device in operation again where possible and provides IO services to the program.
6. Registers may be unsaved.
7. Interrupts are restored. A delay is provided here to let us get back to the main program.
8. A return to the main program with the command

UCJ I 000

(5.7.2)

Priority Interrupt

With the system just outlined, can we permit an interrupt while servicing a previous interrupt?

The system does permit multiple interrupts. However, the software must be designed to cope with this. Suppose that we have a low speed device for which service is less important. Its priority then is low. The interrupt routine when initially entered shuts off all interrupts. It then checks to find the interrupting device. It checks the highest priority devices first. Upon reaching a certain priority level, it can permit interrupts in the testing and servicing.

This must be preceded by an operation which saves the contents of cell 0 in some safe location and also sets a flag to indicate that this is the case. Now we can go ahead and check in service the low priority interrupt which has occurred.

In the meantime, another interrupt may occur, presumably one of higher priority. When it does, we proceed with the testing about it and eventually find the cause of the second interrupt and service it. During this process other interrupts have been suspended.

At the end of servicing the second interrupt we check to see if a flag has been set indicating the presence of a former interrupt. If not, we return to the main program by an indirect jump through cell 0.

If we were servicing a low priority interrupt at the time of the high priority interrupt then the flag indicating this was set before interrupts were restored. Before continuing to service the first interrupt we return to cell 0 its contents from where it was stored safely before the interrupt servicing began. This permits us to return properly to the main program after servicing the low priority interrupt.

Data Break

The data break facility (DBF) is a stripped down channel controller. Unlike the channel controller, there is no subcommand string which indicates a sequence of operations to be performed.

The DBF can perform a single command requiring the transfer of a number of words of information between an IO device and main memory. This command is delegated from the program by the computer to the DBF.

This DBF is available ~~as an option~~ for high speed devices, ~~only~~.

The command issued to the DBF is generally in two or three parts.

1. An address indicates the place in core where the transfer is to begin.
2. A location for the intermediate medium indicates the other source or destination of the information for the IO device. This location may be implied, for instance in the case of magnetic tape, where it is assumed that the next block is to be read or written.

3. The quantity of information to be transferred is supplied. Again where information is dealt with in chunks of fixed quantity this information may be omitted.

In order to convey the command to the DBF we have stored control words at known locations in memory. The program delivers these portions of the command to the accumulator using a XMA; the information is then imparted to the device using a command whose mnemonic might be XMI. After the information is delivered, the device is started by one more command.

Memory is a single port subsystem. We should have a traffic controller to determine which facility next has access to the memory. We may consider entry to the traffic controller as consisting of a number of channels with a priority associated.

The DBF is identical to a channel stealing operation.

1. It takes place after the execution of the command presently delegated.
2. The MDR and the MAR are now free.
3. A location is supplied the MAR by the data break facility.
4. Data is sent to or received from the MDR by the data break facility.
5. The data break facility increments the core location number and decrements the count.

Table 5.5.1 PDP8 Commands

Octal	Mnemonic	FLAP	PDP8	Arrow Notation
0	ANDTA	AND		$(A) \& (M) \rightarrow A$
1	ADD	TAD		$(M) + (A) \rightarrow A$
2	ISZ			$(M) + 1 \rightarrow M$; $M \neq 0 \Rightarrow I+1$ $M=0 \Rightarrow I+2$
3	XMA	DCA		$(M) \rightarrow A$
4	UCJ	JMP		$\Rightarrow M$
5	JAS	JMS		$I+1 \rightarrow M$; $\Rightarrow M+1$
6			IO	
7			Operate	

Table 5.5.2 PDP8 Subtraction

XMA	Y	$Y \rightarrow A$
CIA		$-Y \rightarrow A$
ADD	X	$X - Y \rightarrow A$

Table 5.5.3 operator commands

Mnemonic	Octal Code	Arrow Notation	Meaning
NOOP	7000	$\Rightarrow I+1$	No operation
RTL	7006	$A \leftarrow (A)$	Rotate two left
CMA	7040	$\overline{(A)} \rightarrow A$	Complement A
CIA	7040	$\overline{(A)} + 1 \rightarrow A$	Complement and increment A
STOP	7402	$\Rightarrow I+1$	Halt
SKIP	7410	$\Rightarrow I+2$	Unconditional skip
SZA	7440	$(A) = 0; \Rightarrow I+2$	Skip on zero accumulator
SNA	7450	$(A) \neq 0; \Rightarrow I+2$	Skip nonzero accumulator

Figure 5.5.1 Group 1 operate instructions

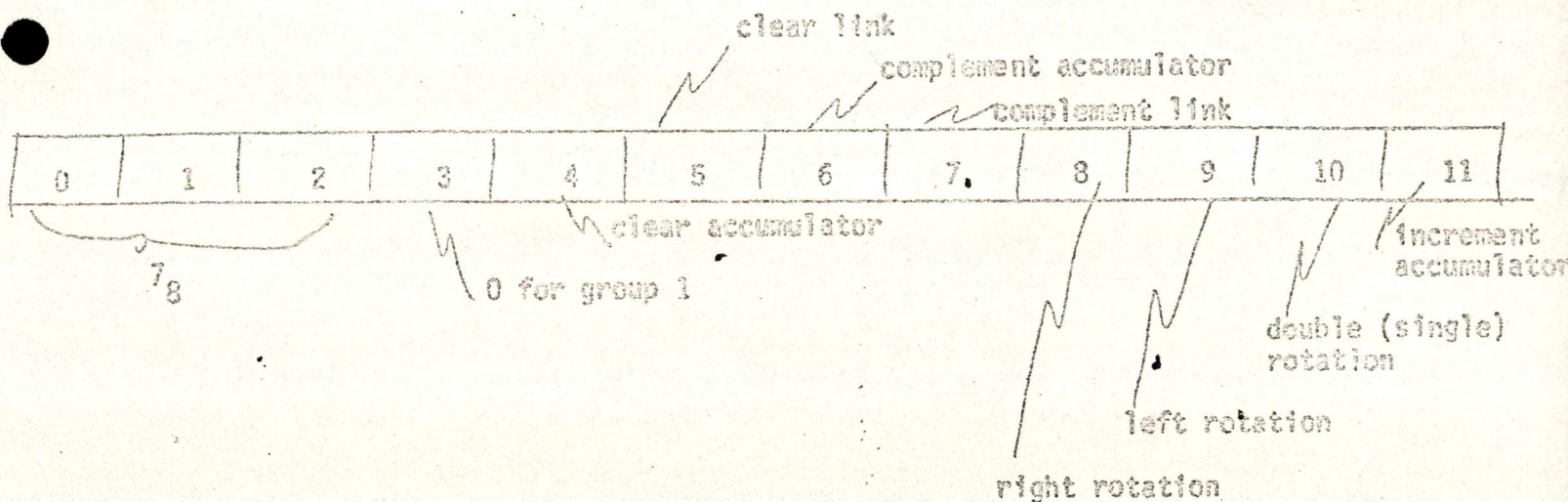
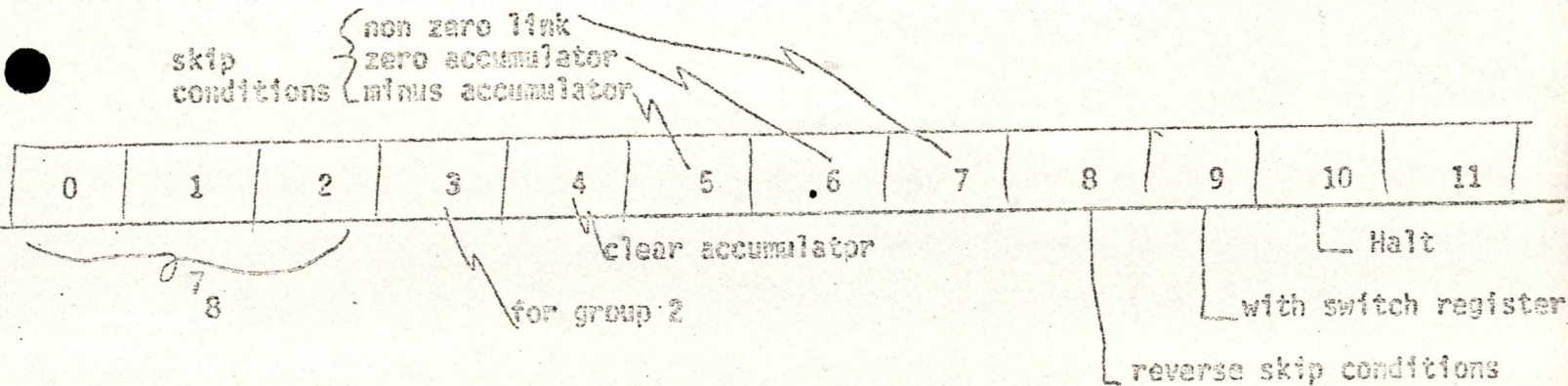


Figure 5.5.2 Group 2 operate instructions



I/O
Pulses

Device
Select
Buss

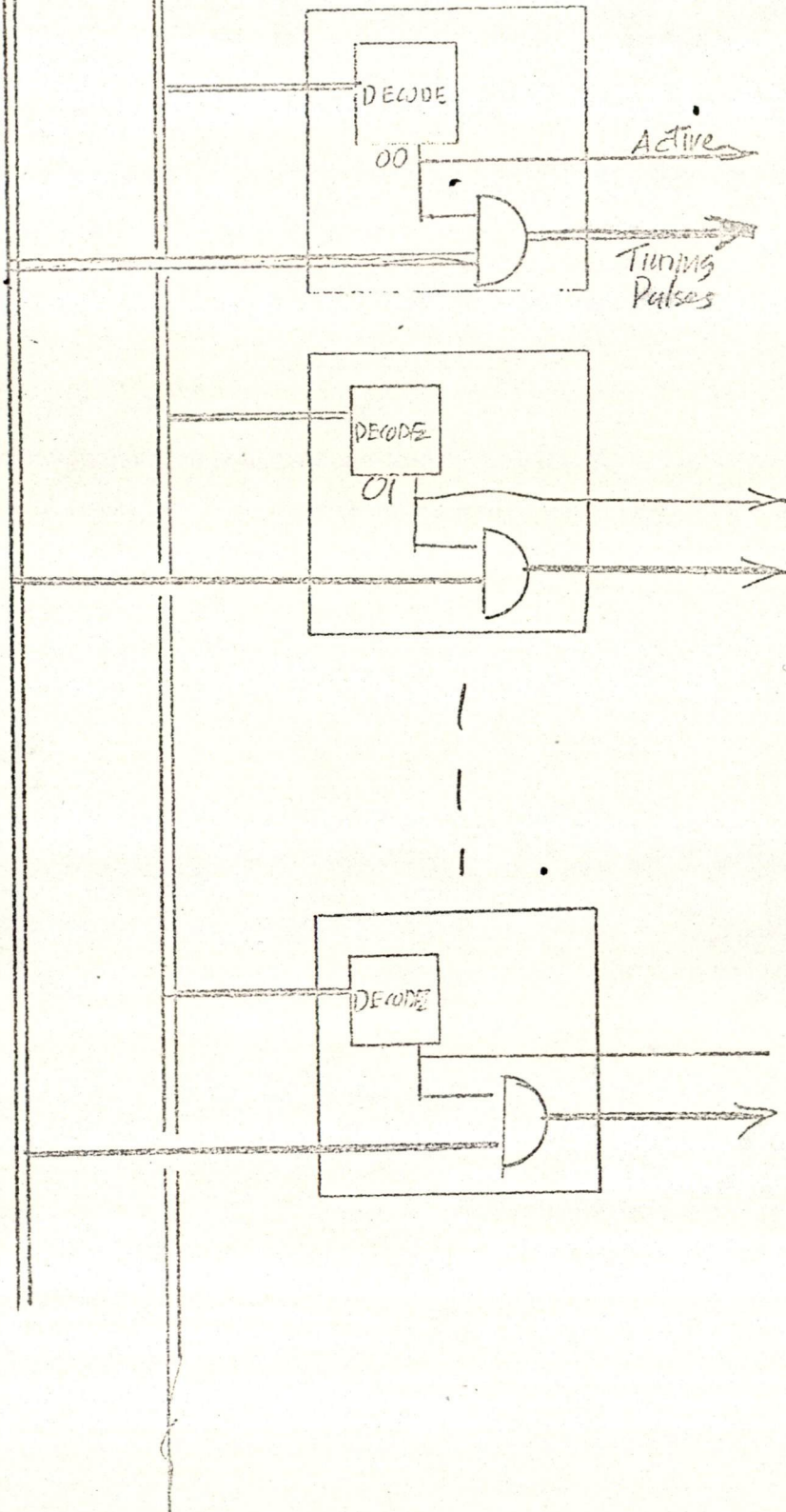


Figure 5.6.1 Device Selection

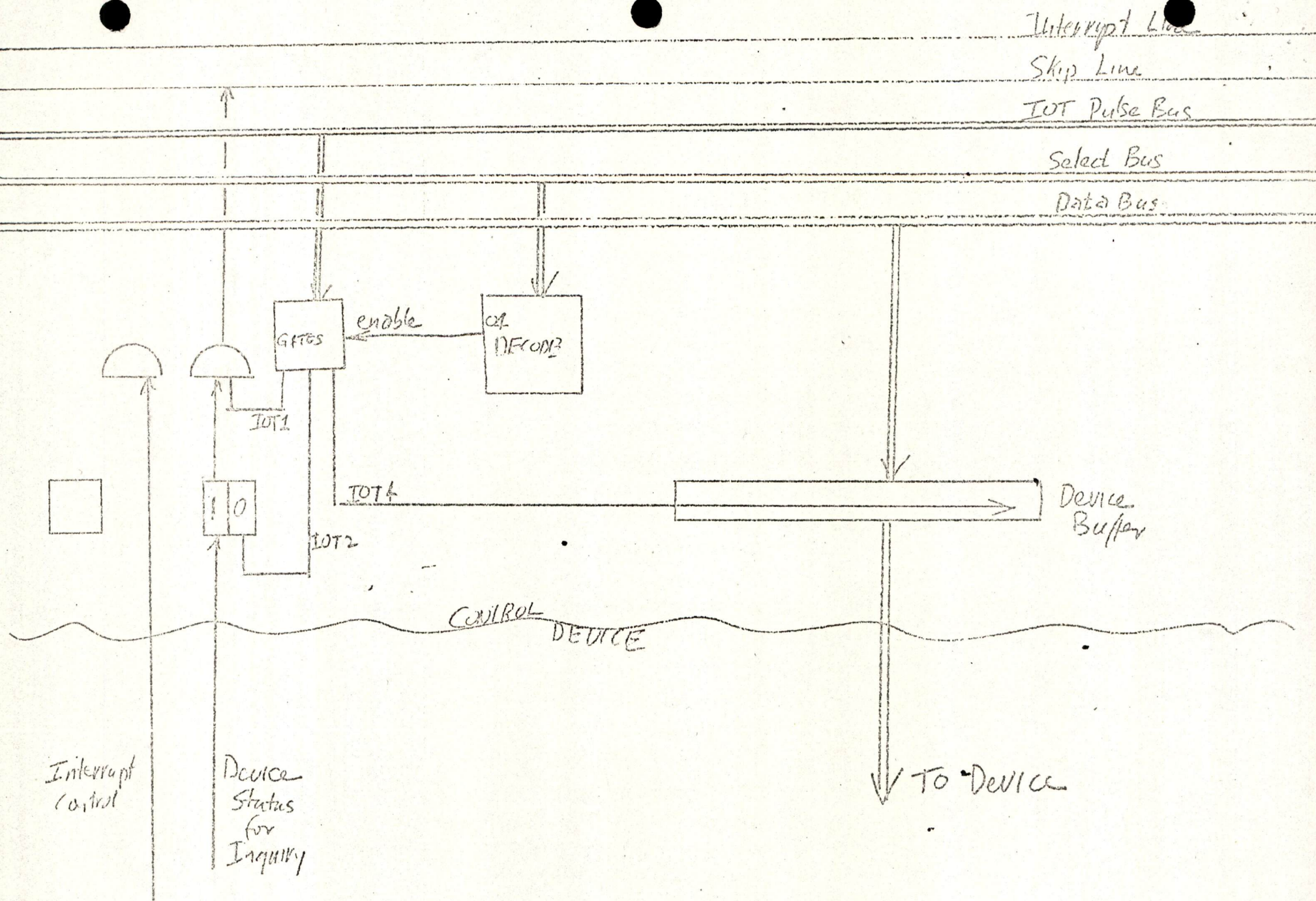


Fig 5.62 Output interface as found in the teletypewriter.

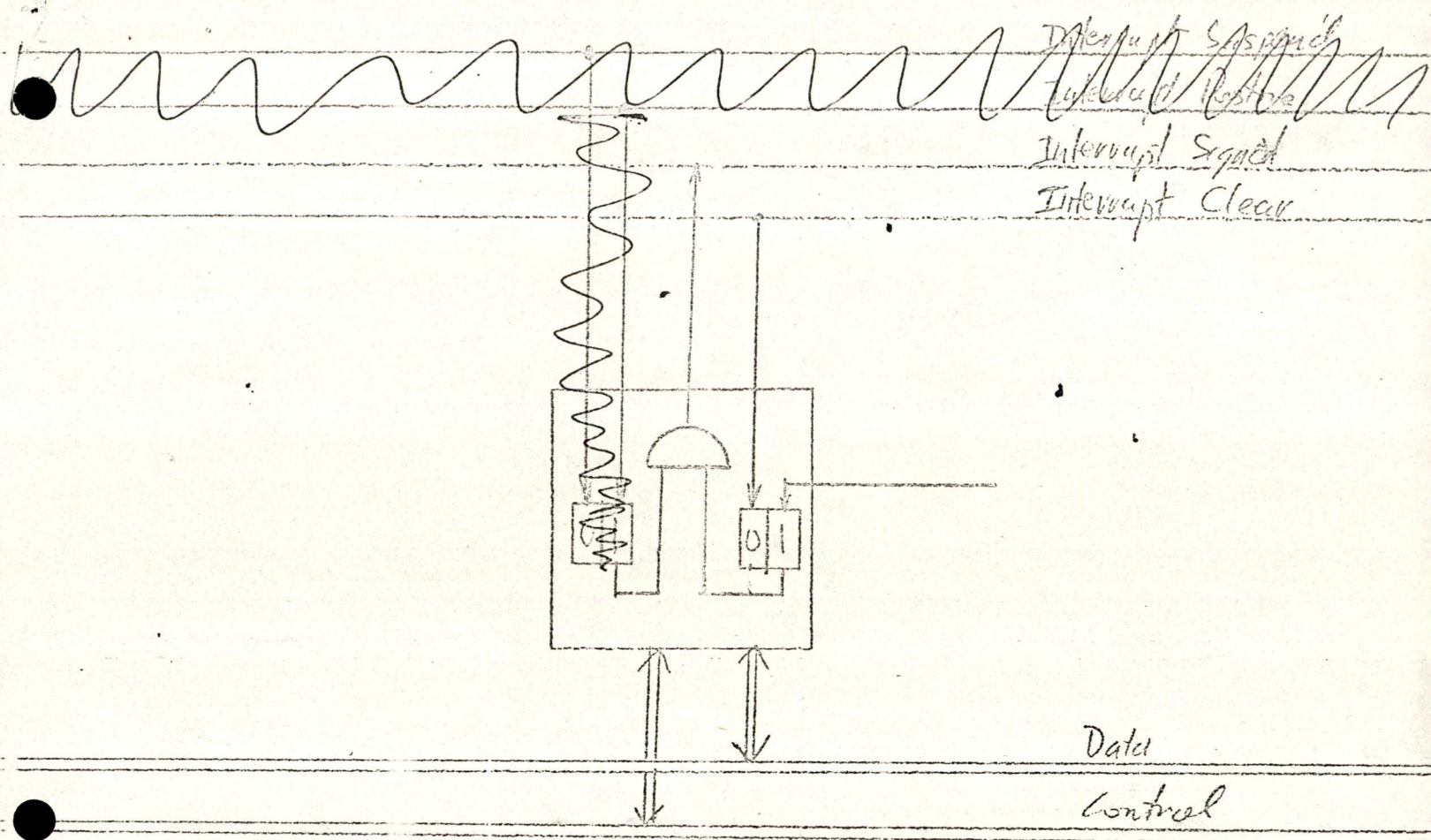


Fig 5.7.1 Interrupt Control

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designed and built manufacturing prototype of small core memory; improvements in robot-positioning logic; designed storage equipment for robot program.

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designed anti-submarine computer; designed navigation computer; assisted proposal effort.

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developed specifications for next-generation ICBM computer.

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SCHLUMBERGER	improvements for product-line counter.
NATIONAL CASH REGISTER	software-hardware integration.
POTTER	complete system for bank-code deciphering.
INTERTECHNICAL	patent validation.
DUNLAP	improvements in automatic checkout equipment; reviewed decision-making, PERT.
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- written several entries for Encyclopedia Americana
- editor and reviewer for many technical computer publications
- Atomic Energy Comm. research: "Effective Use of Mass Memory"
- symposium and convention organizer and chairman
- over thirty technical papers

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- *University Appointments*
 - 1967- Professor, Statistics (Computers), Baruch School of Business, City University of New York
 - 1965-67 Associate Professor, EE, Stevens Institute of Technology
 - 1962-63 Adjunct Professor, EE, New York University
 - 1959-62 Associate Professor, EE, Polytechnic Institute of Brooklyn
- *Honorary*
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- *Talks and Presentations for:*
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 - Schools and Private Industry
 - Radio and TV
- *EDUCATION:* Ph.D., New York University / M.A., Columbia University / B.A., Brooklyn College

February 8, 1968

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General Aniline & Film Corporation
Department ON1
40 West 51st Street
New York, New York 10020

P

Gentlemen:

At your earliest convenience, please send me information on your copier
machine(s).

Y

Very truly yours,

(Mrs.) Elsa C. Carlson

February 8, 1968

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At your earliest convenience, please send me information on your Model
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Very truly yours,

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February 8, 1968

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Y

Very truly yours,

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February 8, 1968

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3 M Company
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(Mrs.) Elsa C. Carlson

What measures the true cost of your office copying?

The cost-per-copy or the time it takes to make copies?

Of course, the answer is both but we tend to forget the second factor. Every time someone marches up to the copy machine, the time clock keeps ticking away, keeps adding up copy costs.

Your initials on the card above will bring you a new, interesting and valuable brochure just prepared by Dennison. It discusses the true cost of office copying.

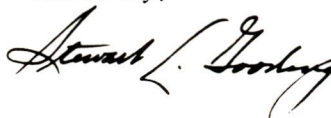
It shows why so-called high speed copiers seldom deliver at anywhere near rated capacity. It shows how complicated controls and operating procedures steal precious employee working time.

It describes the Dennison High Speed Copier --- a copier so automatic it makes people faster. It cuts copying time substantially. Example: a flip-up exposure lid that raises and lowers automatically. It's like having an extra pair of hands. The operator is free to collate, arrange - and make copies at the rate of 30 per minute!

Compact size and quiet operation mean that the Dennison High Speed Copier can be put right where the work is --- right where a copier should be.

Send for this eye-opening brochure and compare the performance of this new Dennison Copier with your present equipment. No obligation of course. Detach and mail the card today.

Sincerely,



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February 8, 1968

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American Photocopy Equipment Company
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Very truly yours,

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February 8, 1968

C

O

P

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East 64 Midland Avenue
Paramus, New Jersey 07652

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your copier machines.

Very truly yours,

(Mrs.) Elsa C. Carlson

February 8, 1968

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(Mrs.) Elsa C. Carlson

C

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P

Y

February 8, 1968

**Mr. V. Green
The Woodlands
Perlon
Bangor
Caernarvonshire
England**

Dear Mr. Green:

Your letter of February 2nd has been referred to me for reply. We have two offices in England, and their addresses are as follows:

**Digital Equipment Corporation (U.K.) Ltd.
Arkwright Road
Reading, Berkshire, England**

and

**13/15 Upper Precinct, Bolton Road
Walkden, Worsley
Manchester, England**

Very truly yours,

**(Mrs.) Elsa C. Carlson
Secretary to the President**

C
O
P
Y

The Woodlands

Penlon

Bangor

Caern.

1/2/68

Dear Sir / Madam.

I am sorry to have to write to you but I have tried to get in touch with your Jim in U.K. but when I wrote to Reading Berks the letter was returned saying they had moved to somewhere else. I have tried to find out where the new place is but have had no success so I would appreciate it if you could let me know the new address.

Thanking you in anticipation and apologising for being a nuisance.

Yours Sincerely

V. Green (Mr)

Sender's name and address:

Mr GreenThe WoodlandsPerlanBangorCaernarfonshireU.K.

AN AIR LETTER SHOULD NOT CONTAIN ANY
ENCLOSURE ; IF IT DOES IT WILL BE SURCHARGED
OR SENT BY ORDINARY MAIL.

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PAR AVION
AIR LETTER
AEROGRAMME

The SecretaryThe Digital Equipment Corp L^{td}146 Main St,MaynardMassachusetts

U.S.A.

01754

FIRST FOLD HERE

February 7, 1968

Mr. William Armstrong
Waterbury Pressed Metal Company
407 Brookside Road
Waterbury, Connecticut 06720

Dear Bill:

I want to thank you for giving me the name of Boyd Howell as a possible addition to our staff. I have reviewed our plans in this area, and, for the present, we do not need a senior man with these qualifications. Therefore, we will not be contacting him.

Thank you again for your thoughtfulness.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

C
O
P
Y

JAN 17 1968

digital

INTEROFFICE MEMORANDUM

DATE: January 15, 1968

SUBJECT: BOYD HOWELL

TO: Mike Ford ✓
Marv Cothran

FROM: Ken Olsen

I received a telephone call today from an old acquaintance, Bill Armstrong, who suggested that we look at a man experienced in graphic communications. He now works for Datafax Corporation, a subsidiary of Stewart-Warner, and before that was regional manager for the West for Telautograph Corporation. His name is Boyd Howell, 3542 Turner Heights Drive, Decatur (suburb of Atlanta), Georgia.

If you don't want to contact this man, please let me know so I can call Bill Armstrong.

203
756-8891

ecc

Ken
Ford - NO
D. Murphy - NO
Pat Green NO
Pls answer to me
M. Ford

There does not seem to be a slot for this man at this time

February 6, 1968

Mr. J. Alan Spahr
18 Mayflower Road
Winchester, Massachusetts

Dear Alan:

We want to thank you for sending your resume to us. I have made a review of all the products of our Company and find that, at the present time, we do not need a senior marketing man.

We appreciate your considering DEC in your search of a new position, and I am sorry to have to give you a negative answer.

Sincerely,

Kenneth H. Olsen

KHO:ecc

C
O
P
Y

1/24
e- Win
Stan
Nick
Any interest?

18 Mayflower Road
Winchester, Massachusetts
January 19, 1968

Home # 729-5372
Office # 742-4585

Mr. Kenneth Olsen
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts 01754

Dear Ken:

The enclosed resume is a quick sketch of my personal background which I would appreciate having you review. If there is a potential employment opportunity for me with DEC in the area of marketing, planning or product line management, I would be most happy to come out to Maynard and discuss the matter with you or members of your management team.

I will plan to call you in a few days to determine, if DEC has interest in my services.

Very truly yours,

J. Alan Spahr

J. Alan Spahr

JAS:dao

Enclosure

wants to know if you'd be interested
in developing in-house capability
for integrated circuits

ALAN SPAHR

18 Mayflower Road
Winchester, Massachusetts 01890

Telephone: 617-729-5372

OBJECTIVE: Management opportunity in marketing, planning or product line with a company involved in electro-mechanical systems. The company should have need for an accomplished graduate engineer with ten years of marketing experience and allow the individual to make a significant contribution to its profitability while achieving further personal and professional growth.

GENERAL SALES MANAGER, Anelex Corporation/Subsidiary Mohawk Data Sciences

July 1964 to present

Joined Anelex as Account Manager with initial assignment in disk file memory marketing. Promoted to New England manager for accounts involving the main product line - high speed line printers and sub-systems for computer output.

Promotion to National Sales Manager followed a successful record of expanding sales volumes with existing customers and developing new accounts. Promotion to General Sales Manager came next with responsibility for directing national sales staff, marketing administration department, and customer services department. Corporate responsibility includes sales forecasting, long term business planning, budgeting and participation in the Business Planning Committee.

REGIONAL SALES MANAGER (NORTHEAST & EUROPE), Bryant Computer Products, Division of Ex-Cell-O Corporation

March 1961 to June 1964

Responsible for sales in northeastern United States and the European market. Traveled extensively throughout the United States, Canada, and Western Europe developing new accounts and supervising representatives' activities. Experience gained in technical sales, application engineering, product planning, and design of electro-mechanical devices.

SALES MANAGER, DATA STORAGE OPERATIONS, Laboratory for Electronics

May 1960 to March 1961

Organized and conducted sales effort for the newly formed Data Storage Operations. Responsibilities included marketing the Bernoulli Disk Memory device, High Density File Drums, and data storage systems.

SALES AND APPLICATION ENGINEER, Bryant Computer Products

November 1957 to May 1960

First sales engineer to join Bryant with initial product training assignment in the research and development department to assist in the improvement of thin magnetic oxide coatings. Upon completion of product familiarization program became responsible for preparation and submittal of quotations including specifications, price and delivery. Via correspondence made initial international sales to Canada, Australia, Japan and Holland.

Traveled extensively throughout the United States developing new accounts and directed the operation of the home sales office in the Sales Manager's absence. In 1959 established the Western Regional Sales Office and coordinated sales representatives' efforts for the complete territory west of the Mississippi. Upon successful establishment of the western office, returned to Vermont headquarters to direct sales and technical liaison in the eastern states.

PROJECT ENGINEER, NATIONAL CARBON CO., Division of Union Carbide

June 1956 to November 1957

Manufacturer of proximity fuse energizers and miniature batteries.

Directly responsible to chief engineer in projects requiring design, fabrication and installation of electro-mechanical type production equipment with primary emphasis on automation of manual processes. Responsible for production equipment considerations in task force proposal work.

JUNIOR ENGINEER, Berg Mfg. and Eng. Co.

June to October of the years 1953, 1954, and 1955

Leading manufacturer of special automatic assembly equipment and strip terminals for the electronics industry.

Responsible for operation and maintenance of automatic assembly equipment. Set up materials handling and inspection procedures. Designed and supervised installation of production equipment. Responsible for plant layout and contracting to double plant size.

EDUCATION

B.S., M.E. - Massachusetts Institute of Technology, Cambridge, Massachusetts - 1956. Majored in Mechanical Engineering with electives in Industrial Management. Thesis subject: Thermistor Stability Through Temperature Cycling. Rank in class: upper one-third. Graduate Study - M.I.T. School of Industrial Management.

Active in track, intra-mural sports and student government. President of Pi Tau Sigma (honorary) and Sigma Chi (social) fraternities.

PERSONAL DATA

Married - two children; height 5'11"; weight 175 lbs; excellent health.

Born in Carlisle, Pennsylvania, March 18, 1934, and educated in the Dillsburg and Mechanicsburg Public School Systems.

Hobbies and interests: photography, tennis and skiing.

Will relocate, will travel.

February 2, 1968

C
Mr. Bernard Haldane, President
Bernard Haldane Associates
Suite 1246
11 West 42nd Street
New York, New York 10036

Dear Mr. Haldane:

O
P
During the last year or two, I have been regularly approached by job applicants who request an interview with me so that I might help them find a new position. Their letters all seem to be written by the same man, and go something like this -- "I do not expect that there will be a position for me with your organization at this time, and I have no intention of asking you for a job. What I need is the competent advice and counsel which you are so well qualified to give." The approach has gotten to be an utter bore, and I refuse to even talk with anyone with such an unoriginal approach.

Y
I have started to ask people who put them up to this, and it comes back to your organization. I think you should realize that this approach has gotten to be a drag, and you're doing a disservice to these people by continuing to use it.

Very truly yours,

Kenneth H. Olsen

KHO:ecc

cc: Mr. John H. Oxley, President
Bernard Haldane Associates
535 Boylston Street
Boston, Massachusetts 02116

February 1, 1968

Professor Henry J. Zimmermann
Director of the Research Laboratory of Electronics
Room 26-231
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Professor Zimmermann:

We have reviewed your request for a contribution to the project for computer reading of text material for blind people. Because of the potential usefulness of this project, and because of the enthusiasm you have expressed, we have decided to offer a small contribution.

We would like to donate an extra 8K Memory System, consisting of a Model #KG09A for a total of \$4,000, and Memory Model #MM09A for \$18,000, making the total gift \$22,000.

This gift is contingent upon the purchase of the following equipment by MIT at a price of \$60,100: One PDP-9, one KE09A, one KF09A, one DM09A, one TC02, and two TU55's.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

Done

This gift is contingent upon
~~MIT~~ the purchase of ^{the following equipment} by MIT
of ~~PRG~~ ~~equipment~~ at a
price of \$ _____
instead of last \$ _____

1 P:9.

1 KE09A

1 KF09A

1 DM09A

1 TC02

2 TU55's

35

4

5

4

7.4

4.7

35

4

5

4

7.4

4.7

60.1

60.1

UNY-690

6900

Henry Zimmermann

pm 26-231

May 1953

privat foundation

work on reading machine for Blind

- work has been on PDP

money for PDP

more than 10%

42512

150 K from Foundation

normal 10%

Andre
Quinn
520

DEB

Warren Institution for Savings
for Pk St 3 Park St - Soc.

NEA

Mar. 14

Apr. 15 Money
(Kenwick)

digital

February 1, 1968

Mr. Wharton Shober
President
Atec Corporation
1518 Walnut Street
Philadelphia, Pennsylvania 19102

Dear Mr. Shober:

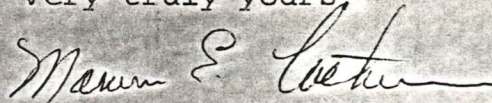
On behalf of Mr. Olsen, President, Digital Equipment Corporation, I would like to take this opportunity to answer your letter of January 5, 1968.

We cannot at this time act favorably on your request for an exclusive representation of the PDP-8 Typesetting System in South America and Mexico. We do not offer exclusive arrangements for any of our manufactured products.

All of our arrangements with OEM customers are made on the basis of a purchase of hardware only. The customer must provide their programs, program support and maintenance support. We do not provide training of programmers or technicians on a long-term class basis. Our classes are for one week periods and assume that people attending are qualified programmers, electronic technicians or engineers. It is not feasible for us to undertake program and maintenance support for typesetting systems sold through Atec for installation in South America.

We are interested in expanding the market for our products. However, we feel at this time we must pursue the avenues which have been successful in Europe and the Far East. Thank you for your consideration and inquiry.

Very truly yours,



Marvin E. Cothran
Marketing Manager -
Graphic Arts

MEC/dm

✓cc Ken Olsen

*C. New Cochran (We decided they were not a
1/16/68 C. we should become associated
with.)
rcc*

ATEC CORPORATION

OFFICE OF THE PRESIDENT

1518 WALNUT STREET
PHILADELPHIA, PENNA. 19102 U.S.A.
TELEPHONE: (215) 546-1900
CABLE: ATECO
TELEX: 83-4362

January 5, 1968

Mr. Kenneth H. Alsin, President
Digital Equipment Corporation
Maynard, Massachusetts

Dear Mr. Alsin:

Permit me to apologize for not coming to Maynard to meet you and your associates on the past two Thursdays. Severe icing conditions were forecast for the Boston area on both days and we do not fly in such conditions.

My schedule for the immediate future is such that I will be unable to get up to Maynard and therefore this letter.

First, a brief description of ATEC, an export house, which I founded in 1957. We received the Presidential "E" for excellence in expanding U.S. exports in 1963. We are the exclusive export house for Fairchild Graphic's, Web Offset Presses, Web Press Engineering and for Photon products in Latin America the Caribbean, and Spain. We engineer, sell, finance, install and maintain complete printing systems in these areas. We maintain sales offices in Spain and Colombia and are establishing offices in Mexico and Argentina. ATEC purchases all equipment from its suppliers for cash.

We want to recommend a low cost computer to our Photon customers. The PDP 8 would fill our needs.

Would consider naming ATEC your exclusive export house for Spain, Latin America and the Caribbean for your computers used for typesetting only.

We would then actively promote their sale.

We would want you to develop and pay for the software for the Spanish language; the cost of which could be pro--rated acrosss the machines sold. We would also want to send you one or more of our Photon trained technicians for maintenance training and ask how long this training would take.

Looking forward to the favor of your reply, we are

ATEC CORPORATION

Wharton Shober
Wharton Shober

WS/jw

cc; Marvin Cothran

January 31, 1968

**Dr. John Dessauer
Executive Vice-President
Xerox Corporation
1250 Midtown Tower
Rochester, New York 14604**

Dear Dr. Dessauer:

I want to thank you for the most gracious way in which I was received last Thursday.

I very much enjoyed the lunch, and I look forward to following up on our conversation in the next few weeks.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

C
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Y

January 31, 1968

Mr. William C. MacGregor
Digital Equipment of Canada, Ltd.
P. O. Box 370
Carleton Place, Ontario, Canada

Dear Bill:

We are very sorry to hear that things didn't work out for you at DEC in such a way as to take full advantage of your capability. I do want to thank you for the contributions you have made during the last four years. We will always remember the enthusiasm in which you carried out your job.

We wish you the best of luck in your new job.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

COPY

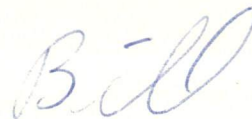
digital

January 24, 1968.

Dear Ken:

After four years of working as an employee of Digital Equipment Corporation it seems in the best interest of both the Company and myself to terminate.

I would like to take a moment to personally thank you for the opportunity of working as a member of your team. It was your attitude toward your employees that enabled me to develop and grow, and for this I thank you most sincerely.



W.C. MacGregor.

January 31, 1968

Mr. Robert E. Shafer
14 Old Colony Lane
Arlington, Massachusetts 02174

Dear Mr. Shafer:

Enclosed is the letter you were supposed to have received as one of our stockholders. We are sorry for this inconvenience to you. It seems that you have fallen victim to the weaknesses of our automated society!

Sincerely,

(Mrs.) Elsa C. Carlson
Secretary to the President

Enclosure

C
O
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Y

January 30, 1968

C
Mr. Hans Hillerström, Secretary
E3's Study Tour Committee
Chalmers University of Technology
Gibraltargatan 5 P
Göteborg S. Sweden

O
Dear Mr. Hillerström:

P
We have received your inquiry regarding employing a student for 8 weeks in our plant this coming summer. I am sending copies of this letter to our European Regional Manager and our Swedish office. We would consider taking one student if one of our engineers in Sweden can review the candidates and interview if possible.

Y
I hope we can offer you an opening. We would have difficulty supervising anyone over such a short period but will probably have him work in our support group in the Sales Department. This would give him maximum exposure to our business and parts of the company.

Sincerely,

Theodore G. Johnson
Vice President, Sales

TGJ:mr

cc: Mr. K. Olsen, DEC, Maynard ←
Mr. J. Leng, DEC, Reading
Mr. K. Reistedt, DEC, Stockholm
Mr. R. Smart, DEC, Maynard
Mr. G. Thayer, DEC, Maynard

CHALMERS STUDENTKAR

E-SEKTIONENS STUDIERESEKOMMITTE
GIBRALTARGATAN 5 P - GÖTEBORG S



*grajdon
not contacted
go Reilly will check*

E3's Study Tour Committee
Chalmers University of Technology
Gibraltargatan 5 P
Göteborg S
SWEDEN

27 DEC. 1967

Dear Sir,

I am writing to you because I believe that you and your company may be able to help me in finding employment for one or two Swedish students during the summer of 1968.

This is the situation:

The third-year students of the four-year course in Electrical Engineering at Chalmers University of Technology are intending to make a journey to the U.S.A. and Canada for purposes of study. Our journey will consist of two parts:

- a) 8 weeks (from about June 17 onwards) of summer employment for each student somewhere in the U.S.A. or Canada,
- b) 1 week during which the whole group (70 students) will visit various industries on the Northeastern part of the U.S.A.

It is my task to find employment for the 70 students.

I think we are able to manage rather qualified positions. But experience of community life and of working conditions is perhaps the most important aspect of our trip and some sort of clerical or production activity would fit us just as well. We hope to receive a salary large enough to cover living expenses during this time.

Perhaps you are not familiar with Chalmers University of Technology:

With its 3500 students Chalmers is the second largest University of Technology in Sweden. 1000 of these students belong to the Division of Electrical Engineering. After four years (rather often five) our title will be "Civilingenjör", i.e. Master of Science in (Electrical) Engineering. Our age at the time of our journey to the U.S.A. and Canada is about 23 years.

If you need further information, please contact me.

Looking forward to an early reply, I remain

Yours sincerely,

Hans Hillerström
Hans Hillerström
(Secretary)

Information about the Studies at Chalmers University of Technology,
the Department of Electrical Engineering.

The studies at Chalmers are planned to last for four years. During the two first years we study mostly basic subjects. The next two years the stress is on the applied electrical subjects. In the final year we specialize in different branches of ~~electronical~~ or power engineering and also have to do a graduation work. The studies will give us the title of Civil Engineer, which approximately corresponds to M. Sc.. After the third year i.e. before our tour to the USA and Canada, we have read the following main subjects:

Mathematics: Mathematical Analysis, Differential and Integral Calculus, Fourier Analysis, Functions of a Complex Variable.

Applied Mathematics: Matrices, Determinants, Analytical Geometry, Numerical Analysis and a course of ALCOL 60, Propability Theory, Partial Differential Equations.

Physics: General Physics, Optics, Thermodynamics and Atomic Physics.
Theoretical Mechanics.

Mathematical Physics: Vector Analysis and Potential Theory.

Theoretical Electricity: Analysis of DC- and AC-circuits, Transients, Theory of the Electrostatic and Magnetic Fields, Maxwell's Equations.

Electrical Measurements: Textbook: Principles of Electrical Measurements by Buckingham and Price.

Physical Electronics: Two American textbooks: Physical Electronics by Hemenway, Henry and Caulton and Physics of Solids by Wert and Thomson.

Electronic Circuit Theory: Textbook: Electronic Circuits by Angelo.

Telecommunications: Textbook: Analysis, Transmission and Filtering of Signals by Javid and Brenner.

Electrical Machinery: Transformers, Synchronous, Asynchronous and DC Machines.

Feedback Control Systems.

Applied Electrical Engineering: Production, Transmission and Distribution of Electrical Power.

We have had the following amount of laboratory-exercises:

Physics	20
Atomic Physics	8
Electr. Measurements	20
Physical Electronics	7
Electronic Circuit Theory	9
Telecommunications	5
Electrical Machinery	5

We have also got practical training in Swedish or foreign companies for at least three months and generally more.

January 29, 1968

C
Mr. John I. Snyder
President
COMSPEC, INC.
15 West 55th Street
New York, New York 10019

O
Dear Mr. Snyder:

Mr. Olsen has forwarded your letter regarding the possibility of this company participating in a film on "Automation".

P
I agree there is a great story to be told! Automation is enabling people to do things they couldn't dream of a few years ago.

We at DIGITAL are keenly aware of this and are making every effort possible to get this story across in our planned communication ventures.

Y
Unfortunately, an undertaking such as you propose, while an excellent educational idea for the general public, is slightly more ambitious than our plans allow us to consider at this time.

I will certainly keep your letter on file and in the future, when we arrive at a point where we are able to investigate this area, I will be in touch.

Many thanks for thinking of DIGITAL.

Very truly yours,



Alan L. Erskine
Public Information Manager

ALE/smf

✓ cc: Ken Olsen
Allen Kluchman

*Original to Allen Luchman
to take care of. pas*



Comspec, Inc.

15 West 55th Street
New York, N. Y. 10019

586-2680

December 21, 1967

Mr. Kenneth H. Olsen
President
Digital Equipment Corporation
Main Street
Maynard, Massachusetts 01754

Dear Mr. Olsen:

Automation isn't making the headlines the way it was five years ago - yet it is advancing at an increasing rate. Truly it is the "greatest source of wealth." While the American population has increased 15% in the last ten years, our gross national product has risen 87% - yet automation is still viewed with suspicion.

It occurred to me that Digital Equipment could win substantial favorable recognition by helping to tell this story - and that a motion picture would be one of the best ways to do so.

The subject has wide general interest. The kind of material readily available includes both human interest vignettes concerning the replacement of people by machines, the hope for world-wide abundance. What an opportunity to show the operation of a great many interesting and unusual machines and devices, from a press line manufacturing automobile fenders automatically in Yokohama, Japan, to a lathe in Milwaukee that is programmed by punched tape, and from a machine that automatically packages high quality boxed chocolates to an automatic orange picker! Automation in the factory - the office - and the home.

To cover the subject, the story will have to be fast paced. It lends itself to a visual presentation. The combination of sound, color and motion will present the story with tremendous impact - and it doesn't have to cost an arm and a leg.

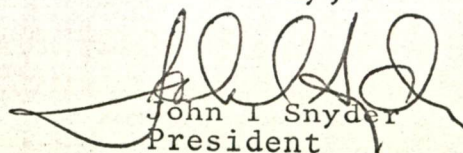
By way of introduction, Comspec specializes in finding solutions to communication problems for industry, educational institutions, and government. We utilize both film and print, as necessary, and have produced award winning films on a wide variety of subjects ranging from automation and urban renewal to motorcycle safety and copper mining. We have our own complete facilities for the production of 16mm and 35mm films.

If you would like, we could handle the distribution of your film and we would do everything necessary to insure that the people you want to reach see it.

December 21, 1967

I'd love to have the opportunity to sit down with you to talk this over further. It's just one idea, maybe we could together come up with a better one. I look forward to hearing from you.

Sincerely,



John I. Snyder
President

JIS:lm

January 29, 1968

Mr. Edwin C. Whitehead, President
Technicon Instruments Corporation
Ardsley, New York

Dear Mr. Whitehead:

When I visited you a couple weeks ago I promised to send you a candid comment on the results of our attempt to sell modules to your organization.

I came back to the office and checked our Sales Call Reports and found that our man felt he was received by your engineering department as just one more potential contractor. He said he was received with all the suspicion normally given to electronic assembly people that go out looking for jobs.

If you would like to have us try again, please let me know and we will put on an enthusiastic campaign to try to get you to use our modules.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

C
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January 29, 1968

Mr. Edmund W. Beebe
Chairman, Maynard School Committee
Maynard, Massachusetts

Dear Mr. Beebe:

I am very happy to inform you that Digital has decided to award a \$200 college scholarship to an outstanding Maynard High School senior this year.

We would like to leave the selection of the recipient in the hands of Maynard Public Schools' own scholarship committee. We do ask, however, that the award be made according to the following guidelines:

- That the award be known as the Digital Equipment Corporation Scholarship.
- That it be awarded to an outstanding high school senior who shows promise of future success in the fields of science or engineering.
- That it be used toward the first year expenses of either a two-year or four-year, full-time degree program in an accredited institution of higher learning.
- The \$200 will be sent to the institution by Digital upon receipt of evidence that the student has registered for the academic year and is attending classes on a full-time basis.

I do hope we will be able to continue to make this award available in future years.

Sincerely,

Kenneth H. Olsen

KHO:ecc

cc: Dimitri Dimancesco

COPY

January 24, 1968

Mr. John E. Abele, President
Argo Scientific Corporation
86 Old Sudbury Road
Wayland, Massachusetts 01778

Dear John:

I enjoyed having you visit DEC a few days ago and hearing about your plans and experience in the medical instrumentation market.

We would like to keep in touch and cooperate with you in the future, but, after further consideration, I feel I should definitely give a negative answer to your invitation to be on the Board of Directors.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

C
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P
Y

Original to Milt Friedman w/enclosures



ARGO SCIENTIFIC CORPORATION

86 Old Sudbury Road . Wayland Massachusetts 01778 . Phone 617 358-7370

January 10, 1968

Mr. Kenneth Olsen
Presidnet
DIGITAL EQUIPMENT CORPORATION
146 Main Street
Maynard, Mass., 01754

Dear Mr. Olsen:

Thank you very much for meeting with me on Wednesday.

I enjoyed our discussion and only hope that I was able to provide you with enough information to evaluate Argo Scientific and a possible directorship.

It goes without saying that I would be glad to meet with you further and answer any specific questions you may have.

In case, as you mentioned, you wish to discuss this with General Doriot, I have enclosed a pamphlet on AAMI and a news release on the Martin Densitron. This represents only a fraction of the picture, of course, but it might be helpful.

I firmly believe that your involvement would prove beneficial not only to Argo, but to Digital and yourself personally.

Thanks again for your time and courtesy.

Sincerely yours,

John E. Abele
President

Encl.: AAMI pamphlet
Densitron news release

January 24, 1968

C
O
P
Y

Mr. J. P. van Gansberghe
Technical Assistant
to the Managing Director
Fairey, S. A.
Aerodrome de et a Gosselies
Belgium

Dear Mr. van Gansberghe:

We are pleased to hear of your interest in the products of Digital Equipment Corporation, and of your interest in manufacturing them in Europe.

We feel that we have to give a negative answer to your proposal because we have already laid out our plans for selling and producing in Europe. We now have sales subsidiaries in France, Germany, England, and Sweden, and small manufacturing in England. In the future we will expand our manufacturing to the common market countries.

We do appreciate your proposal, but are enthusiastic about our plans and feel we should not change them.

Very truly yours,

Kenneth H. Olsen

KHO:ecc

Enclosures

FAIREY, S. A.

GOSELIES (BELGIQUE)

TÉL. : CHARLEROI (07) 35.01.90
(10 LIGNES)

ADR. TÉLÉG. : BELFAIR GOSLIE
TELEX : (051) 241

REG. COM. CHARLEROI : 23.802

CH. POSTAUX : 107.24

NOTRE RÉF. : TA. 327

VOTRE RÉF. :

Mr. Vernon R. Alden
President
Digital Equipment C^o.,
146 Main Street,
Maynard, Mass. 01754,
U.S.A.

14th December, 1967

Dear Mr. Alden,

During a recent stay in the United States, one of our Directors, Mr. E. Delville, had the opportunity of meeting Mr. Doriot, President of the American Research and Development C^o.

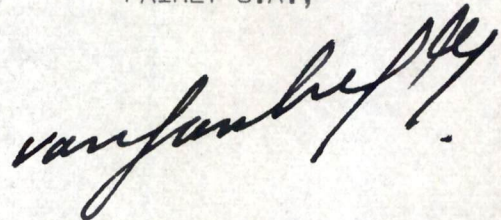
Mr. Doriot suggested that Fairey S.A. should get in touch with you in order to investigate the possibility of manufacturing your products under a licence agreement for the european market.

If you would feel interested in such an opportunity, I think that a first step would be the sending of your catalogs; we would then make a preliminary market survey in the E.E.C. countries and would let you know the conclusions which we would have reached.

In order to let you make your own opinion on our Company we enclose two documents dealing with the organization, know-how and financial structure of Fairey S.A.

Hoping to hear soon from you, we remain,

Sincerely Yours,
FAIREY S.A.,



J.P. van GANSBERGHE,
Technical Assistant
to the Managing Director

Encl.



ORGANIZATION & KNOW-HOW OF FAIREY S.A.

The works, belonging to Fairey S.A. are situated at Gosselies (approximately 40 Km. south of Brussels) on a 9Ha 32a ground, with a covered surface of 40.000 m2. The plant is built alongside an official aerodrome which has a 2500m long runway and along the Brussels/Charleroi N° 5 national highway. Fast road and rail links exist from Brussels and Charleroi with the most important european communication axis.

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*

Outside its own industrial activities, detailed below, Fairey S.A. also has two subsidiaries, called Fairey-Tress S.A. and Les Ateliers Roger Laurent S.A.

Fairey-Tress S.A. manufacture high grade forged steel valves and level gauges (Jerguson licence) mainly for the petroleum, chemical and petro-chemical industries.

Les Ateliers Roger Laurent S.A. specialise in the design and manufacture of sintered metal parts for all types of mechanical industry (autolubricating bronze and iron bearings, various copper, bronze, brass, iron, steel, mallechort and other alloy mechanical parts).

Fairey S.A. have at their disposal some workshops which are reknown principally for the manufacture, assembly and overhaul of aircraft; an important part of the manufacturing and assembly programme of the F.104G Super Starfighter for the NATO Air Forces was executed by Fairey S.A.

The various workshops and divisions of Fairey S.A. are familiar with the high precision work submitted to their own and their customers severe and permanent inspection departments; amongst their main departments one may mention :

- a machine shop and a tool shop well equipped with modern precision machines (lathes, milling machines, grinding machines, drilling machines, slicing lathes, etc ...)
- a sheet metal and press shop equipped with several presses the capacity of which varies between 5 and 100 tons, cutting machines, shrinking machines, spot welding machines, tube benders, etc ...)
- a welding shop for all kinds of metal and welding methods; i.e. argon, helium, electrical arc, spot and roller processes, etc ...)
- a heat and protective treatment shop, including, amongst others, a hot air furnace with precision temperature recorder, alodine baths, cadmium plating, chrome and hard chrome plating, various anodisations (chromic acid, sulfuric acid, etc ...)
- a metrology and inspection laboratory equipped for the fluorescent flaw detection, surface control, optical thread and form control, hardness test, artificial ageing test, etc ...
- a hydraulic and pneumatic test laboratory (pumps, valves, compressors, bottles, cylinders, filters, etc ...)
- a cable assembly workshop, for all piece works, small, medium or large series.
- an instrument laboratory for the repair and setting up of all kinds of measuring instruments.
- a general purpose electronic laboratory (small series production and repair).
- a plastics workshop for the shaping of reinforced polyester (fibreglass), polyurethane foam and perspex; this shop is equipped for the vacuum forming and with a 200 ton capacity heated die press, a large polyesterisation oven, etc ...
- a metallurgical laboratory for classical qualitative raw material tests and qualitative inspection after various treatments (i.e. thermic, anti-corrosion, etc ...)

At the present moment Fairey S.A. and its subsidiaries employ approximately 1100 people in their Gosselies plant, this manpower is spread as follows :

FAIREY S.A.

- Management	:	6
- Stress Office	:	18
- Inspection	:	72
- Workshops	:	546
- General Administration	:	337

FAIREY-TRESS S.A.

- Management	:	1
- Works and Inspection	:	71
- Administration	:	10

ATELIERS ROGER LAURENT S.A.

- Management	:	2
- Works and Inspection	:	58
- Administration	:	13

Fairey S.A., Fairey-Tress S.A. and Ateliers Roger Laurent S.A. each have their proper commercial departments dealing with the sale of their products within the Common Market and other countries.

TECHNICAL INFORMATION

Electrical power

high tension	6 KV.
low tension	220/380 V.
available power	1600 KW.

Water supply

diametre of main coupling	(1 x 80 mm) + (1 x 80 mm) + (1 x 3/4")
available pressure	1,7 Kg/cm ² max.

Gas supply

diametre of main coupling	(1 x 2") + (1 x 1 1/4")
available pressure	140 mm GE max.
maximum flow	34 m ³ /h.

Boiler rooms

total thermal power	11.200.000 kcal.
storing capacity (fuel oil and gas oil)	136.000 litres

Telephone exchange

10 connections to main net
400 internal lines

Main prospected activity sectors of Fairey S.A.

- small, medium, large series of precision mechanical fabrications, such as :

- . office printing, copying machines, etc ...
- . teaching machines
- . vending, distributing machines
- . packaging, wrapping, conditioning machines, etc ...
- . dynamic weighing equipment
- . auxiliary equipment for computers,

etc

- engineering, enterprise and services :

- . air treatment : ventilation, conditioning, refrigeration, deodorisation, filtration, purification, etc ...
- . water treatment : primary waters
sewage waters

- in a more general manner, all products and services with a certain complexity degree, and for a diversified clientele on the european market; preference tending towards complete mechanical products, i.e. immediately usable after single connection to the ancillary services (electricity, gas, water, etc ...).

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CONFIDENTIAL INFORMATION

1. Name of the company, addresses, etc ...

- FAIREY S.A.

Aérodrome de et à Gosselies (Belgium).

Telephone : 07/35.01.90 (10 lines)

Telegraphic address : BELFAIR GOSLIE

Telex nr. 051 - 241

Languages used : English - French

- Date of formation : 27th August, 1931

- Balance sheet (31.3.67) publication number (in Belgian Official Record)
n° 31.083 dated 5.10.66.

2. Name and addresses of subsidiaries.

a) Les Ateliers Roger Laurent S.A. at Gosselies

b) Fairey-Tress S.A. at Gosselies

3. Trade area.

Belgium, Germany, Netherlands, France, Italy, Luxemburg; possibility to extend the area to all other European countries.

4. Existing customers (before diversification)

- National and International Defence organizations.

- Electrical Industry (nuclear division)

- Chemical and Petroleum Industry (valves)

- Packaging Industry (reinforced plastics)

- Automobile Industry (sintered metal parts)

5. Business relations

a) American companies :

FAIREY S.A. : - Lockheed, Burbank, California.

- United Aircraft Products Inc., Dayton, Ohio.

- Aircraft Porous Media, Glen Cove, N.Y.

Les Ateliers Roger Laurent S.A. : - General Motors, Detroit, Mich.

Fairey-Tress S.A. : - Jerguson, Burlington, Mass.

b) Non-American companies :

Fairey S.A. : - Lloyd & Hillman, London, G.B.
 - Pall (UK) Ltd., G.B.
 - Hydromeca SARL, Paris, France.

Les Ateliers Roger Laurent S.A. : -Sintermetallwerk, Krebsoege, Germ.
 -Sheepsbridgestokes Ltd., G.B.

6. Bank references

Banque de Bruxelles, S.A.
 Charleroi Branch,
 31, Place Albert 1er,
 Charleroi - Belgique.

7. Financial and economical information

Capital : 1.600.000 \$ (entirely paid-up).

N.B. : the capital of Fairey S.A. is entirely owned by the holding company :

The Fairey Company Ltd.,
 Cranford Lane,
 Heston,
 Middlesex, G.B.

Annual turnover (financial year 1966) : 8.600.000 \$

8. Administration and Management

a) Board of Directors

G.C. D'Arcy Biss, Chairman

A. Talbott, Managing Director

L.S. Dawkins, Director

J.C. Macpherson, F.C.A., Director

A. Vines, C.Eng., A.F.R.Ae.S., A.M.I.Prod.E., Director

E.R.J. Delville, Director

J.I. Blum, Director

b) Senior Executives

R. Legroux, General Manager

B.A. Eldridge, Financial Manager & Secretary

J-P. van Gansberghe, Technical Adviser to the Managing Director

R. Charles de la Brousse, Commercial Manager

G. Piette, Administrative Manager

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-
-
-
-

January 23, 1968

Mr. Lister Vickery
European Enterprises Development
37, rue Notre Dame
Luxembourg

Dear Mr. Vickery:

We have considered the application of Helimat tapes for our product line and have concluded that, at the present, we should not undertake the project to use this tape.

We feel this is a very clever system, and I wish that it had been available several years ago when we first made our compact tape units. We are now into production of our own tape unit, and feel it would be unwise to change at this time.

Thank you for telling us about this tape.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

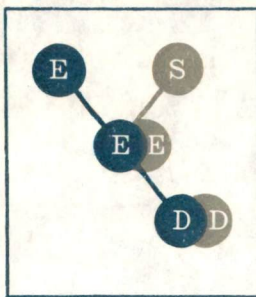
cc: Richard Best

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EED

EUROPEAN ENTERPRISES
DEVELOPMENT COMPANY S A

37, RUE NOTRE-DAME, LUXEMBOURG



SED

SOCIÉTÉ EUROPÉENNE POUR LE DÉVELOPPEMENT DES
ENTREPRISES - SARL
CORRESPONDANT A PARIS DE EED

66, AVENUE KLÉBER, PARIS 16^e - TÉL. 553.60-86

Kenneth H. Olsen, Esq.
Digital Equipment Corporation
Maynard, Massachusetts

Paris, January 11, 1968

Dear Mr. Olsen,

In November, I sent you a set of papers on the Helimat helical-wound tape cassettes.

I would like to have your opinion on its potential usefulness, and, in particular, I should appreciate your sending me a set of specifications for a suitable magnetic tape memory. Memory size, transfer rates, start/stop times, volume of apparatus, number of tracks and accuracy of positioning seem to be the most useful parameter. Equally an idea of upper price boundaries for the tape and for the drive unit would be useful.

On the basis of such information, we can see whether the Helimat can reply to your needs.

Thanking you in advance,

Yours sincerely,

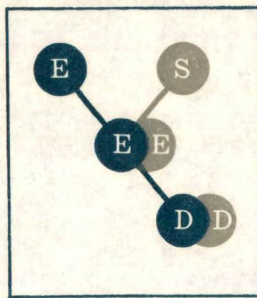
Lister Vickery.

LV/ns

EED

EUROPEAN ENTERPRISES
DEVELOPMENT

37, RUE NOTRE-DAME LUXEMBOURG



SED

SOCIÉTÉ EUROPÉENNE POUR LE DÉVELOPPEMENT DES
ENTREPRISES - CORRESPONDANT A PARIS DE EED

66, AVENUE KLÉBER, PARIS 16^e - TÉL. 553.60-86

Kenneth H. Olsen, Esq.,
Digital Equipment Corporation
Maynard, Massachusetts

Paris, November 20, 1967

Dear Mr. Olsen,

Mr. de Vitry has passed me a note of your comments on the Helimat tapes, and indicated that you would like to get in touch with the company.

You could contact the inventor and Technical Advisor to the company, M. Cailliot at the following address :

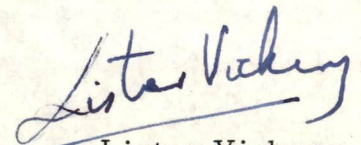
SIDEN
12 rue Leonidas
Paris XIV

It is presently a little difficult to reply directly to your question on manufacturing costs. The present machine heat-forms a classical roll of tape to give a spiral, and the rest of the operations are manual. On such small batch operations, the manufacturing cost is around \$ 2 for a 50 metre (167 ft) tape.

I wonder whether you could specify in greater detail your needs for a tape memory (capacity, transfer rate, start / stop time, price etc...) and we could then set about discussing the technical and economical problems involved.

I look forward to hearing from you.

Yours sincerely.


Lister Vickery.

LV/ns

January 23, 1968

Mr. Robert W. Hughes
President
Data Trends, Inc.
1259 Route 46
Parsippany, New Jersey 07054

Dear Bob:

I am afraid that when you send me letters regarding delivery problems I do not give them the attention they deserve because I am either away from the office or tied up with other things. I always pass them on to Stan Olsen, the Vice President, or John Jones, the PDP-9 Product Line Manager, to take care of because they have the responsibility and the information.

If you send your complaints to me because of the incompetence or uncooperative attitude on the part of Stan and John, please let me know because right now I am operating on complete faith in them.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

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R. W. HUGHES
PRESIDENT

DATA TRENDS, INC.

1259 Route 46, Parsippany, New Jersey 07054, Tel.: (201) 334-1515

January 4, 1968

Mr. Ken Olsen
Digital Equipment Corporation
Main Street
Maynard, Massachusetts

Dear Ken:

I find it necessary again to bring up the issue of delivery dates. We have tried to emphasize that we would like to have realistic dates given to us for planning purposes but time and time again promised dates are not met.

The current case is one involving tape units and an interprocessor buffer. These units were originally scheduled for delivery with our fourth PDP-9 system in September, 1967. As you must know, the fourth system did not arrive until early November.

1. On October 16th we were told shipment of the tape units and interprocessor buffer would be made on October 31.
2. On October 24th, we were told that they would be shipped November 30.
3. On December 4th, we were told they would be shipped on December 18th.
4. As of today we know they are still at Maynard but no new delivery date has been set. (This same procedure was also followed recently with regard to delivery of a PDP 8/S).

If you are having difficulties getting the equipment out, we would like to know that. We cannot possibly plan with the procedures that have been followed up to now. We cannot continue to work with dates that fail to materialize within a few weeks of the time they are given to us.

Will you please inform us of the date you will deliver the last tape system and interprocessor buffer and which you personally guarantee.

Very truly yours,

R. W. Hughes

RWH:lsg

January 18, 1968

Mr. Leonard Feder
422 West Walnut Street
Long Beach, New York 11561

Dear Mr. Feder:

Please forgive the long delay in responding to your letter of November 28th. To avoid further delay, I am responding in Mr. Olsen's absence. To be quite frank, your letter was among other papers that Mr. Olsen took on a trip, and it wasn't until I was getting him ready for this present trip that I found we had not removed your letter from his traveling case with the rest.

We welcome you as a "fairly new" stockholder, and I am enclosing a copy of our 1967 Annual Report as you requested. I thought you might enjoy seeing some literature describing the products we make, so am taking the liberty of enclosing a few of these also.

Very truly yours,

(Mrs.) Elsa C. Carlson
Secretary to the President

Enclosures

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422 W. Walnut St.
Long Beach, N. Y.
November 28, 1967

Mr. R. H. Olsen Pres.
Digital Equipment Corporation
146 Main St.
Maynard, Mass. 01754

Dear Sir:

After reading a very interesting report on your company in "Business Week" magazine, I purchased 100 shares of stock in your company. May I receive your latest annual report so as to better acquaint myself with the doings of your company.

Very truly yours,
Leonard Feder

January 18, 1968

Mr. Jack Ziegelmayr
President
Chamber of Commerce
Maynard, Massachusetts

Dear Mr. Ziegelmayr:

I am pleased to advise you that Digital has decided to contribute \$200.00 to the Maynard Chamber of Commerce for this year's activities. A check for this amount is enclosed.

I wish both you and the Chamber success in your current endeavors.

Sincerely yours,

Kenneth H. Olsen
President

KHO:ecc

Enclosure

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digital

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

No. 059166

VENDOR NUMBER	VENDOR INVOICE NO.	VOUCHER NO.	INVOICE DATE			INVOICE AMOUNT	DISCOUNT	NET AMOUNT
			MO.	DAY	YR.			
150214		26497	1	9	68			\$200.00

NON NEGOTIABLE

January 18, 1968

Mr. Alvin Goldman
Tower East
190 East 72nd Street
New York, New York

Dear Mr. Goldman:

It is always interesting to talk about the philosophy of module testing. We built our first module tester quite a few years ago, and have added more as the sophistication and volume increased. Our latest tester can handle 72 pin modules, and like the others, is computer controlled. It can measure response time of the circuits by means of a programmable scope as well as measure dc characteristics.

We are essentially doing what you propose, and I don't see how you can help us with our internal problems. We have sold such machines, however, and you may wish to recommend such a system to some of your other clients. You could write the programs and specify the hardware consistent with the state of the art here. The front end makes measurements while the program makes go-no-go decisions, diagnostic print-outs, or whatever you wish. It is possible to program in such a way as to get a histogram of a characteristic for a batch of modules, or to get a complete print-out of the data for a particular module.

If you are at all interested, come up and see our testers, and we may discover that you can help our internal problems too.

Sincerely,

Richard L. Best
Chief Engineer

RLB:cam

cc: Kenneth H. Olsen

ALVIN GOLDMAN

CONSULTANT ENGINEER

TOWER EAST

190 EAST 72nd STREET

NEW YORK, N. Y. 10021

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts 01754

November 27, 1967

Dear Mr. Olsen:

With the rapid expansion of computer progress and its maze of electronic systems, novel approaches are brought to the forefront every day to make operations and testing more automatic and less dependent on man's handling. I have a service to offer users or manufacturers of complex systems that will reduce circuit analysis and trouble-shooting time and cost.

I have developed a unique system of hardware and associate software that will fully test and pin-point malfunctions in high density, high speed digital circuits. My basic machine-program tester is designed to test printed circuit cards that contain up to 150 ICs per card of the DTL 930 series, and each card containing up to 120 input/output pins. The testing machine is capable of performing dynamic and reiterative tests on both combinational and sequential circuits at the card's operational speed up to 5 Mc. The testing will reveal with extreme confidence any open circuit, shorts to ground or to V_{CC} , open or low power input to card or IC and indicate to the operator which IC out of many, which pin of the IC is at fault and the nature of the malfunction. The machine is highly automated and will perform a full test of the complex circuit card, pin-pointing any malfunction in less than 15 minutes.

The prominent features of this machine-program technique are:

1. Fast, dynamic, fully comprehensive testing of extremely complex, high density circuit cards, pin-pointing malfunctioning IC, its pin number and nature of failure.
2. Tester is capable of locating intermittent malfunctions in IC or board circuit connections.
3. Tester is automatic, requiring a low skilled operator and will complete the test in a short period of time with a high confidence factor (each test is repeated over a thousand times).

ELECTRONICS

Computers, Aircraft, Missiles, Complex Systems

4. Machine can test itself for internal malfunctions.
5. Machine is adaptable to test other families of IC's or devices of similar nature or of different logic levels.

Delivery of machine and programs can be produced quickly (60 to 120 days depending on complexity of circuit cards and number of different types of cards). The machine as outlined above is in the cost range of \$50,000 and each card program is between \$300 to \$700 price range, depending on the card complexity. A system of less complexity can be tested with a machine-program unit that is cheaper and more readily available.

This testing by machine-program technique is adaptable to assembly production of digital or digital-analog subassemblies or even to testing a total system. It is readily foreseen that such a test system will save considerable time and money in reduction of downtime, maintenance, engineering servicing, or production run of complex circuits over any of the present day test techniques. The fast and thorough repair cycle made possible by my method of testing will greatly reduce the high cost of inventory of expensive complex assemblies.

Your inquiries to me are welcome and please feel free to contact me. I thank you in advance for the interest you can take in presenting my services to the appropriate management in your organization.

Very truly yours,

Alvin Goldman

P.S. Please note additional information on next sheet.

In addition to the enclosed letter, I want to give Digital Equipment Corporation, a leader in the EDP industry, the opportunity of benefiting from my unique and far reaching technique in system analysis.

The programing technique and the error cross-correlation that I use to detect and pin-point malfunctions in a complex circuit card is ideally adaptable for trouble analysis of large scale integration (LSI) packaging which is rapidly coming to the forefront in the IC industry. Because my test programing is so thorough, the incoming inspection or high percentage of IC testing can be eliminated as the defective IC will be detected and quickly located on the finished circuit board by my testing. This is a considerable saving in time consuming inspection operations that manufacturers would like to avoid.

Another point is that it is not only possible but practical to apply my test technique to the input/output terminals of a medium scale or even a large scale computer to locate the defective IC or interconnection that is at fault among the thousands or tens of thousands of node points in the system. This will lead to astronomical savings in inventory of replaceable parts and down time of the computer system.

The uniqueness in principle of my programs can be demonstrated on your circuits at a fraction of the cost of my \$50,000 price range machine by a much slower operating technique that will show thoroughness of the test and the fineness in fault location detection. Once this demonstration of technique is revealed, the speed up of this operation and the side effects to the testing capabilities due to this speed up will become obvious.

I have given considerable study to complex analysis, some of it developed on previous activities with the leading firms in the industry. It would be to your advantage to arrange an appointment with me as soon as possible as I would like to explain in more detail why Digital Equipment should capitalize on my services.

Trusting to hear from you.

Sincerely,

Alvin Goldman

January 17, 1968

Mr. Bahmana Setareh
P. O. Box 39
Richmond, Indiana 47374

Dear Mr. Setareh:

Thank you for your letter of December 17th addressed to our President.

As requested, I am enclosing several pieces of literature to show you what our Company makes, along with a copy of our 1967 Annual Report.

DEC stock is traded on the American Stock Exchange.

Very truly yours,

(Mrs.) Elsa C. Carlson
Secretary to the President

Enclosures

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B. Setareh
P. O. Box 39
Richmond, Indiana.
47374

December 17, 1967

The President
Digital Equipment Corporation
Main Street
Maynard, Massachusetts 01754

Dear Sir:

I have read an article in Business Week's November 25, 67, issue with interest, about your company's participation in " Fall-Joint Computer Conference", held in Anaheim, California.

Having obtained your company's address through Business Week's Industrial Department, I am writing to you to ask you if you could kindly supply me with some general information about your company's main products, and wheather your company is publicly owned. If so, I greatly appreciate it if you would supply me with a copy of your annual report available and also on which exchange is your stock registered.

Thank you for your prompt action and reply.

Very truly yours,

B. Setareh

~~Bahmana Setareh~~

January 12, 1968

Mr. Malcolm C. Harrison
Courant Institute of Mathematical Sciences
251 Mercer Street
New York, New York 10012

Dear Mr. Harrison:

Please excuse the delay in answering your letter to Mr. Kenneth Olsen regarding Digital's potential role in the Computer Science Series you are editing for Scott-Foresman.

I am interested in pursuing the idea of a monograph on the PDP-8 computer. For your information, we have recently introduced an integrated circuit version of this computer, the PDP-8/I. I have enclosed a copy of our new Small Computer Handbook which contains a complete description of the how's and why's of the PDP-8/I. The book also contains a primer on digital computers, drawing on the PDP-8 as an example.

It occurs to me that this book, or part of it, might serve the purpose outlined in your letter. We have all the artwork and galley proofs here. They could be made available for your use on request.

Let me know what you think of this idea. I will be happy to work with you in any way I can.

Yours truly,

Stephen D. Bowers
Product Promotion Manager
Small Computers

SDB:meh

CC: Ken Olsen
✓ Mike Ford
Allen Kluchman

sure

C
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P
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12/19
C- Elaine Morrall
for either Mike or Allen K. to handle

NEW YORK UNIVERSITY

Courant Institute of Mathematical Sciences
AEC Computing and Applied Mathematics Center
251 MERCER STREET, NEW YORK, N.Y. 10012
AREA 212 460-7100

November 30, 1967

Mr. Kenneth Olsen
Digital Equipment Corp.
Maynard, Massachusetts 01754

Dear Mr. Olsen:

I have been asked to edit a Computer Science series for Scott-Foresman, and would like to make the suggestion that one of your engineers write a monograph on the PDP-8 as part of this series. I enclose a brief description of the activities of Scott-Foresman for your information.

It has been my experience that most text-books in Computer Science are out-of-date as soon as they are published, the main reason being that they attempt to be too general. My feeling is that specific descriptions of working programs or machines do not become out-of-date in the same way, and are more valuable to the student in that he can see and touch the machine being described.

My current thoughts are for a monograph on logical design, culminating in an explanation of how and why the PDP-8 is designed the way it is, and how it could be extended or interfaced to other equipment. The book should contain complete logic diagrams of the PDP-8 in an appendix.

It is my understanding that Scott-Foresman will be giving this series unusually active promotion.

I am sure that the publicity value of such a book will not be lost on you, nor the potential sales value of having such a book used by high-schools or universities as course material.

If you would like to pursue this matter, or have any other suggestions, I would be pleased to hear from you.

Yours sincerely,

Malcolm C. Harrison

MCH/ns
Encl.

SCOTT-FORESMAN

The company is the largest textbook publisher in the United States. A few publishers are larger than us, but Scott, Foresman derives its sole income from publishing books--and books only. We do not have any subsidiary activity which is foreign to book publishing. Our gross annual sales will probably be over eighty million dollars per year, and of this, the college textbook division will gross close to seven million. The company's stock is listed on the New York Stock Exchange. Previously, the college program has been devoted exclusively to the humanities and social sciences, rather than science and mathematics, which explains why you may not have seen any of our publications in your field. I know that we will be successful in computer sciences, primarily because we have the financial capability to do the things we set out to do.

The books that launch our computer science list will receive unusually intensive promotion. In general, Scott, Foresman's college division has long been known for the sales effort it gives its books. With thirty-six men in the field, there is the manpower of a major competitor for the college market. What makes this force unique and uniquely effective is that its man hours are devoted to promoting a list of less than four hundred books, while the sales forces of some other college publishers must expend their energies on lists ten times that size. Scott, Foresman's man hour/title ratio is the highest in the industry, and sales figures clearly indicate the benefits that accrue from such concentration.

January 12, 1968

C

Mr. J. W. Ray
Director/Secretary
Thorn Automation Limited
Rugeley
Staffordshire, England

O

Dear Mr. Ray:

Your letter of January 2nd has been referred to me for reply.

P

As you requested, I am enclosing several pieces of our literature so that you can see what our Company makes. Also enclosed is a copy of our recent annual report.

Y

Very truly yours,


(Mrs.) Elsa C. Carlson
Secretary to the President

Enclosures

Thorn Automation Limited
Formerly Lancashire Dynamo Electronic Products Limited

Rugeley
Staffordshire, England
Tel: Rugeley 3271 & 2151

Cables: Control, Rugeley
Telex:
36135

 **THORN
AUTOMATION**

YOUR REF.

OUR REF. JWR/BH

The Secretary,
Digital Equipment Corporation,
Maynard,
Massachusetts,
U.S.A.

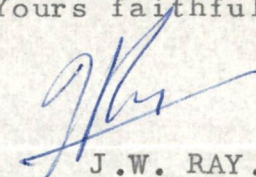
2nd January, 1968.

Dear Sir,

We are a customer of your U.K. Company and would be interested in gaining further knowledge of the Parent Organisation.

Can you please send me a copy of your latest accounts and any other literature that you consider would help us in this respect.

Yours faithfully,



J.W. RAY.
DIRECTOR/SECRETARY.

DIGITAL EQUIPMENT CORPORATION

MAYNARD, MASSACHUSETTS

KENNETH H. OLSEN
PRESIDENT

January 5, 1968

Dean Robert O. Harvey
The University of Connecticut
Storrs, Connecticut 06268


My dear Dean Harvey:

We are pleased to hear of your interest in our computers for use in education. Because of our academic background, we are very interested in this application of computers.

We have just developed a software package, which we call "FORGE," for our PDP-8 and PDP-8/S computers. This, I believe, is just what you're looking for. I have asked Mrs. Joan Fine, of our educational marketing group, to contact you with details of our computers and this software package.

We have a rental plan which I think makes it very easy for a school to obtain one of our machines. We look forward to working with you.

Very truly yours,



Kenneth H. Olsen

KHO:ecc

cc: Mrs. Joan Fine

June
THE UNIVERSITY OF CONNECTICUT
THE SCHOOL OF BUSINESS ADMINISTRATION

December 26, 1967

Mr. Kenneth Olsen
President, Digital
146 Main Street
Maynard, Massachusetts 01754

Dear Mr. Olsen:

Digital's desk-size computers have recently come to the attention of faculty members in the Department of Accounting of the School of Business Administration. Enthusiastic reports about the capabilities of your machines prompt me to inquire for detailed information about them and their availability for academic institutions.

Our staff members in Accounting have for some time been urging the acquisition of small computers which could be readily available for classroom purposes. To date we have been unable to manage the resources to acquire the computers, to say nothing of our failure to identify machines of a size and capability appropriate for our use.

Our needs do not require the "latest, fastest, most expanded" type of machinery. If you could direct that descriptive material on Digital's machines and software be sent to me, I would be most appreciative.

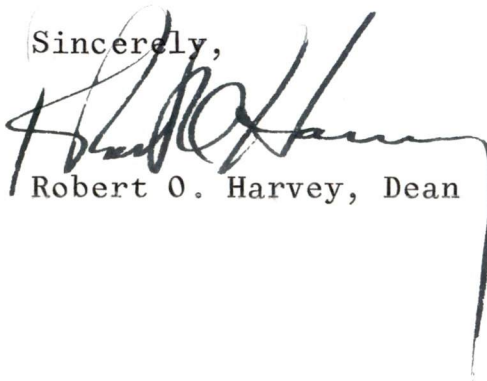
I am sure that the perennial poverty pleas from school people are wearisome, but if Digital has an "academic discount" or considers the

Mr. Kenneth Olsen--2

December 26, 1967

placement of computers in schools as a part of the corporate giving program, you may be sure that I would deeply appreciate information on these matters.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert O. Harvey". The signature is written in a cursive style with a long, sweeping underline that extends to the right and then curves downwards.

Robert O. Harvey, Dean

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January 4, 1968

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Dr. Wilbur F. Pillsbury
Department of Economics and
Business Administration
Knox College
Galesburg, Illinois

Dear Dr. Pillsbury:

We want to thank you for the invitation to join in your study for
"Use of the Computer in Teaching of Undergraduate Economics and
Business Administration Courses in Liberal Arts Institutions."

We have given consideration to your proposal, but because of the
programs we have now started in the use of computers in education, we
are not in a position to take part in a further program.

Thank you again.

Sincerely yours,

Kenneth H. Olsen

KHO:ecc

KNOX COLLEGE

GALESBURG ILLINOIS



Department of Economics and
Business Administration

November 29, 1967

Mr. Kenneth H. Olsen, President
Digital Equipment Corporation
146 Main Street
Maynard, Massachusetts 01754

Dear Mr. Olsen:

I am writing you to inquire if your firm would consider sponsoring a study dealing with, "Use of the Computer in Teaching of Undergraduate Economics and Business Administration Courses in Liberal Arts Institutions." This research will be concerned with the computer as an educational tool to a better understanding and insight into economics and business administration as a discipline. The main purpose of the study will be to provide a more effective learning environment and thus encourage:

1. More undergraduate liberal arts students to study economics,
2. The use of the computer as a learning device in the study of economics,
3. An extension of the student's learning and understanding of the subject of economics,
4. Faculty to keep abreast of technological advances in the computer as it is designed to assist in educational programs.

The object will be to make recommendations on methods of instructing undergraduate students, through the use of the computer, the various aspects of economic and business administration principles, policies, and programs. Hopefully, the recommendations to come from this study will guide the teaching programs of the faculty in the economics departments at undergraduate liberal arts institutions.

In the research, I plan to study the existing programs available in graduate institutions and their application to undergraduate teaching. I plan to involve, primarily, the faculty of the ten liberal arts colleges of the Associated Colleges of the Midwest: Beloit, Carleton, Coe, Cornell, Grinnell, Knox, Lawrence, Monmouth, Ripon, and St. Olaf. Also involved will be a number of consultants from industry (hopefully, your company) and large universities which are presently using the computer in their graduate instruction.

The research will be done during a sabbatical leave from Knox College,

January to September, 1968. This will allow me to devote full time to the study. I want to stress the fact that the funds expended will be used for expenses only, and will not involve any salary remuneration. These expenses will approximate \$5,000-\$6,000. A full accounting will be given to you by Knox College.

My educational background includes a doctorate in economics and business administration, and twenty years of teaching and administrative experience in liberal arts colleges. This association has shown that there is a real need to take advantage of the full potential of the computer, not only as a research tool, but as a partner in undergraduate instruction. I believe we in the undergraduate liberal arts colleges are only beginning to witness the wide use of the computer in our teaching. It is my desire to strengthen its use in the social sciences and, more specifically, in the learning of economics and business administration.

I am enclosing an outline of the tentative procedure to be used in the study. I sincerely appreciate your consideration of this proposal and look forward to hearing from you.

Sincerely,



Wilbur F. Pillsbury
Chairman

WFP:gbl
enclosure

TENTATIVE PROCEDURE

FOR STUDYING

USE OF THE COMPUTER IN TEACHING OF UNDERGRADUATE ECONOMICS COURSES IN LIBERAL ARTS INSTITUTIONS

1. Thorough review of what has been done
 - a. Examine the available literature
 - b. Visit approximately 12 institutions which use the computer in graduate programs
 - (1) Discuss existing programs
 - (2) Application to undergraduate economics and business administration majors in liberal arts institutions
 - c. Attend workshops relating to computer application to education
2. Prepare tentative report relating computer to teaching undergraduate economics and business administration courses in liberal arts institutions
 - a. What, if any, has been done
Relate computer-assisted instruction to undergraduate liberal arts courses
 - b. What can be done
 - c. Relate course approach to some textbooks in use
3. Hold conference with representatives of Associated Colleges of the Midwest
 - a. Representatives of economics and computer faculty
Representatives of large universities presently using programs
Representatives of computer industry
 - b. Discuss and enlarge upon tentative report
 - (1) Application to specific economics and business administration
 - (2) Experiment in the development of specific courses

(3) Enrich economics course material

(4) Better understanding of educational process and theories
of learning

4. Preparation of final report

Wilbur F. Pillsbury
Professor of Economics
Knox College
Galesburg, Illinois