

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECTS 86/2

922 SCOMM32: AK GENERAL STOCK OWNERSHIP CORP. 1979-80 922

11-9-79

current Board is very active reg. mtgs once every month
with ad hoc mtgs every 2-3 wks

Workers find that they are now working for
themselves and neighbors etc. rather than an absentee
owner

AGSOC's competitive advantage in the market of one
corp buying other cosps

60 mil/yr
interest income
alone

Banks were given .25 cents for each share of stock that
they sold - shares could be used as collateral and even
with ^{467 mil} nearly 2 billion dollars worth bought there didn't appear
to be any adverse effect on any other money market in retail,
savings, bonds, auto - auto thought before the sale
that they would be severely hurt by such a draw of cash
from the public - people began to look to Gold or BCRIC
shares as the best hedge against inflation

and Petio Can

England National Oil - TVA and others have looked
at BCRIC as a ~~possible~~ possible method of turning these
resources back to the people directly

Apr \$1.40 per share holder per year to service i.e. distribution
of dividend and financial reports. quarterly report cost \$.20
to put - stockholder checks.

11-7-79 Ket. 7:30p

7 attended

Reps. Miller, Cardiner, Parker, Fuller Kristine, ~~Ken~~
Ken & myself.

Letter SB2 + 237

3 Letter Billers

1 Reporter then there were 6

8:30 AG SOC

1. Dick Whitaker - ^{opposed} Gravel reelection scheme / what
about the management - that is so important to the
success of this kind of corp.

2. ^{Mr. Paul} Wingram - if AG SOC passes to Gravel loses
he might become one of the incorporators.

Memo

To: Rep. Jim Dwyer

From: Dale C. Fally

Subject: AGSC Hearing Trip Report

Date: 11-26-79

Wednesday, 9-7-79

AGSC hearings in Ketchikan, committee members present, Representatives Mike Miller, Terry Gardiner, Bill Parker, and Jack Fuller. Also present were Ken Rosenstein and Kristine Harbo, committee staff.

Two Ketchikan residents testified:

Dick Whitaker was opposed to the concept as he saw AGSC as a reelection scheme for Senator Fred Gravel and was emphatic about the importance of good management to the success of such a corporation; but had no suggestions.

Paul Wingen also testified with concern that if Senator Gravel were to lose the next election he could become one of the incorporators.

~~Continued on page 2~~

own holdings ie BCRIIC served as a vehicle to separate exploitation from regulation.

As for the 2.3 million acres of land BCRIIC received oil and gas exploration licence to, Helliwell call this the pizzazz in the investment package. He also indicated that Alaska may want to consider a similar gift to ABSC thus providing it with some assets.

Helliwell stated that the people of British Columbia really see BCRIIC as their own corporation and are very directly interested in its success. This was also affirmed in varying degrees by the people I talked to while in B.C. Another factor contributing to the corporation's acceptance may be that the people now see themselves working themselves, their neighbors, and their province rather than absentee owners.

Don Alexander 388-4415 Free BC Systems
9:00 Task Ralliedge - Montreal Trust

Jerry Baucher's Notes
Jan. 1980 mtg

1. Mechanics of stock distribution
2. Stock offering - mechanics
- price
- registration costs } costs greatly -
3. Conflict of interest - discrimination
- appeals procedure on residency
- how residency is determined
- minority shareholders

—— Kellinell -

data base migrant problem - consulting firm
retained by govt to advise how to set up the
distribution

1300 separate physical locations - couldn't
do by mail - w/ remote people folks went out into
the bush - driver license
SSec card
Medicare card } special treatment for
natives

Where records are the stock records - the stock
record is most up to date & accurate list of the citizens
of BC (but other list is driver licenses w/ is 20%
incomplete)

Hawkins - Computech

June 22 Feb 78

Issue of new shares + sale of shares was simultaneous

March 15 - June 15 app period 1979

Aug 7 shares available for dist

Sept 30 distribution stopped

- applied for but not received up till Feb 29
available from govt agent office if hadn't received

- Oct 1, 79 - to Dec 31, 79 govt offices
will accept application

Eligibility - be / eligible to be Canadian citizens
- resident of province for 12 mo.

They accepted peoples words under penalty of perjury

Power of attorney for people who are incompetent

22 Feb 79 - corporation organized

Nov 30 78 - prime decided to give shares away

Jan 11 79 - prime announced new distribution

6 March 79 - bought assets for new interest
bought promissory notes 150m -
swapped stock for the notes

Govt gave away 12m of the 15m shares

Record date for Canadian Cellulose was March 16

They proposed 50m cash grant from BC govt bc the assets
were generating sufficient cash flow - or long term
cash flow capital loan

Alberta - dividend to the people - during 1950's
Alberta act to dist nat. resource revenues
to people

Contract rights of minors under BC law were covered
to the - below 16 mothers could apply for extra
shares w/ were legally their own and not the
children

Fathers felt discriminated
Indians got special treatment
Indigents - both stock & dividends are
excluded from welfare C5

BC Systems Corp - handled mechanics of stock
dist - govt operation which hired Hawkins
Govt remunerated agents at 250 for
taking app / 250 for dist shares

Since ~~for~~ shares and sales shares will be handled at same time BCRIC gave high commission 25% to help carry the overhead

Banks wanted 750 for each application - govt spent \$9M while BCRIC spent \$20M in Commissions Hawkins spent \$6M on his operation plus 600,000 on advertising -

Ask Hawkins what it would have cost to put the list together just as information for govt. w/out issuing shares

No possibility of directors benefiting from the Co - no promoters/speculators - not trying to milk

Jan 11 announcement by Premier - Premier had to get order of council exempting the Premier from securities laws disclosure - then exempted the entire offering from the ~~Plans~~ - but they went ahead

Largest prior issue had been Bell Canada of about \$250M - only two larger issues in North America than the BCRIC - for going public and

BCRIC survey showed great confidence in the province and saw it as a long term - they did this w/ survey of 150 phone calls

Because we don't have same national attitudes may be even more important

BCRIC was sold as a nat. resource co.
but they never made clear decision to be a nat. resource co.

Montreal Trust handles stock transfer problems - they made decisions and dealt with all the problem - \$300,000 per yr fee

They considered elimination of stock certificates but needed them for bearer shares - the registered shares only represent ownership

In the Act itself there is a provision allowing a judge to issue special rules to take up out of a firm

Bob Hawkins - Computech

early Dec 1978 Jimmie decided to dist shares - why he decided to dist rather than sell cos it was clear to Bob -

Decision was made to money share dist + capital stock offering w/ was a good idea - perceived as a success because of the amount of money raised

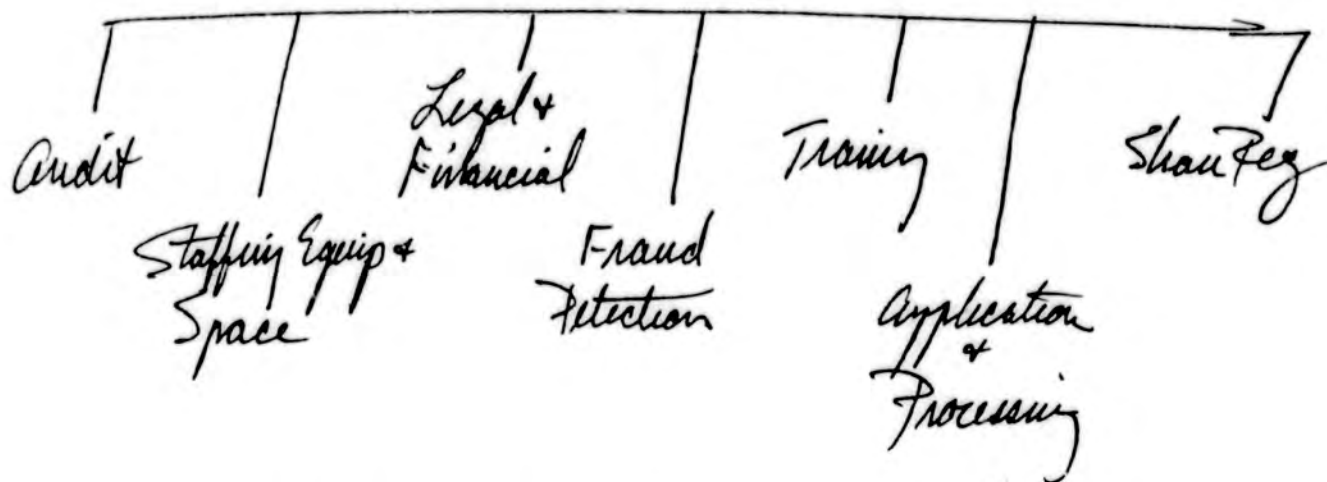
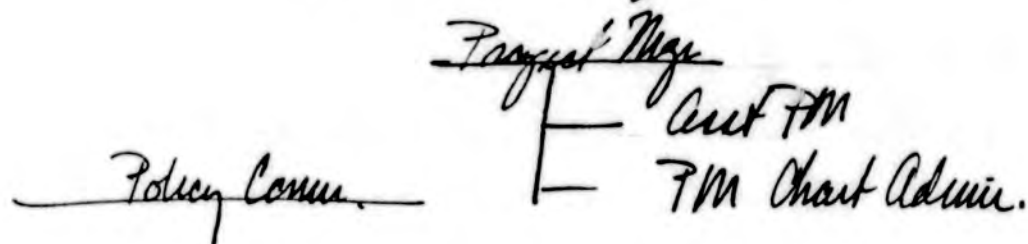
From a cost point of view best way is to get certificate into the hand of Sh in one stroke - mechanics of having people come in and apply for shares had something to do with the success of the stock sale

30 days to design / 30 days to implement - 60 days from idea to function

Hawkins started out as a design consultant on the project
hired 50 clerical staff / 25 key punching people (must look at people availability or will be hiring keypunch people from Seattle) - typists are easier to hire w/ better availability

Development staff was from 30/50 people - lawyers, accountants (audit staff),

Development Organization



Full time staff 20 } 40 day
 Part time " 20 }
 15 for 20 days

Receiving
 Cashier
 Edit & Balancing
 Accounting & Data Control 50 from 3/15 - 8/15
 Data Entry plus 50 from 5/1 - 6/30
 Microfilm
 Fraud & Error Resolution
 Trouble Calls
 Filing
 Staffing

he would try to loosen up power of attorney process
to catch more people first time around and then

Outside auditors from B.C. was Peat Marwick in Vancouver
this report cost \$100,000

Don Alexander - Pres. B.C. Computer Area
Mike McKinnon VP Fin B.C.R.C.
Sholto Hebertson - Attorney
Bob Hawkins -

Weekly notes to check the flow chart for the
project - each event was charted and then set
out

One of the things which they did was to do things
twice to insure accuracy - they chose manual
systems and used Pickup to insure

3 tasks pre audit (conf information)

- ① determine eligibility & handle each
- ② eligibility / fraud
- ③ share registration process (transfer agent handled this)

16 tons of brass share
100 cubic feet of registered shares }
Registered 140,000 share holders

Mailing out is cheapest & easiest way to dist
stock but not the most impressive to Sh

They were concerned with the bank and the like
the way they did the dist through the banks - he
would tighten up accounting through banks -
would investigate travel practices of people
in the state to find them - availability of govt

Problem estimating how many people
were eligible he didn't know how many had
lived in Br for 12 mos. - try to make eligibility
clear & w/ few exceptions

Needed 2 of 3 pieces of ID to apply -
used telephone to call people & tell them
they couldn't apply more than once

They had 2.1 m people apply for free shares
on 1.7 m applications - broke into 3 types

- 1) registered (100 or more)
- 2) free shares
- 3) purchased share (less than 100)

1) 140,000 app for reg shares (120,000/130,000 people)

- 3) 70,000 purchase appl. (40,000 people)
2) 2.1M terre bearer certificates
ca 10.4M fee shares issued
4.5M owned by govt.

Transfer function for small companies \$3⁰⁰C
include their analyzing \$7⁰⁰ plus postage etc.
Single transaction \$12¹

To avoid hucksters must clarify intent & if the
salesmen get out of line pull licenses
- don't let them sell in malls / door to door
bc it will make it a joke
- people taking advantage of Indians

1300 locations for application -

Avoid addresses in stock

① cost of original doubles

② transfer costs go up bc changes

Certificate should be pretty - value represented

Planning is very important to success - spend
extra time on planning & it will reduce the implementation
time

For Project Administrator

Good Control / no panic

reasonably high profile guy

someone who can pick premium / go / instant + get response
door pragmatic to bull market

good organizer

good "systems" man would be helpful

Must be a risk taker

Politically you want 90% of the people to apply for
stock - for \$30 someone might not walk
around the corner

If people believe this is a sham then they won't
apply & if only 50% apply will be a joke

Jack Fittedze - Montreal Trust 688-4411

Sholto Kelvinton - Shum; Little & Kelvinton 688-2155

505 Burrard 18th floor

Jack Rutledge (John R. Rutledge)
Montreal Trust Co.

If the purchase had separate application or one more copy of original - they got the form & then had to return it to the service co -

They didn't do this b/c they used up all the paper

When preparing the certificate they would have just address on the stock certificate -

Could also have done fraud check first and that would have avoided recession of ~~something~~ some shares of stock w/ were already put together by the transfer agent

Original intention was to put all data on computer and then run the stock certificates on the printer - they decided to go manual because of flexibility - typewriters and typists are easier to get than computer terminals and operators - tried not to go overboard

Lawyer might come for transfer agent to make signature easier when issuing alot of stock

They have 40 people servicing 300,000 accounts.

The quality of the product depends on the audit review and quality control - input to computer system for record keeping is critical

Better data from bank would help - incentives/punishes to the banks would help

Could have helped if applications must be typed - guessing
whether this would be possible - would improve
quality of data input

Start controls at day one and don't let up - overreacted

Transfer agent problem is greater than Bc because
you are dealing almost totally with uncomplicated
investors - in Bc 70% of registered Sh. were first
timers - sales persons from banks and credit unions
were also uncomplicated

Ann Nitz March 27, 1980

The shareholder relations dept at BCRIC has taken
some of the load off the transfer agent. - lady who handled
hot line for stock issue runs dept at BCRIC - they write
down each question and each answer + file

With respect to TR agent size is not so important
as their experience and their computer capacity - flexibility
is an important element (a rigid organization won't be
able to do the job)

-
-
1. Make quality of incoming product as good as possible
 2. Have as many copies of the form as possible
 3. Get \$ Sec number in as many cases as possible
 4. Typists on a dime a dozen but auditors aren't - Controls
 5. Dealing with spoiled certificates
They set aside a batch of 3000 certificates w/ were used to replace spoiled (w/ typing) certificates then and the memo body work in consecutive orders

This system is adapted from U.S. Trust - Morgan Guaranty has best system in the world from a computer standpoint

Need to be able to run list of new accounts for a period of time - want to send a letter to new accounts from the corporation welcoming the shareholder & for other purposes

What does St Statute currently applies to Directors
officers like registration AS 45.55.060 A7, investment
advisors

do we have anything that applies NBSCC ~~to~~ NASD
rules

further contract extension is how we will accommodate
SEC on these two (conflict & indemnification) Sam
would make ~~the~~ recommendations

also holding period

book value as to demand for repurchase
Public Utility

* Call Sam Monday ¹²⁻³¹ 202-272-6414

Call office + Ken Friday 12-27
on check deposit + Sam's questions

Make Rm. Res. Hotel Georgia 1-604-682-5566

BORIC 2600 W. Hastings

Arrival ^{12:00} mid night Sun 1-6 and Monday 1-7

David Helliwell BCRIC
Bob Hawkins Computech

1-2-80

(John R)
Jack Rutledge Montreal Trust Company (Transfer Agent)
would liked to have had an extra copy of the application
form also would have been ~~more~~ easier to have all
the registered stock coming to MTC direct rather than
through Bob's shop.

Name quality on applications should be better (legibility)
300,000 accounts requires approx 40 people
BCRIC with 130 to 140,000 amounts to about 1/2 of
MTC business

140,000 issue took 2 wks to get out to shareholders
data quality at Bank level should be improved to have better
data going into computer ie applications should be typed
to eliminate errors of interpretation

70-75% initial investors are considered as unsophisticated

3-27-80 first BCRIC Stockholder info

education relations
Shareholder information person records caller info question answer

Agent must be well experienced and flexible

need good bookkeeping & good controls

100 cu ft. of certificates to be issued

Time zone differences and line problems to central data systems

12-27

12-19

Monday Jan. 7 + Tues Jan. 8, 1979

BCRIC 604-687-2600

Judy Kinell

1. People who put the offering together

McLure
Monday Jan 7
10:00 AM
Riv Office

2. Those involved in setting up the distribution of the book

3. Political backdrop of BCRIC concept

? 4. General Counsel re: conflict of interest, and indemnification of officers and directors

12-20

Rosenstein to ^{Sam} Stern 202-872-6414

398 P. 2D 213 Alvest Inc. V.S. Superior Oil Corp
Officer or Dir stands in a fiduciary relationship + he must reasonably protect interest of Corp. + duty breached when they take advantage of a business opportunity when that opp actually should have gone to or belonged to their employing company

SEC

Jan 10 + OK
but he is leaving
that evening

conflict +
indemnification

no statutes expressly dealing with officers + investment advisors

Send Sam

NS 45,55,060 A7 Investment advisor....

regist required

NASD rules used

NS 45,55,120 A4,5,6

Securities must be registered (AGSOC exempted)

Send Sam

3 AAC 08,060

202-224-6665

Jerry and
Ken final
Senate version
of Windfall

From Model
Act

NS 10,05,216 (10,50,230 of AGSOC)

10,50,225

no leave to officer or dir.

10,50,230

Liability of Directors in Certain Cases

10,50,245

removal of directors

10,60,630

known fraud act

635

" " Distribution

Request exemption on 2 based

AN OWNER: What it means

As a shareholder in British Columbia Resources Investment Corporation, you are a part owner of BCRIC.

As an owner, we know you will be interested in following the affairs of the company and we intend to keep you as informed as possible.

If you are a registered shareholder (that is, you own shares which have been registered in your name) you can attend, and vote, at the shareholders' meetings.

If you are the holder of bearer share certificates (shares that are not registered in any name), we have no name or address to which information can be sent in the mail. However, we will endeavour to keep you informed through announcements in the press, advertising, and through our shareholder information service at the phone numbers listed on the back page.

If and when any cash dividends are declared, registered shareholders will receive their dividends by mailed cheque while holders of bearer certificates will be able to receive their dividends at a financial institution. You will be informed in advance of any dividend payments.

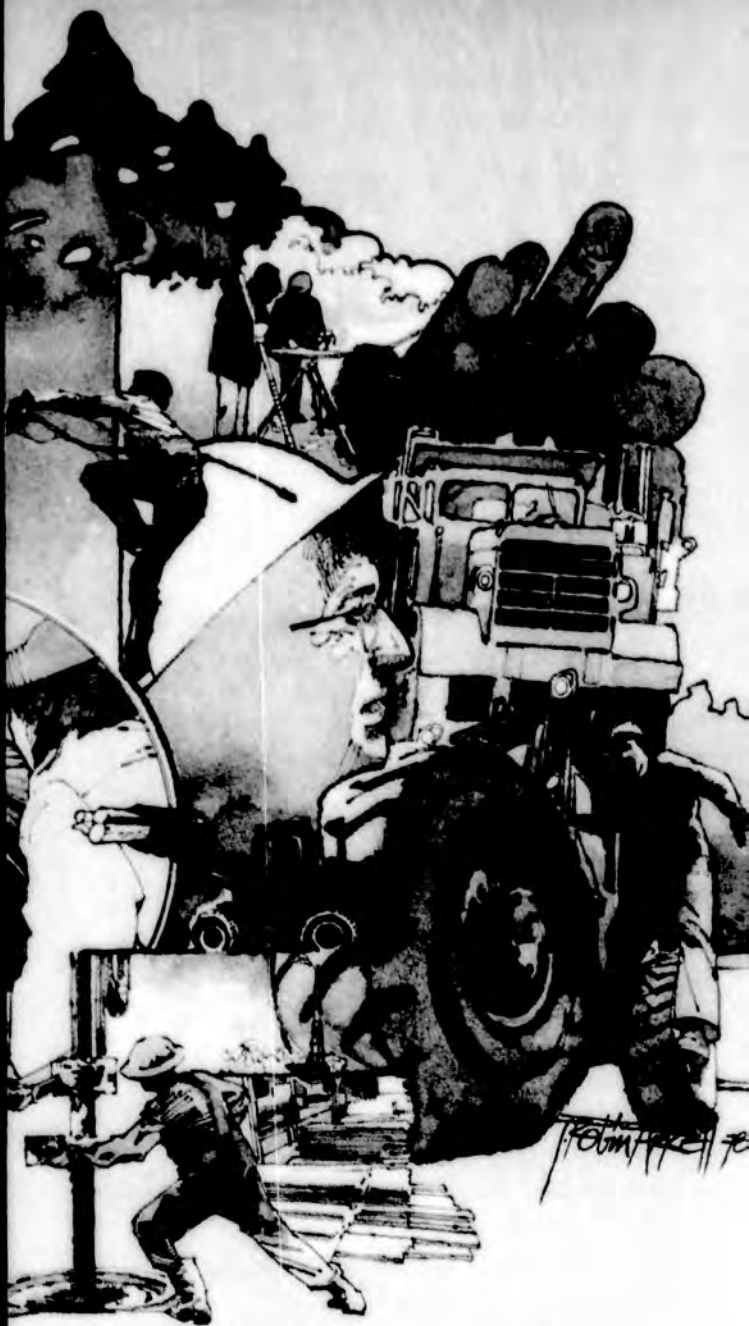
If you have questions about your shares, you may:

WRITE: Shareholder Information Services, B.C. Resources Investment Corporation, 2600 - 1177 West Hastings Street, Vancouver, B.C. V6E 3Y3

PHONE: BCRIC Shareholder Information Services. In the Vancouver area, call 669-4443. Outside Vancouver call toll-free (112) 800-663-9122. Shareholders living in the area north of Stewart and Wonowon may call collect 669-4443.

If you wish to transfer or change your share registration, write to:

Stock Transfer Department
Montreal Trust Company
466 Howe Street
Vancouver, B.C. V6C 2A8
(telephone 688-4411)



A share in BCRIC

British Columbia Resources Investment Corporation

WELCOME to BCRIC

We're pleased that you have become a shareholder in British Columbia Resources Investment Corporation. You are among approximately 2,000,000 individual shareholders, registered and unregistered, of the company.

For those of you who have not owned shares in a corporation before, we've attempted in this pamphlet to give you some information you might find useful concerning your shareholding.

Please take time to read about certificates. They are valuable and safe-keeping is of prime importance.

We hope you find the experience as a shareholder a rewarding one as BCRIC grows and develops.

If you require further information, please write to us or call our shareholder information service.



David L. Helliwell
President and Chief Executive Officer

August, 1979

BCRIC

YOUR SHARES

B.C. Resources has issued two kinds of share certificates, bearer and registered.

Each bearer certificate is for five shares, and these certificates are "negotiable" in that they can be readily exchanged or sold without any registration. If they are lost, stolen or destroyed they cannot be replaced.

Owners of bearer share certificates who accumulate 100 or more shares can have these certificates transferred into a registered share certificate by writing to the Montreal Trust Company in Vancouver whose address is on the back page of this pamphlet. Any chartered bank or trust company will assist you in safe delivery of your shares to Montreal Trust, usually for a nominal fee.

Registered certificates have been issued to those shareholders who initially applied for 100 shares or more. As a registered shareholder, your name is on the share certificate and on the company's list of members.

If your registered share certificate has an incorrect name, or you wish to register the shares in another name, you should write to the Vancouver branch of Montreal Trust Company, making your request and enclosing your endorsed share certificates. We suggest you send certificates by registered mail or through a bank or trust company.

BCRIC

THE MARKET: Buying, Selling and Ownership

Shares of BCRIC will be traded on the Vancouver Stock Exchange and application will be made at a later date to list the shares on other stock exchanges in Canada.

Share prices as established in the trading marketplace will usually be listed in daily newspapers that carry Vancouver Stock Exchange or other market quotations.

Buying and selling shares is usually done on a stock exchange through an investment dealer, for a fee or commission. In the case of BCRIC shares, the Vancouver Stock Exchange has made some special exceptions to its normal practices and will accept as a "board lot" units of five shares until January 31, 1980. This will assist people to trade in smaller amounts.

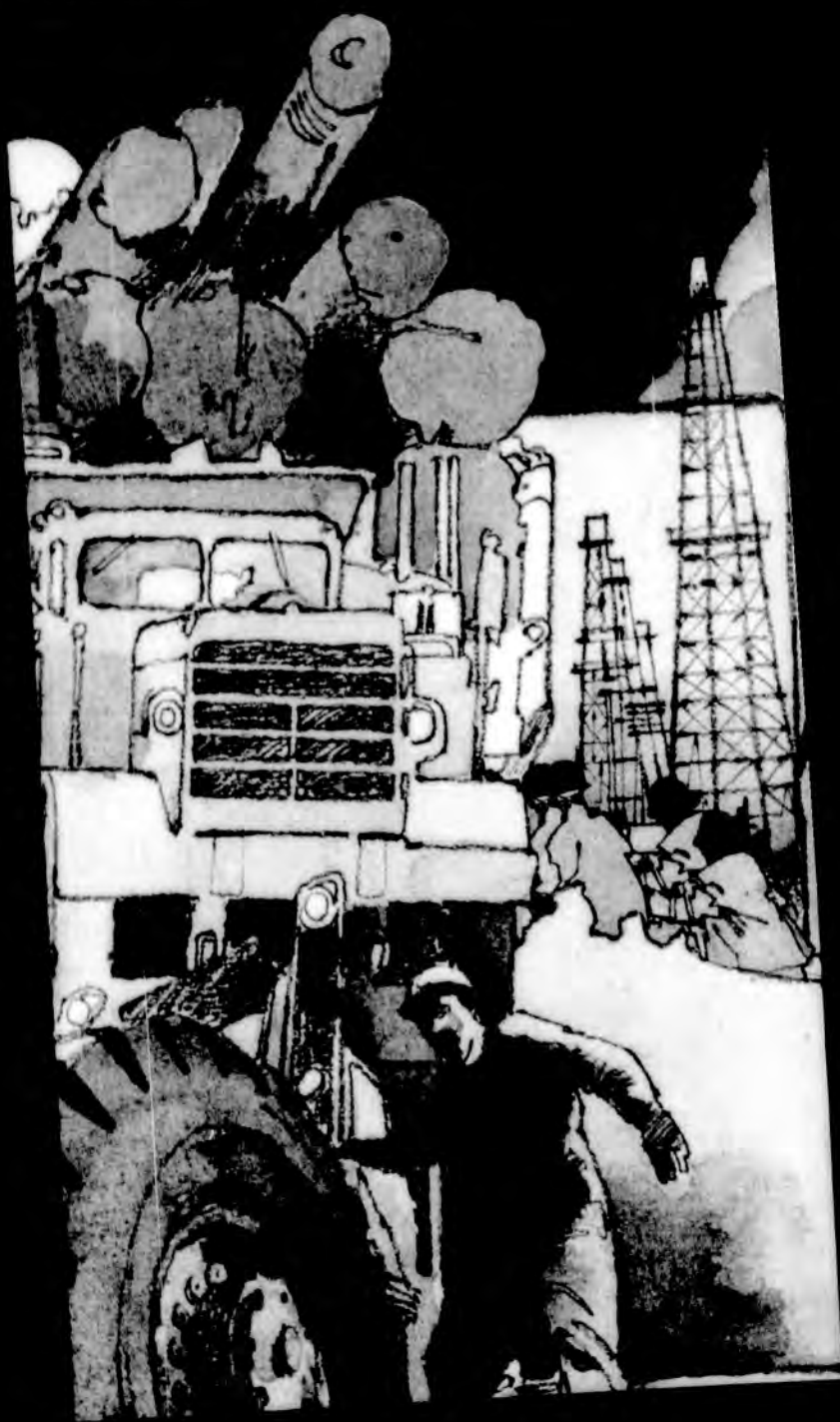
If you wish to buy more shares, or wish to sell your shares, and there is no investment dealer (stock broker) near you, you can ask any branch of a Canadian chartered bank or trust company to handle this.

You may also trade your BCRIC bearer shares with other individuals at an agreed price if you wish. Since bearer certificates do not carry the name of the shareholder, they can be transferred between individuals by physical delivery.

NINE MONTH REPORT 1979

BCRIC

British Columbia Resources Investment Corporation



CONSOLIDATED STATEMENT OF CHANGES IN FINANCIAL POSITION

BCRIC

Unaudited (Thousands of dollars) Three months ended Nine months ended
September 30, 1979 September 30, 1979

Source of funds		
Operations	\$ 22,524	\$ 52,487
Share subscriptions received	13,283	487,464
Issue of shares on conversion of promissory note	—	151,533
Other	228	1,057
	36,035	692,541
Application of funds		
Conversion of promissory note to share capital	—	151,533
Investment in petroleum and natural gas properties	3,161	3,864
Additions to property, plant and equipment	8,926	20,836
Share issue expenses (net of reduction of income taxes)	281	12,558
Long term debt reduction	14,816	22,464
Dividends paid by subsidiary to minority shareholders	188	560
	27,372	211,815
Increase in working capital for the period	8,663	480,726
Working capital at beginning of the period	549,885	77,822
Working capital at end of the period	\$558,548	\$558,548

*Weighted average shares outstanding was calculated on the basis of 15 million shares outstanding January 1, 1979, with the balance assumed to be outstanding on the dates the company received the subscriptions.

CONSOLIDATED BALANCE SHEET

BCRIC

Unaudited (Thousands of dollars) September 30, 1979 December 31, 1978

ASSETS		
Current assets		
Short term investments and cash	\$506,311	\$ 9,787
Inventories, receivables and other	137,506	128,843
Total current assets	643,817	138,630
Investments and advances	41,579	41,067
Property, plant and equipment	204,576	198,773
Petroleum and natural gas rights and exploration	44,823	40,959
Other	3,289	5,639
Total assets	\$938,084	\$425,068
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities	\$ 85,269	\$ 60,808
Long term debt	143,984	168,247
Promissory note payable to the Province of British Columbia	—	151,533
Deferred income taxes	14,015	5,492
Minority interest in subsidiary	24,595	23,066
	267,863	409,146
Shareholders' equity		
Share capital—		
96.2 million shares	638,997	—
Retained earnings	31,224	15,922
Total shareholders' equity	670,221	15,922
Total liabilities and shareholders' equity	\$938,084	\$425,068

Approved by the Directors:

Director

Director

BCRIC Shareholder Information Service

WRITE:
BCRIC, 2600-1177 West Hastings Street
Vancouver, B.C. V6E 3Y3

PHONE:
In Vancouver area, 669-4443.
Outside Vancouver and within B.C., call toll free (112) 663-9122. North of Stewart and Wonowon, B.C., call collect 669-4443.

BCRIC HIGHLIGHTS

- Consolidated net earnings were \$27.9 million on total revenues of \$247.5 million for first nine months of 1979.
- Forest product earnings benefited from strong lumber and pulp prices, but were affected adversely by labour disruptions at Canadian Cellulose.
- The gas and oil division participated in the drilling of nine wells which resulted in two gas wells, one potential gas well, and one oil well.
- The company made a major commitment to increase substantially its gas and oil exploration program in Western Canada to \$30 million in 1980.
- BCRIC is actively examining new investments. Within a year it expects to have made at least one major investment.

President's Letter

TO OUR SHAREHOLDERS

We are pleased to commence what will be quarterly reporting to shareholders concerning financial results and other matters affecting the company. We welcome our founding shareholders as well as those who have become shareholders since market trading began August 7, 1979.

For the first nine months of 1979 net earnings were \$27,860,000 on total revenues of \$247,462,000. Detailed figures are included in the financial statements.

These results reflect BCRIC's share of earnings from its forest products holdings (Canadian Cellulose Company, Limited, Kootenay Forest Products Ltd., Plateau Mills Ltd.), dividend income from its investment in Westcoast Transmission Company Limited and \$16,386,000 of interest income primarily representing interest earned on the proceeds of the common share offering. As of September 30, short term investments amounted to \$500,139,000.

Revenues from the forest products sector made an important contribution to the company's earnings. However, despite strong lumber markets and increasing pulp prices, forest products earnings were below expectations, largely due to weakening plywood markets, higher than expected production costs at Canadian Cellulose's Prince Rupert pulp mill and work stoppages at that operation.

The gas and oil division completed agreements with operating and drilling firms for exploration on BCRIC's 2.3 million gross acres of land in northeastern British Columbia. In addition, the company is participating on its own and with others in land purchases and drilling programs involving a further 96,609 gross acres in British Columbia and 35,447 gross acres in Alberta. The division's activities have been recently increased and additional staff added as a result of the approval of the Board of Directors to increase significantly gas and oil exploration expenditures in 1980 to \$30 million. This program will enable the company to participate more fully in opportunities in the gas and oil sector in Western Canada.

The company, with others, has had modest success in its initial 1978/79 exploration program with the discovery of two gas wells, one potential gas well, and one oil well. Evaluation of these wells is still in progress. Five other wells drilled proved unsuccessful, although several provided promise for future exploration.

The offering of common shares from March 15 to June 15 produced \$487.5 million in gross proceeds to the company. These funds are currently invested in high-yielding short term securities pending longer term investment.

The completion of this offering, combined with the Provincial Government's gifting of five free shares to individual British Columbians, has resulted in BCRIC having approximately two million shareholders, including 130,000 registered shareholders. Consequently, the Provincial Government's shareholding has been reduced from 100 per cent to less than five per cent. BCRIC now ranks among Canada's largest companies in terms of common share capital and, therefore, enjoys a wide range of investment possibilities.

BCRIC is currently examining investment strategies in view of its corporate objectives and strong cash position. These strategies include the examination of a number of interesting prospects in the resource sectors in Western Canada. It is anticipated that, within a year, BCRIC will have made at least one major investment.

Since becoming a public company, we have received a number of comments and suggestions from individual shareholders. These have been constructive and, on behalf of the Board, I want to thank those shareholders for their ideas.



David L. Helliwell,
President and Chief Executive Officer.

Vancouver, B.C.
October 18, 1979

BCRIC

British Columbia Resources Investment Corporation

CONSOLIDATED
STATEMENT OF
EARNINGS

BCRIC

Unaudited (Thousands of dollars)

Three months ended
September 30, 1979

Nine months ended
September 30, 1979

Revenues		
Sales of forest products	\$ 75,521	\$227,305
Interest on short term investments	14,061	16,386
Other	1,301	3,771
Total revenues	90,883	247,462
Costs and expenses		
Cost of forest products sold	59,422	178,994
Selling and administration	4,640	12,087
Interest on long term debt	3,998	12,318
Total costs and expenses	68,060	203,399
Earnings before income taxes	22,823	44,063
Provision for income taxes	8,436	14,216
Earnings before minority interest	14,387	29,847
Minority interest in net earnings of a subsidiary	708	1,987
Net earnings	\$ 13,679	\$ 27,860
*Weighted average shares outstanding (millions)	96.1	46.7
Net earnings per share	\$ 0.14	\$ 0.59

CONSOLIDATED
STATEMENT OF
RETAINED EARNINGS

Unaudited (Thousands of dollars)

Retained earnings at beginning of the period	\$ 17,826	\$ 15,922
Net earnings	13,679	27,860
	31,505	43,782
Share issue expenses (net of reduction of income taxes)	281	12,558
Retained earnings at end of the period	\$ 31,224	\$ 31,224



AN INTRODUCTION TO

COMPUTECH



INTRODUCTION

Computech is a Vancouver based data processing consulting, systems design and programming firm which has been providing professional services to business and government since 1966. We are strictly a people company, rendering service for fees. We have no equipment of our own and are not connected with any data processing vendor. The principals are all active in the operation of the firm. Mr. Grant R. Gisel is President, Mr. Ian U. Reid is Vice-President and Controller and Mr. David L. Bowman is Vice-President and Senior Project Manager.

Our consulting services are specialized in three areas. These are the conduct of economic feasibility studies for data processing equipment, the selection of equipment for clients including tender preparation, proposal evaluation and contract negotiation and finally, performance evaluations of existing computer installations.

The systems design and programming services we provide are oriented toward the solution of business data processing problems. Our clients are usually medium to large scale computer users, but we have also assisted many organizations by implementing systems on their first computer.

Projects with which we have have been associated represent a broad spectrum. Applications include accounting, costing, payroll, inventory control and various financial systems. Significant projects have been undertaken on behalf of municipal and provincial governments, the Forest Industry, retail, distribution, financial, utility and service organizations. Our orientation in recent years has been toward the application of computers in a real time environment where we have used both large and small systems.

We believe that during the past thirteen years, Computech has established a creditable reputation for successfully completing data processing projects on time and within budget. The key to this performance is our professional data



processing staff. With an average of more than ten years experience in the design and implementation of computer systems, they bring a comprehensive background of knowledge to every project.

When initiating a client assignment, our preferred practice is to develop a formal proposal outlining the work to be done with the appropriate schedules, cost estimates and definitions of mutual responsibility. This quotation then serves as a guide for measuring progress. We are prepared to provide a ceiling estimate for a project which we undertake not to exceed where sufficiently detailed specifications are available. Typically this is done in phases. For example, a final estimate for systems design work would be done at the end of the analysis phase while the programming estimate would be finalized at the end of the design phase. Naturally, these estimates are subject to revision should the Terms of Reference be altered.

We also work with clients in a variety of other arrangements. Our consultants can establish a continuing relationship with a client to provide advice or act as a sounding board. Our systems analysts and programming staff can work on an hourly rate with a client in situations where a specific project cannot be defined, but a variety of work needs to be done. In all cases, charges are based only on the time involved at our stated rates.

It is our practice to bill for all time expended and expenses incurred on behalf of our clients at the conclusion of each month. Invoices are due within thirty days.

Our rates vary depending on the individual assigned to the project and are adjusted every January to reflect salary increases.



PREVIOUS PROJECTS

Computech has been engaged in a wide variety of data processing assignments. Our projects have ranged in size from those requiring only a few man weeks of involvement to extremely large tasks consuming many man years. We have worked with computer equipment supplied by most major manufacturers as well as a variety of equipment from smaller vendors. In addition to technical competence, we have proven our capability to assume total management responsibility for the design, programming and implementation of new computer procedures on behalf of our clients.

During the past 13 years, we have completed several hundred projects. The application areas range from small batch accounting systems and on line order entry and banking projects to sophisticated longshore dispatch and claim assessment applications. The following paragraphs summarize several projects which are typical of our experience.

B.C. TELEPHONE

Yellow Pages Directory

In late 1976, Computech was retained by B.C. Telephone to aid them in the development and implementation of an on line system to update and produce the Yellow Pages Directories. The Yellow Pages database, developed by the team, consists of one million records, organized by directory, classifications and finding lines. The system uses CICS under MVS to drive the input terminals. Complex processing is involved in the preparation of output data in a format suitable for computerized typesetting. The project team consisted of a project leader from Computech and seven B.C. Telephone staff members.

Customer Inquiry System

In 1977 a study was initiated at B.C. Telephone to evaluate the feasibility of providing on line inquiry into billing records to improve response to customer



queries. This study recommended a project be initiated to design and implement an on-line database system using an IBM mainframe and IMS DB/DC. As this was B.C. Tel's first experience with a major on-line IMS database system, Computech was asked to provide an analyst experienced in these areas to aid in the design and implementation of the database, and in the establishment of the internal procedures required to support such an application. The project is scheduled for a phased implementation with 120,000 customer accounts available on 18 terminals in the pilot service centre now in operation, expanding to 1.2 million accounts available on 475 terminals in all service centres by early 1980. On line update of information on the databases is scheduled for mid-year, 1980. The production version of the system is estimated to reside on six 3350 spindles and use 35% of the computer power of a /370-158 MP.

WEISER LOCK

In the Fall of 1976, Weiser Lock Co. asked Computech to develop a systems plan and to select the appropriate computer for its requirements. That project was completed in early 1977 and subsequently Computech was asked to assist with the general system design and with the detailed design of one of the subsystems. Weiser staff are now completing the detailed design and commenced programming in June 1978. This sophisticated manufacturing application encompasses production control, inventory control and sales order processing using an IBM System/370-145 with approximately twenty terminals.

CROWN ZELLERBACH CANADA LTD.

Coast and Wood Products Division

In 1976, Crown Zellerbach decided to design and install a new Order Entry and Invoicing System for its Coast Wood Products Division. A four man project team



consisting of a project leader and a programmer from Computech and two people from Crown Zellerbach completed the project in June, 1977. The system operates on Crown's DEC 10 computer using Digital's DBMS database software and consists of five terminals located in New Westminster, B.C. The system is designed so that the user controls all aspects of the running of the system with the exception of one batch job which is run overnight. The database contains all of the Coast Wood Products customer, product and on-order data. It is planned to expand the database to include receivable and sales analysis applications.

Paper Products Division

Computech was retained in late 1977 to prepare a long range system plan for the Paper Products Division. This study involved a review of the Division's requirements and resulted in the identification of numerous required applications including: order entry and invoicing, sales analysis, inventory, production reporting, costing, forecasting, plant capacity planning and production scheduling. The projects are to be done over the next 2 to 3 years.

GREATER VANCOUVER REGIONAL DISTRICT

The Greater Vancouver Regional District provides common services such as area planning and water to member municipalities. Computech was retained to select computing equipment and to develop several computer applications to be used by the District. A Digital PDP 11/70 was installed with a total of twenty terminals. The system now handles payroll, accounts payable, property information, quality control, accounting and debenture systems. The systems employ a number of unusual features, including on-line access to all payroll, personnel and accounting records at a detail level.



VANCOUVER STOCK EXCHANGE

Computech has worked with the Vancouver Stock Exchange from 1975 in the development of an on-line system to support floor trading and stock inquiries. Based on an IBM/370-125, the system uses a custom tailored version of CICS and a specially designed database handler. With a Digital Equipment PDP8 front end for line control, the system supports a message rate in excess of six per second. This rate, achieved through substantial software modifications, is more than double that normally supported by this type of equipment.

In 1978, a team of Computech staff members converted a portion of the Brokerage Accounting System, now being run at a local service bureau, to run on VSE's in-house computer. A benefit to be realized from the conversion is the creation of a base of information from which the Exchange will provide additional on-line services to the brokers.

ADDITIONAL STAFF

In addition to the projects involving direct Computech responsibility, we are often asked to undertake assignments where our staff act on an as required basis for the duration of a particular activity.

One concern of many computer installation managers is satisfying the often conflicting requirements of their many users with limited system development resources. Achieving deadlines may be difficult because of a shortage of staff or a lack of personnel with particular application or technical skills. Computech can often assist in these situations by providing experienced analyst programmers for either design or implementation projects.



Some examples of such projects include a materials billing system for B.C. Hydro using IMS on their /370-168, payroll systems for Canadian Cellulose, and industrial assessing procedures for the B.C. Assessment Authority. Numerous projects have been undertaken on this basis for large computer installations such as B.C. Telephone, Crown Zellerbach, Canadian Forest Products.

SUMMARY

These assignment examples highlight characteristics of many Computech projects which we believe to be invaluable to our clients. These include:

1. Development of imaginative and thorough solutions to information processing problems.
2. Ability to assume responsibility for a complete task where appropriate to client needs.
3. Design of technically and operationally successful systems.
4. Capability to meet critical schedules and budgets.
5. Ability to supervise and train client personnel if required.

It is these characteristics which result in superior performance for our clients. It is the assurance of high probability that a task assigned to Computech will be successfully completed as planned with a minimum consumption of client management time.



EQUIPMENT SELECTION

Computech has been engaged in a wide variety of data processing assignments. Many consulting projects have been feasibility/computer selection assignments. We have provided below a list of some of the major computer selection situations with which we have been involved. In addition, we are familiar with a broad variety of other equipment through our analysis, design and programming work.

<u>Client</u>	<u>Year</u>	<u>From</u>	<u>To</u>
Scott Paper	1968	IBM	IBM
Waterfront Employers of B.C.	1968	IBM	IBM
Tahsis Company	1969	IBM	Honeywell
Canada Cement Lafarge	1969	-	IBM
Worker's Compensation	1969	Univac	IBM
University of Winnipeg	1970	-	Univac
Westfair Foods	1970	IBM	Mohawk
W.G. McMahon Ltd.	1971	Univac	NCR
Fraser Valley Milk Producers	1971	Burroughs	Burroughs
Maritime Employers Assoc.	1972	-	IBM
Canadian Cellulose Ltd.	1973	Honeywell	IBM
West Coast Drugs	1973	-	Singer
Vancouver Stock Exchange	1973	Univac	IBM
Laurentide Financial Corp.	1974	Burroughs	Burroughs
City of Kelowna	1975	-	Univac
District of Coquitlam	1975	-	Univac
Greater Van. Regional Dist.	1976	-	Digital Equip.
Tahsis Company	1976	Honeywell	Honeywell
Vancouver Ticket Centre	1976	-	Digital Equip.
Burrard Drydock Co. Ltd.	1976	-	Digital Equip.
Milcrae Warehouses Ltd.	1976	-	Basic IV
Prov. of B.C. (Peripherals)	1977	IBM	IBM
B.C. Television	1977	Univac	Digital Equip.
Canadian Data	1978	-	Digital Equip.
Corp. of Burnaby	1978	IBM	Univac
W.G. McMahon Ltd.	1978	NCR	Digital Equip.
Operating Engineers	1978	Service Bureau	Data General
Vancouver School Board	1979	Honeywell	IBM
B.C. Lions Society	1979	Service Bureau	Data General



REFERENCES

In evaluating the capability of a professional firm, past and existing clients are perhaps the most important source of information about the skills and competence of the organization. We have provided below the names of clients for whom we have worked during the past few years and have indicated the nature of our involvement. You may wish to contact some of these individuals to obtain their views as to the services we provide.

<u>Client</u>	<u>Computech Involvement</u>
Bank of British Columbia Mr. W.A. Franklin Asst. General Manager 668-4544	Consulting regarding installation long term plans and supplier nego- tiations. Designed and implemented a share accounting system.
B.C. Hydro & Power Authority Mr. Al Donald Acting Manager, Management Systems 663-3544	Programming services.
B.C. Telephone Company Mr. H.E. Seadon Director, Mgmt. Information Services 432-3611	A variety of consulting, systems design and programming projects.
Burrard Yarrows Corporation Mr. D.J. Alsop V.P., Finance & Administration 988-2111	Feasibility study and computer selec- tion. Systems design and implementa- tion of payroll and costing systems.
Canadian Cellulose Ltd. Mr. M. Stellmacher Manager, Data Systems 685-2452	Consulting, systems design and programming projects.



Client

Computech Involvement

Canadian Data
Mr. R.D. McLean
President
687-8841

Consulting and equipment selection.

Canadian Forest Products Ltd.
Mr. G. Herbert
Data Processing Manager
664-3701

Feasibility studies and various programming projects.

Corp. of the Twp. of Richmond
Mr. A. Inglis, C.A.
Deputy Treasurer-Collector
278-5511

Assistance in equipment selection.

Crown Zellerbach Canada Ltd.
Mr. Tom B. Boulanger
Director, Computer Services
668-4278

Various consulting, systems design and programming projects.

District of Burnaby
Mr. H.B. Karras
Deputy Treasurer
294-7332

Feasibility studies and equipment selection.

District of Coquitlam
Mr. V. Dong
Municipal Treasurer
526-3611

Feasibility study, equipment selection and responsibility for design and programming.

Greater Vancouver Reg. Dist.
Mr. J. McLean
Assistant Treasurer
731-1155

Feasibility study and equipment selection. Responsibility for systems development and programming.



Client

Computech Involvement

Insurance Corp. of B.C.
Mr. R.E. Henderson
Senior Vice President
665-7766

Organizational studies of data
processing department. Systems
design and programming projects.

Intl. Union of Op. Engineers
Mr. M. Parr
Business Manager
291-8831

Feasibility study, system design.

Kelly Douglas Ltd.
Mr. David G. Gibbs
Controller
435-1444

Several equipment studies related to
on-line data collection and machine
selection. Programming.

Maritime Employers Association
Mr. Arnold Masters
President
(514) 878-3721

Total responsibility for development
of on line dispatch systems.

W.G. McMahon Ltd.
Mr. D.H. Wheeler
Vice President
(204) 633-1020

Feasibility studies, equipment selec-
tion, systems design and programming.

Rent Review Commission
Mr. J.G. Patterson
Rentalsman
689-3111

Feasibility studies and systems
design and programming.

Registered Nurses Association
Ms. F.A. Kennedy
Administration Manager
736-7331

Feasibility studies and systems and
programming projects.



Client

Simon Fraser University
Mr. G. Stuart
Vice-President, Administration
291-4101

Tahsis Co. Ltd.
Mr. J. Neal
Manager Data Processing
681-2266

Vancouver Stock Exchange
Mr. J. Forbes
Vice President, Administration
685-0331

Weiser Lock Co.
Mr. B. Edwards
Vice President, Administration
526-3641

West Coast Drugs Ltd.
Mr. C.W. Cruickshank
General Manager
530-9713

Wosk's Limited
Mr. L. Wosk
Vice President
Corporation Management
321-6861

Computech Involvement

Organizational review of administrative systems staff.

Feasibility study and equipment review.

Consulting studies, on line systems Planning and related design and programming.

Feasibility study.

Feasibility studies, equipment selection and responsibility for on-line system implementation.

Systems design and programming.



PERSONNEL

Our technical staff is comprised of forty two experienced data processing professionals. The enclosed resumes of some members of the firm provide the best indication of the kind of skills which we can apply to your projects. A few general points regarding our staff are:

1. The average technical experience of our staff exceeds ten years.
2. Our staff has been selected on the basis of productivity and reliability.
3. All analysts are required to program periodically to encourage realism at the design phase.
4. Our staff have consistently produced innovative, practical solutions to problems, often well in advance of common practice.

We believe the key to the success of any major project is the experience and capability of the staff assigned to perform the work. Our resumes provide a guide to the expertise we would assign to a project.



GRANT R. GISEL

Grant Gisel received a Bachelor of Commerce degree from the University of Manitoba in 1964. His initial computing experience was gained at IBM Canada Ltd., first as a programmer and systems engineer and then as a marketing representative. He worked with the Company in several Western Canadian cities and was involved with the installation of numerous computer systems.

Mr. Gisel joined Computech in 1968 as a consultant engaged in feasibility studies and computer evaluation. Subsequently, he was retained as Acting Director of Computer Systems for the Workers' Compensation Board where he directed the implementation of a third generation computer and supervised development of new systems involved in the restructuring of administrative practices at the Board. During 1971/72, Mr. Gisel managed the Computech team who implemented an on-line longshore dispatch system for the Maritime Employers Association in Montreal.

Since 1973, Mr. Gisel has been engaged in a variety of feasibility studies, equipment selections and supervision of computer systems implementation projects. Major clients have included B.C. Telephone, Burrard Dry Dock Ltd., Greater Vancouver Regional District, Crown Zellerbach, Insurance Corporation of B.C., The British Columbia Systems Corporation, B.C. Resources Investment Corporation and the District of Burnaby. He has also acted as a consultant to the Vancouver Stock Exchange in regard to their on-line data processing system.

Mr. Gisel was appointed Vice-President of the Company in 1969 and President in 1973. Active in the computing community, he is a member and past Director of the Data Processing Management Association and member and past President of the Canadian Information Processing Society.



IAN U. REID

Ian Reid graduated from the University of Victoria in Mathematics and Philosophy during 1964. He held a commission in the Canadian Navy. His early computing experience was obtained at IBM Canada Ltd. as a programmer and systems analyst in the IBM Datacentre. During this time he gained extensive experience in various commercial applications, supervised programming and operating staff and developed estimating tools.

Mr. Reid joined Computech in 1968 as a consultant. He developed computer evaluation procedures for the Company and conducted a wide variety of projects. Mr. Reid has recently been directly involved in feasibility studies and equipment selection situations for clients such as the Tahsis Company Ltd., the Bank of British Columbia, British Columbia Television, B.C. Telephone Company, Canadian Forest Products and the International Union of Operating Engineers. He has dealt extensively with most of the general purpose and minicomputer manufacturers in his various selection situations.

He is responsible for managing a variety of systems development projects involving Computech analysts and programmers. Mr. Reid has also carried out a number of non computer oriented consulting assignments.

Mr. Reid was appointed Vice-President of the Company in 1969. His responsibilities within Computech include internal financial management and administration. He is a member of the Canadian Information Processing Society and a Director of the EDP Auditors Association.



DAVID L. BOWMAN

Mr. Bowman joined the United States Air Force in 1961 and was trained in systems and data processing. In 1965 he moved to Canada and was employed by Simpson Sears, where he was responsible for programming credit accounting and inventory reporting systems.

Mr. Bowman joined Computech in 1967 as a programmer analyst. Since then he has had extensive systems analysis and programming experience using a wide variety of hardware and software. He has managed several successful large computer projects. Mr. Bowman was instrumental in the development of new forecasting techniques for inventory management and he has been responsible for the implementation of four different inventory management systems, the largest of which was for Crown Zellerbach Limited.

In 1971, he designed an integrated account management system for a major subsidiary of John Labatt Ltd. In 1972, he designed and implemented membership and claims payment procedures for the dental plans offered by CU&C Health Services. During 1973 he served as acting Data Processing Manager for B.C. Sugar. In 1975 he designed and implemented an on-line sales order processing and inventory control system for West Coast Drugs Limited. In 1976 he completed an overall materials management study for B.C. Telephone inventories. More recently, he has been involved in various consulting assignments related to feasibility studies and equipment selection.

Mr. Bowman was promoted to Vice-President and Director of Computech in 1975. His responsibilities include overall project scheduling and manpower planning.



ROBERT L. HAWKINS

Bob Hawkins graduated from the University of British Columbia with a Bachelor's degree in Mathematics and Physics in 1962. Initial professional experience was gained with IBM Canada Ltd. as a Systems Engineer from 1962 to 1966, and then as a marketing representative in 1967. During this period he was responsible for systems design for numerous commercial applications in Provincial Government and the distribution, retail and manufacturing industries.

Mr. Hawkins joined the City of Vancouver as Systems and Data Processing Manager in 1968. His responsibilities included manual systems and office equipment as well as conventional data processing functions. He was also involved in the solution of many organizational and staffing problems. In 1973 he carried out a comprehensive study for the selection and subsequent implementation of a large scale computer required for on line data base applications. In 1974/5 he directed the development of an on-line property tax system using advanced data base techniques. During this same period he managed a complex conversion project to a large scale Honeywell computer system.

In 1975 Mr. Hawkins joined Computech as a Senior Consultant. He has been involved in a variety of feasibility and equipment selection projects. As well, he participated in the systems requirements definition and implementation for a new computer installation at the District of Coquitlam. Clients for whom Mr. Hawkins has carried out assignments include Weiser Lock Co., Vancouver Ticket Centre, Federal Industries, the Corporation of Richmond and the British Columbia Systems Corporation. He has particular expertise in Municipal and Provincial Government applications and in sophisticated analyses of large scale and mini computer equipment.



ROBERT H. BIRCH

Mr. Birch graduated from the University of Saskatchewan with a B.Sc. in 1962. After teaching for one year, he joined IBM's Vancouver Education Centre in 1963. He was transferred to Victoria in 1965 as a systems engineer. His major assignment there involved the initial systems development work for the start up of the B.C. Medical Plan. Mr. Birch was transferred to Winnipeg in 1969 to the IBM Field Systems Centre.

In 1970, after returning to Vancouver, Mr. Birch was responsible for the coordination of the IBM Western Canadian Data Centre efforts in the Call 360 and RJE. He was reassigned to the Education Centre in 1971. His prime areas of responsibility there were in the Data Base/Data Communications program products with particular emphasis on CICS/VS, DOS DL/1 and IBM/VS as well as the associated teleprocessing equipment. During this time he maintained and used all software systems related to the above areas. On CICS and DL/1 he was used as a Western Canadian specialist for all of IBM's branches and was responsible for developing many of the Canadian and DL/1 courses.

In October 1975 Mr. Birch joined Computech as a senior consultant. He has participated in and led various system definition and feasibility studies for clients such as the B.C. Telephone Company, Crown Zellerbach, Weiser Lock, Kelly Douglas and the Vancouver Stock Exchange. He is currently in charge of a multi-year systems development project for Crown Zellerbach's Paper Products Division. For the past year he has also been the Acting Computer Services Manager for the Municipality of Burnaby. Mr. Birch was appointed to the Computech Management Committee in the Fall of 1976 and is responsible for internal staff education.



ERNIE W. LOHRENZ

Mr. Lohrenz was employed by Manitoba Hydro's Data Processing Department in 1962. He was responsible for the programming of accounting reports, payroll, and an accounts payable system. He joined MacMillan Bloedel in 1967. His first project was a payroll conversion. Subsequently, he was involved in the programming and implementation of an on-line order invoicing system.

Mr. Lohrenz joined Computech in 1970. Initially he participated in the programming of an integrated inventory management system for Crown Zellerbach. Next, he designed and implemented a generalized inventory package for small distributors and costing and payroll systems for Canadian Cellulose Ltd. He also assisted on a project involving the development of a Property Management System. Other assignments include a School Board Payroll and a Membership System for the Registered Nurses Association. He worked with the Vancouver Stock Exchange on their net settlement system during 1974 and the following year designed and implemented a warehouse billing system for Kelly Douglas Limited. Mr. Lohrenz has recently completed the design, programming and implementation of an integrated terminal oriented accounting inventory control system at Wosk's and a payroll design for A&W Food Services. He has been the project leader of a large scale on-line management information system for CU&C Health Services.

Mr. Lohrenz has worked with IBM System/360 and /370 equipment from the Model 20 to Model 158 level as well as Univac 1108, NCR Century 100, Burroughs 1700 and TRW 2200/5500 computers. He is a highly skilled ANS COBOL programmer as well as being experienced with various Assemblers and BASIC. He was appointed to the Computech Management Committee in 1978 and is responsible for the technical operations of the Victoria Office.



JOHN C. BOVARD

Mr. Bovard joined the Investors Group in Winnipeg in 1963 as an analyst/programmer. His responsibilities included development of a mutual funds accounting system and an automatic payment plan application. He joined MacMillan Bloedel Ltd. in 1967 and worked on their payroll system, a ship cargo reporting application, the general ledger and an on-line building materials order invoicing system.

Mr. Bovard joined Computech in 1968. His initial assignments involved the development of a wide range of forest industry applications including cost and budget reporting, payroll, labour statistics, financial statements and inventory management. He was also responsible for the on-line phase of the B.C. Maritime Employers Longshore Dispatch System. In 1972, he designed and implemented a sophisticated Property Management System for the Baxter Group. He has carried out several projects for the B.C. Telephone Company and has designed and implemented a share system for the Bank of British Columbia. Mr. Bovard was lead Technical Designer for an on-line credit union system at Central Data Systems. He was Project Leader for an on line system to maintain the Yellow Page Directories at B.C. Telephone. He is currently involved in client feasibility projects and acts in a senior technical guidance capacity on Computech's larger assignments.

Mr. Bovard has worked with IBM/360 and /370 equipment from the Model 30 to Model 158 level as well as the Univac 1108, Honeywell 200 and Burroughs 4700. Experienced with both DOS and OS software, he has conducted extensive programming projects in ANS COBOL, PL/1, RPG and Assembler and has used CICS extensively. A skilled Systems Designer, Mr. Bovard has been totally responsible for numerous projects from the initial definition phase through implementation. Mr. Bovard is a member of the Computech Management Committee and is responsible for the development of internal project management systems.



LADISLAV BRANDA

Mr. Branda graduated in 1968 in Business Administration specializing in Data Processing Systems. Prior to this time, he was employed by a National Computing Centre in Prague, Czechoslovakia, where he wrote commercial programs in Assembler and Algol. Mr. Branda supervised 15 programmers and had responsibility for systems development.

Mr. Branda joined Computech in 1969 as a Programmer Analyst. His initial assignments included a Retail Sales Analysis System for the Bay and a Telephone Toll Billing System. In 1970, Mr. Branda assumed responsibility for the design of an on-line longshore dispatch system at the B.C. Maritime Employers Association. Subsequently, he assisted in the design of a similar dispatching method for Eastern Canadian Ports. Mr. Branda redesigned a management reporting procedure for the B.C. Telephone Company involving manual systems and control problems as well as computer system modifications. He also completed an assignment as Project Leader for Central Data Systems in the development of their On Line Credit Union System. Other projects in which Mr. Branda has participated include a variety of feasibility and system studies as well as system audits.

Mr. Branda's most recent major assignment has been as Project Leader of a five person project revamping the billing system used by the Provincial Government for the Forest Industry's wood cutting. The project, which involved COBOL on large scale IBM equipment, is being implemented within the time and cost constraints specified.

Mr. Branda has particular expertise in application definition. He is very skilled in establishing true user requirements and in producing system solutions, both manual and computerized. He is an experienced large scale project leader. Many of the systems on which he has worked have involved the use of both on-line transaction oriented terminals and database software. He was appointed to the Computech Management Committee in 1979.



DAVID C. WILLS

Dr. Wills graduated from Oxford with a Ph.D. in Physics during 1970. He joined Arthur Anderson in London and worked as consultant and analyst in their management consulting division. His initial programming projects included a corporate model for a steel wholesaler and a sales forecasting system for a shoe manufacturer. He designed and implemented a program package for the development of simulation models on a time sharing system. Subsequently, Dr. Wills was engaged in a study and design of a system for a department of the British Government. This project involved considerable review and revision of manual systems as well as the use of various statistical packages. He completed the analysis, design and implementation of an accounting and management information system for a finance company in London. His responsibilities in this project included the systems analysis and design as well as programmer supervision.

Dr. Wills joined Computech in September, 1974 and worked on an Assessment System for the City of Vancouver. This was followed by a personnel system feasibility study for Scott Paper Ltd. He then assisted the B.C. Assessment Authority in their development of a conversion to a province-wide system for machinery assessment. He supervised, designed and implemented payroll, financial reporting and related systems at the Greater Vancouver Regional District on the DEC 11/70. He has designed a job cost system for the Burrard Drydock DEC 11/70 and is supervising its development. Dr. Wills is currently working on the development of a municipal accounting system for the District of Burnaby.

Dr. Wills has worked with PL/1, FORTRAN, COBOL and Assembler used on the Univac 1108, IBM System/360 and System/3 and Honeywell 6000 computers. He has extensive working experience with the DEC 11/70 under RSTS/E. He was appointed to the Computech Management Committee in 1979.



C.A. BRIDGES

Mr. Bridges graduated from Queens University, Kingston, with a B.Sc. in Electrical Engineering in 1972. He joined Prudential Assurance in October of that year as a programmer, where he worked with COBOL and Assembler on an IBM System/360 Model 40.

In February 1975 he joined Data Logic as a programmer/analyst where, on a contract basis, he was involved in a variety of projects including Dividend Accounting for a major trust company. Assignments were carried out on a System/360 Model 40 and System/370 Model 168 under DOS and OS/MVT respectively. Languages included COBOL, MARK IV, Assembler and ALGOL.

He came to Vancouver and joined a Digital O.E.M. firm in February 1977 as a System Support Representative. During this time he designed and implemented a Real Estate Accounting System, a Scheduled Maintenance Application, a Work Order System, a generalized accounting package and various payroll functions. He worked with DEC 11/34 and 11/70 systems under RSTS-E, RT11 and CTS300. Languages used include DIBOL, Macro and BASIC+2.

Mr. Bridges joined Computech as a programmer/analyst in April 1979 and is currently implementing an administrative system for the Operating Engineers in Business Basic on a Data General Nova.

Mr. Bridges has a broad background in commercial design and implementation in COBOL oriented IBM installations and various sized DEC 11 systems.



A.W. CARTER

Mr. Carter graduated from the University of Alberta in 1970 with a B.Sc. (Computing Science Major) and joined the Alberta Government as an analyst. His initial project was in the medical claims area where, over a two year period, he rose from a junior programmer to Project Leader. This was followed by two years in the redesign and rewrite of the Public Service Pension System. The Pension System included on line inquiry and calculation package using Government supplied software. Subsequently, he participated in the design of a new motor vehicle on line system. All the above projects used COBOL on large scale IBM System/360 and /370 equipment.

In 1974, Mr. Carter joined Thorne Riddell as an analyst working with their System/3 equipment on various commercial applications including parts inventory and magazine distribution systems. Moving to Vancouver in 1975, he worked for Boeing computer services company participating in various on line mini oriented projects including a Nursery order entry and inventory system running on a DEC 11/34 and the Surrey Welfare System on TRW Data points.

Mr. Carter joined Computech in 1977. His initial assignments involved several systems using BASIC+2 and RMS 11 on DEC 11/70 computers. He has also designed and supervised programming for a Union Membership and Pension System for a Datageneral Nova minicomputer.

Mr. Carter has used COBOL with IBM System/3, System/370 and a Hewlett Packard 3000. He has worked with Databus on the Datapoint 2200 and 5500 as well as Basic on various Digital Equipment DEC 11 and Datageneral Nova systems. The majority of his professional work has included project leader and design responsibilities as well as programming.



RALPH DANYLUK

Mr. Danyluk graduated from the University of Manitoba in 1972 with a B.Sc. (Honour Physics) and from Simon Fraser University in 1975 with a M.Sc.(Physics).

During his undergraduate years he was involved with various computer projects, including an economics model for the Manitoba government's guaranteed income program, and a fast data acquisition and analysis system for nuclear physics and medical research.

In 1975, he joined Digital Equipment Corporation as a software specialist providing presales assistance and systems support. He was heavily involved in customer training, system installation and implementation consulting of commercial data processing accounts, including: Greater Vancouver Regional District, Prince George Pulp and Paper, B.C. Building Corporation, and Prince George School District. During this time, he gained experience in project management, system conversion (IBM to DEC), and DEC hardware and software.

Prior to joining Computech he was involved with the implementation of a job costing system for Star Shipping on a PDP 11/70 for a local systems company.

Mr. Danyluk joined Computech in May, 1979 and is currently working on the programming and implementation of a lumber inventory system for BALCO.

Mr. Danyluk is experienced with FORTRAN, RPG, BASIC+, BASIC+2, DIBOL, RMS11, various assemblers, and both remote batch and on-line communications software. His equipment background includes IBM/360, IBM System/3 and 32, PDP 9/15, 8, 11, and HP1000.



ROBERT G. ELDRIDGE

Mr. Eldridge graduated from U.B.C. in 1965 with an Honours B.Sc. He joined IBM Canada Ltd. where he worked on a /360 Assembler programming assignment, a 1401 to /360 conversion and various other technical support assignments in Victoria and Vancouver.

In September 1967, Mr. Eldridge joined Weldwood of Canada as a Programmer/Analyst. His work included the complete development of a major Order Entry computer system including the feasibility study, design, programming and installation. His other projects at Weldwood included technical support of computer operations, participation in a CICS project, DOS system generation and planning for the conversion to virtual systems. Mr. Eldridge later became Technical Services Manager responsible for hardware/software selection and usage, maintenance activities involving a wide range of business systems and supervision of the technical programming and data preparation staffs. In May 1976, Mr. Eldridge was hired by Control Data as a senior application analyst providing sales support for their peripheral products in Western Canada. He joined Computech in May, 1977 and worked on the development of a Mill Stores system for Canadian Cellulose Ltd.

Mr. Eldridge next participated on a project team which designed and implemented an on line information system for CU&C Health Services. His responsibilities include technical design, CICS implementation and programming and system tuning. He also monitors and controls supplier software deficiencies and their correction.

Mr. Eldridge has practical experience with COBOL, Assembler, FORTRAN, RPG and PL/1 as well as DL/1 TOTAL, LIBRARIAN, FORESIGHT and CICS. His experience with IBM hardware spans System/3 through to large scale systems. In addition, he has management experience in most phases of data processing.



SUZANNE R. FARRINGTON

Ms. Farrington graduated from the University of Florida with a Bachelor's degree in Business Administration in 1968. She joined IBM as a programmer trainee immediately thereafter. Her first three years involved business system programming in COBOL, PL/1 and Assembler on manufacturing inventory, production control and accounting systems. This was followed by various system software projects including DL/1 and IMS testing and OS and VS2 Supervisor debugging. In 1973 she returned to the manufacturing environment to develop process control application programs.

Moving to Vancouver, Ms. Farrington joined Weldwood of Canada as an analyst in 1974. While there, she maintained an integrated data base system utilizing TOTAL and COBOL. She also designed and implemented automated lubrication scheduling, vibration analysis and sales analysis systems. In 1976 she joined a software firm as Chief Programmer for a team designing, programming and implementing an on-line receivables system, in COBOL, for an Interdata 7/32. Her additional responsibilities included the design of spool, security and screen formatting packages. In this project she acquired considerable experience with structured programming approaches.

Ms. Farrington joined Computech in July 1977 as a computer analyst. Her initial projects involved use of a DEC 11/70 using Basic+2 under RSTS. She has been responsible for technical design and the supervision of client programmers in the development of an on-line budgeting system.

Ms. Farrington has extensive experience in PL/1 and COBOL under DOS, OS and various derivatives as well as Interdata and DEC experience. She has a broad background in using TOTAL and ENVIRON. Applications expertise includes most standard commercial systems with particular emphasis on manufacturing systems.



IAN FISHER

Ian Fisher began his computing career during 1969 in England with Unigate Foods (the largest dairy products manufacturer in Britain) as a junior programmer. He was involved in the programming of budgeting, inventory control and accounting systems.

In September 1972, Mr. Fisher joined F.M.C., where he was responsible for the implementation of accounting and payroll systems. He was later responsible for the technical support of the computer operations and operating system. In 1974 he was promoted to Chief Programmer and subsequently gained supervisory experience on various projects including product costing, producer payments, genetics and breeding performance, least cost mix and inventory evaluation. In early 1977, he completed the design, programming and implementation of an on line order entry system. His last major project before immigrating to Canada in August 1977 was a sales and dispatch system using Entrex 480 minicomputers linked via a communications network to the mainframe.

Mr. Fisher joined Computech in September 1977 and programmed a purchase order processing system for a Singer System 10 minicomputer. He has carried out a COBOL programming project in a DOS/VS environment at the Vancouver Stock Exchange. He has worked with Crown Zellerbach on their DEC 10 in a programming and technical design capacity.

Mr. Fisher has had programming experience on various ICL, IBM and DEC computers using ANSI COBOL and Assembler. He has also worked with various key to disk systems and programmable terminals.



PAUL FRIEDMAN

Mr. Friedman graduated from the University of California, Irvine in 1971 with a Bachelor of Science degree in Computer Science and from the University of British Columbia in 1973 with a Master of Science degree in Computer Science. While attending university he had a number of part time jobs in which he gained computer operating and programming experience.

In February 1974, Mr. Friedman joined Computer Sciences Canada Ltd. as a Technical Specialist. He was responsible for the system design and programming for a range of commercial applications, including general ledger, accounts receivable, accounts payable and financial modelling.

Mr. Friedman joined Computech in December 1976, and assisted in the implementation of a union dues check off and reporting system for the Registered Nurses Association. Subsequently, he implemented programs in the Toll Reporting Systems for B.C. Telephone. He has also designed and programmed some modifications to the computer systems used by the Rent Review Commission. He has programmed aspects of an on line log system on a Dec 11 in Basic+2.

Mr. Friedman has had experience working on the IBM/360 and /370 computers using DOS, OS and MTS operating systems. He has also worked on a Univac 1108 and DEC Systems 10 and 11. He has had considerable experience in the use of COBOL, FORTRAN, PL/1, BASIC, Assembler, Algol, and the System 2000 Data Base System.



LINDA HODDER

Ms. Hodder began her data processing career as a Programmer Analyst with the Dorset County Council in 1968. In her five years with the council she participated in all facets of commercial applications programming including programmer and chief programmer roles.

In 1973 she immigrated to Canada and joined the Insurance Corporation of British Columbia as a programmer analyst, later rising to senior system analyst. During this time she headed teams responsible for aspects of the cyclical renewals systems, the insurance cheque refund applications (including on-line inquiry) and the data entry key edit program conversion. She was also second in charge of the Production Systems Group which was responsible for establishing system standards and procedures, ensuring data integrity and supervising the operation of a control database using IMS backup and recovery procedures.

In 1977 she joined Honeywell as a Marketing Support Representative where she became involved in project management of conversion and application projects, large scale customer support including database and guest lectures on systems analysis at local universities. In February 1979 she joined Computech. Her initial project involved definition and design of systems related to the initial B.C. Resources share offering. She has since been responsible for the design, programming and implementation of a sales subsystem using COBOL on the HP3000.

Ms. Hodder has extensive experience with IBM PL/1 and Honeywell Cobol 74. Her database background includes IMS, IMAGE and IDS/II. She is experienced in the use of on-line systems and has training in finance, project management and structured analysis and design.



BEVERLEY HUGHES

Ms. Hughes graduated from the University of Waterloo in 1970 with a Bachelor of Science Degree specializing in Mathematics. Upon graduation, she joined the Canadian Federal Government as a programmer, where she was employed for a period of four years. During this time, she worked primarily for the Public Service Commission and the Department of Manpower and Immigration. Assignments in which she was engaged include a variety of financial and accounting systems as well as software development for a generalized report writer and plotting routines.

In 1974, Ms. Hughes left the Federal Government to join an Ottawa based software consulting firm as an analyst programmer. There she undertook a variety of client design and programming assignments. Her largest project involved the implementation of both application programs and systems software for a minicomputer.

She moved to Vancouver in the Fall of 1976, joining Computech at that time. She worked on the Periodic Reporting phase of a large on-line banking system and completed the conversion of systems to remote job processing for Prince George Pulp and Paper. She has provided technical design and programming assistance to Crown Zellerbach on their DEC 10 system.

Ms. Hughes has had experience with a variety of computing equipment including IBM 360/370, DOS, OS/MVT, MVS, Burroughs B35/4700, DEC 10 and Computer Automation. She has written programs in COBOL, PL/1, MARK IV and BASIC as well as working with a minicomputer Assembler language.



JANINE E. HUNTLEY

Mrs. Huntley graduated from UBC with a Computer Science major. She joined the Computer Services Division of the City of Vancouver in 1975. Her initial responsibilities were as programming secretary and senior data control clerk, including JCL parameterization.

In 1976 she was appointed a programmer in the Systems Development branch. Her application programming experience at the City includes hourly payroll, salary payroll, Bank Reconciliation, accounting, metrification, inventory and billing. Responsibilities included both program development and maintenance. In some projects she coordinated programming duties and promoted the use of Structured Programming techniques. She also acquired significant experience in the practicalities of reliable system implementation through one assignment as programmer responsible for all emergency maintenance and related user interfacing.

Technically, she wrote the standard program types including on line edit/updates and their batch backup. Her work at the City was largely in COBOL, including the use of the IDS data base manager. She is also familiar with PL/1, FORTRAN, BASIC and IBM Assembler. She has used Honeywell 6040 (level 66) and IBM System/370 systems.

Mrs. Huntley joined Computech in 1979 and is currently involved in an IBM COBOL project modifying a series of programs to allow for batch transmission and a corporate restructuring.



LESLIE ANN INGRAM

Ms. Ingram graduated from the University of Alberta in 1967 with a Bachelor of Science degree in Mathematics and Computer Science. For one year after graduation she continued her studies in the Department of Computer Science. From 1968 until September of 1973, she was employed by Imperial Oil Limited in their Systems and Computer Services Department. While with Imperial Oil she was responsible for programming and systems work, primarily of a scientific and technical nature. In her last project at Imperial Oil, she performed the detail design of an on line interactive system for a refinery laboratory.

In September 1973, Ms. Ingram joined the Data Base Administration Group of the Insurance Corporation of B.C. This group was responsible for the design of the large IMS data bases used by ICBC. Ms. Ingram was promoted to Manager of the Data Base Administration Group in 1975.

She joined Computech in April 1976 and worked on the development of several financial oriented systems on the DEC 11/70 at the Greater Vancouver Regional District. She programmed a materials management system for B.C. Hydro. She is currently assisting B.C. Telephone in a major IMS data base design project for their Customer Services Area.

Ms. Ingram has had extensive experience with large scale IBM computers, and their operating systems. She has had considerable experience in the use of FORTRAN IV, MARK IV, PL/1 and COBOL programming languages and with the IMS/DC database manager. In addition, she has had experience with IBM's /360 Assembler and GIS languages. Recently, she has also worked with Digital equipment using RSTS and BASIC+2.



C. LARRY JAMESON

Mr. Jameson graduated from the University of Windsor in 1972 with a B.A.Sc. in Electrical Engineering, specializing in Computer Science. He joined Moore Business Forms in Toronto as a programmer. In two years at this installation, he worked on inventory and warehouse applications as well as satisfying maintenance requirements. Application development was in PL/1 and ANS COBOL for an IBM System 370 Model 135 running under DOS/VS.

Mr. Jameson joined the Canadian Trotting Association in 1975. The Association used various program packages for licensing, statistical and control applications. These applications were carried out on large scale Univac and IBM equipment prior to the installation of a DEC 11/50 using RSTS-E and BASIC+. Mr. Jameson was responsible for the design and implementation of a new driver standing system, package maintenance and systems programming. In 1976, he joined Boeing Computer Services in Vancouver. His principal responsibility was the implementation of an accounting system on a DEC 11/34. Other activities included the evaluation of various computerized mapping packages and implementation of an accounting system using an MAI BASIC IV.

Mr. Jameson joined Computech in 1977 and worked on payroll and accounting systems using DEC 11/70's in Basic+. He has provided technical design and programming assistance to Crown Zellerbach on their DEC 10 system.

Mr. Jameson has a thorough knowledge of the DEC 11 system using BASIC under RSTS, the DEC 10 using COBOL, and of the IBM System/370 using COBOL and PL/1. He has been responsible for the design and programming of a variety of commercial systems and has conducted evaluations of numerous software packages.



JEANETTE KEAYS

Ms. Keays graduated from UBC in 1968 with Mathematics and Physics majors. She joined Gulf Oil in Calgary in February 1969 where she worked on various sub-systems, primarily in the area of oil accounting. Most of this was done in COBOL on the Honeywell 200 and IBM 360/50 under OS. She also carried out FORTRAN work on a CDC 6400 and some Assembler.

In September 1972, Ms. Keays joined Simon Fraser University as a systems analyst. She was responsible for the planning, controlling, design and implementation of all systems related to the University's Library. Applications included ordering, financial, and inventory systems. She also managed a staff of analysts, programmers and data entry personnel. Various administrative duties included budget management and staff evaluation. While at Simon Fraser, Ms. Keays maintained her technical expertise by programming aspects of most new systems. The languages used were PL/1 and MARK IV on the IBM System/370. In addition, she designed a system for the University's DEC 11.

Ms. Keays joined Computech in September 1977 as a systems analyst. Her initial project involved the development and implementation of an Accounts Payable System for the Greater Vancouver Regional District. Utilizing the GVRD's DEC 11/70, this system was developed with DEC's new RMS 11 file handler and was programmed in Basic+2. She has also provided manual systems design assistance to the Alcohol and Drug Commission.

Ms. Keays is experienced with various equipment including a CDC 6400, IBM 370, Honeywell 200 and DEC 11. Although her primary experience is with PL/1, COBOL and BASIC, she has FORTRAN, MARK IV and Assembler language experience.



BELLE McCULLY

Ms. McCully began her data processing career at Lenkurt Electric in 1966 where she participated in the programming of costing and manufacturing systems. In 1969, working for a datacentre, she designed and implemented a general insurance package. Employed on a contract basis by the University of Winnipeg in 1970, Ms. McCully assisted in the development of a registration system.

On her return to Vancouver, Ms. McCully joined Computech as a programmer in September, 1970. Her initial assignment was as a member of the programming team responsible for the Labour Guarantee and on line Labour Dispatching System for the B.C. Maritime Employers Association. Later assignments have included programming for the City of Vancouver's Sign Bylaw System, and for a financial budgeting system at Canadian Cellulose Ltd. In May 1972, Ms. McCully was temporarily transferred to Montreal. There she participated in the development of an on line dispatching system for longshore labour in Eastern Canada. During 1973/74, Ms. McCully participated in the design and programming of a Share Accounting System, a payroll system, an on line entry and invoicing system, and a material management application. During 1975-77 Ms. McCully was the project leader of the reporting system phase in the development of a large scale on line financial system. In 1978 she headed a development team engaged in the design and programming of a brokerage accounting system for the Vancouver Stock Exchange. She has since participated in a large scale on-line banking system using IBM 3601 terminals and a 3031. During this project she used COBOL and CICS under VSI. Her responsibilities included project supervision for batch and on line recovery subsystems. Since October 1979, she has been performing analysis work on the B.C. Government payroll project.

Ms. McCully has had extensive programming experience with IBM, Univac, Burroughs and NCR computers, using PL/1, ANS COBOL and various Assemblers. She has also worked with the TOTAL database system.



JAMES G. McCULLY

Mr. McCully graduated from U.B.C. with a Bachelor's Degree in Mathematics in 1966 and joined Lenkurt Electric. He was involved with their Bill of Material, manufacturing inventory control and manufacturing accounting systems. After leaving Lenkurt, he participated in a number of commercial design and programming projects for a datacentre.

In 1969, Mr. McCully joined Computech as a programmer/analyst. His first projects included application programming for a Burroughs 3500, and technical design responsibility for the B.C. Maritime Employers Association on-line dispatch system. In July 1971, he was project leader for a complex retail budget and profitability reporting system for the Bay. After completing a Credit Union accounting system, Mr. McCully was transferred to Montreal in 1972. He held technical development responsibility for the Maritime Employers Association automated dispatch system. Returning to Vancouver, he was engaged at the B.C. Telephone Co. in the design of procedures to improve telephone Trunk Facility management. During 1974/75, he designed and implemented a new settlement system for the Vancouver Stock Exchange. Subsequently, Mr. McCully became technical project leader for a new computer installation at the District of Coquitlam. He has also provided database design and implementation assistance to the District of Burnaby.

Mr. McCully has had extensive experience at the technical computer system design level. He has also been involved with several on-line, data base oriented systems and has substantial experience with IBM's data communication product, CICS. His programming experience includes various Assemblers, ANS COBOL and PL/1. He has worked with all levels of IBM computers, using DOS and OS, UNIVAC 90 Series and Burroughs computers.



CHRIS MARSHALL

Chris Marshall began his computing career in Australia during 1970. He was employed by an NCR service bureau where he programmed in NEAT for various service bureau customers.

He then moved to New Zealand where he was involved in the design, programming and implementation of two major on line data base systems. The first was an inventory and order entry system for a conglomerate with such varied subsidiaries as wholesale grocery warehouses, breweries, wholesale liquor outlets, soft drink bottlers, travel agencies and a hotel chain. The second was the initial commercially oriented on line system for the New Zealand Health Department.

He then moved to Canada where he joined Johnston Terminals Ltd. in 1973 as an analyst/programmer. While with Johnston's, he designed and programmed several transportation systems covering the handling of goods by domestic air freight, pool car and truck, international containerized freight through Fraser Surrey docks as well as normal accounting systems. In his later years with Johnston's as a project leader, he developed these systems starting with the software analysis of hardware for these systems through the complete design, programming and implementation.

He then moved to Prince George in 1978 where he designed the Inventory, Receiving, Issuing, Purchasing and Accounts Payable portion of a Materials Management System for Prince George Pulp.

He then returned to Vancouver where he designed and programmed several small systems for small businesses using micro computers, before joining Computech in July, 1979.

Mr. Marshall has had programming experience on NCR, Burroughs, ICL, Datapoint, Data General and DEC equipment using various languages such as COBOL, BASIC, PLAN, Assembler, Databus, Fortran and NEAT.



BARRY J. MORTON

Mr. Morton began his computing career in England in 1967 as a junior programmer with the Liverpool Regional Hospital Board and with the Liverpool University as an analyst/senior programmer.

In 1969, Mr. Morton joined ICL as a systems engineer. Initially, acting in a programming role, he moved into a general systems and technical sales support role responsible for a number of ICL customers. During his 7 years with ICL he was involved in numerous projects at various levels including payroll, freight documentation (shipping), order entry, IBM conversions and benchmarks. His final position with ICL was Area Technical Support Executive, responsible for six support engineers and an installed customer computer base of \$8 million. Mr. Morton's first project after joining Computech in 1977 was to investigate the incorporation of the manual Intercept System into a new computerized Directory Assistance System for B.C. Telephone. He was then made post implementation project leader of an on-line banking system. He has since provided operational and institutional interfacing for the highly successful B.C. Resources share issue operation. He has recently completed two large feasibility studies relating to major on-line commercial systems.

Mr. Morton's programming experience has been gained on ICL, IBM and Burroughs equipment using ANSI COBOL and Assemblers. He was the ICL technical specialist responsible for the Cullinane IDMS data base package. He has managed the installation for a vendor of a 400 terminal/multiprocessor/high transaction order entry system for a pharmaceutical distributor. From this, he has gained valuable experience in the performance and serviceability aspects of designing and implementing large communication applications. Since arriving in Canada, he has acquired considerable on-line experience on IBM and Burroughs systems with particular attention being paid to feasibility, design and project control responsibilities.



KIRSTEN MUDIE

Ms. Mudie graduated from U.B.C. in 1972 with a B.Sc., Computer Science Major. She joined a Vancouver software company where she carried out various programming projects on the U.B.C., Multiple Access and Computer Sciences systems. During this time her experience was primarily with COBOL with lesser amounts of FORTRAN, Assembler, BASIC, PL/1 and ASAP.

In 1974 she joined the City of Vancouver where she spent two years as a programmer and two years as an analyst. Programming projects included various maintenance and development assignments including the analysis and rewrite of display programs to reduce memory usage 70%. She also acted as the leader of the emergency maintenance group. As an analyst, systems included various payroll and revenue analysis projects. All projects at the City were carried out in COBOL under GCOS on the Honeywell 6040. This also involved extensive use of the IDS data basemanager as well as text editors etc. Most City applications were display oriented.

She joined Computech in January 1979. Her initial project involved programming in COBOL on a DEC 10 using a database manager.

Ms. Mudie has a background with numerous languages but her prime commercial experience has been with various COBOL implementations on IBM, Honeywell and DEC computers. Her application development work has usually involved the use of a database manager.



KEITH R.J. MUNRO

Keith Munro graduated from the data processing program at B.C.I.T. in 1973. His initial experience was gained at the District of Surrey as a COBOL programmer.

Mr. Munro joined the Insurance Corporation of British Columbia as a Programmer Analyst in 1973 where he worked with IMS as a member of the Data Base Administration group. In 1976, Mr. Munro was the Data Base Analyst responsible for the Cheque Refund System. This application was the first on-line inquiry system designed and developed at I.C.B.C. It used IMS DB/DC and VSAM Data Bases. Other activities included performance monitoring and tuning, testing of new IMS Data Base software, back up and recovery of large IMS Data Bases, and involvement in the Claims Data Capture pilot project, the first on-line-update system at ICBC using IMS/DC. In 1978, Munro was the Data Base analyst responsible for the project to install the IMS/VS Checkpoint/Restart facility into long running PL/1 computer programs, and to document standards for future use.

In 1979 Mr. Munro joined B.C. Hydro in the On-Line Systems section. He gained experience with CICS/VS using IMS to access Data Bases, and initiated a project to improve IMS performance by converting the Personnel Data Base to HDAM and implementing a VSAM Secondary Index on surname and initials.

Mr. Munro joined Computech in 1979 and became involved in the IMS DB/DC Customer Records Information System project at British Columbia Telephone Company.

Mr. Munro has programmed in PL/1, COBOL, ASSEMBLER, GIS, and RPG. He has worked on numerous IBM systems from a 360/30 to a 3033 under several operating systems. He has also had experience programming the Key Edit data entry system. Mr. Munro is active in the D.P. community as a member of the IMS users group in B.C. and as a guest lecturer at B.C.I.T. on Data Base Concepts.



LEE S. MURDOCK

Lee Murdock received a Bachelor degree in Computer Science and Business Administration from the University of Utah in 1958. His initial computing experience was gained at Sperry Univac Corporation where, for a period of four years, he was engaged in operations, technical programming and computer operations supervision.

Mr. Murdock joined the Dinalection Corporation as Programming Supervisor in 1963. In this position, he was responsible for the design and development of a real time system for the U.S. Navy's Pacific Naval Range. He rejoined Sperry Univac as Computer Operations Supervisor of their Salt Lake City facility and also acted as a consultant to the University of Utah in the planning related to installation of an 1108 computer.

After immigrating to to Canada, Mr. Murdock joined the B.C. Telephone Company. During a nine year career with B.C. Tel., he held three positions. His first two years were as Technical Services Supervisor, where he directed a twelve man team responsible for hardware and software acquisitions and software maintenance. He then spent three years as Systems Development Manager. His staff of sixty-three undertook all business application development. For the last four years, Lee was Computer Services Manager. In this position, he controlled a staff of 148 engaged in technical support, computer operations and data entry. Hardware included an MP 370/158, 2 DEC System 10's, 38 PDP 11's and other minis.

Mr. Murdock returned to Salt Lake, Utah for personal reasons at the end of 1978. Then he was Computer Services Manager for a Sperry Univac division, directing two 1100 series computers which support a 500 terminal network. He joined Computech as a senior consultant in July, 1979. His initial assignment was providing assistance to operations management in a large scale multi vendor installation.



AL PEREZ

Mr. Perez graduated from the University of Illinois in 1968 with a Bachelor of Architecture degree, majoring in Structural Engineering. After graduation, he joined IBM in Mexico and gained experience in the IBM Data Centre. In 1970 Mr. Perez joined RCA as a Systems Support Engineer. While with RCA, he was responsible for technical support to RCA's customers and sales prospects.

In 1971 Mr. Perez joined El Puerto de Liverpool S.A., a large retail department store chain in Mexico. While with this company he held positions as a programmer analyst and subsequently as Systems Analysis and Programming Manager. He gained a wide experience in the design, development and successful implementation of payroll, accounts receivable, accounts payable, general ledger, on line credit authorization and on-line big ticket control systems.

Mr. Perez joined Computech in November 1976 and assisted in the development of municipal property system using database and communications techniques on a Univac 90/30. On this project, he had system design and programming responsibility for one of the project's subsystems. Mr. Perez completed a system design project for Weiser Lock Company. He has recently been involved in the definition, design and programming of a large scale time dependent project using COBOL on an IBM system.

Mr. Perez has had extensive experience with Burroughs B3500 and B3700, IBM 360/370 and Univac 90 computers. He has a thorough knowledge of COBOL, file organization techniques and TOTAL.



MANUEL L. QUIAZON

Mr. Quiazon graduated from LaSalle University, Manila, Philippines, in 1967 with a Bachelor of Science in Mechanical Engineering. He joined IBM Philippines after graduation and worked as a customer engineer for three years, responsible for the maintenance of IBM equipment. During the following four years with IBM, he was a programmer/analyst, responsible for design, programming, testing, implementation and maintenance of a wide variety of computer applications. These projects included Inventory Control, Stock Accounting, Ore Reserves Calculation, and Plant Maintenance.

After immigrating to Canada in January 1975, he joined Noranda Mines Ltd. in Toronto as a programmer analyst. His first task was to assist in programming a Fixed Asset package. He subsequently was given full responsibility to develop and implement an IMS Plant Maintenance package to be used by the Noranda group of companies. His duties included gathering user requirements, designing the business system, assisting in the computer system design, directing the activities of programmers, and training users. In October 1977, Mr. Quiazon joined Canadian Forest Products in Vancouver. He was responsible for the development of applications to be implemented on minicomputers. During his employment at Canfor, he completed the business and technical design of a Log Accounting System.

Mr. Quiazon joined Computech in August 1978 and was initially involved in the design and implementation of the Piece Scaling System for the B.C. Forest Service. He next undertook a programming project with the Vancouver Stock Exchange and has had subsequent experience at B.C. Telephone Company.

Mr. Quiazon has had extensive experience on a variety of IBM 360/370 equipment in both OS and DOS environments. He has written programs using COBOL, PL/1 and FORTRAN. He has worked with IMS/DL1. In addition, Mr. Quiazon has a sound knowledge of the Hewlett Packard 1000 with the IMAGE/QUERY data base software.



DONALD J. RALPH

Mr. Ralph graduated from Confederation College in 1976 with a 4.0 grade point average and a diploma in Business Data Processing Systems. This course included training in COBOL, PL/1, Assembler, Fortran and RPG.

Subsequent to graduation, Mr. Ralph joined the Great West Life Assurance Company in Winnipeg as a programmer. The majority of his work was in PL/1 using DL/1 and IMS. The IBM 370/158 used TSO in an MVT environment. His principal assignment area included user contact, detail specifications, coding, testing and implementation of aspects of the Corporate Modelling Systems. Installation standards required decision tables, structured programming and walkthroughs.

In 1977, he joined Inco Metals Company in Thompson as a junior programmer; promotion to senior programmer occurred in February, 1978. Projects involved all aspects from user definition to implementation, depending on the particular system. Applications included Accounts Payable and a Management Information System. He also assisted programmers and analysts in learning on-line systems. The technical environment was a DOS/VS IBM 370/138 using CICS/VS, VM/CMS, TOTAL, ENVIRON, TEBOL and COBOL. He was also involved in the use of the IBM Graphics package under CICS.

Mr. Ralph joined Computech in October, 1979. His initial project involves PL/1 in a CMS environment.

His background includes use of most main line development languages and tools provided for the IBM 370 including the COBOL and PL/1 languages, IMS and TOTAL database managers, CICS/VS and ENVIRON telecommunication monitors, TSO and CMS interactive terminal managers and OS/MVT and DOS/VS operating systems.



HARRY S. RAWCLIFFE

Mr. Rawcliffe graduated with an Honours Bachelor of Engineering degree from Liverpool which was followed by a Masters degree from Saskatchewan (1965) for theoretical and research work in computing services.

Following graduation he joined the Canadian Defence Research Board for three years where he was primarily involved in systems analysis and simulation, graphics and information retrieval. He was then employed by Control Data as a Cybernet systems analyst until, in 1970 he joined Western Totalisator where he was in charge of software development for their computerized betting system. He returned to England as a consultant with Systems Programming Ltd., where projects included computerized engineering drawings, component schedules and Computer Output Microfilm equipment evaluation. In 1973, Mr. Rawcliffe returned to Canada as system development manager for Unidrug Systems. This involved development and maintenance of various specialized on line applications on the PDP 11.

After joining Computech in November 1975, he participated in an on-line payroll in Basic+2 for a PDP 11/70 under RSTS/E. He has designed and implemented an engineering material system at B.C. Telephone. He is currently engaged in designing an on line logging system for B.C. Television on a DEC 11/60.

His experience includes FORTRAN, COBOL, BASIC+ and numerous Assemblers. Recent equipment he has worked with includes IBM Systems/360 and /370, CDC 6600, Varian 620, Data General Nova and various DEC 11 models. He has particular expertise in transaction oriented systems and the configuring, installation and use of multi-vendor special purpose systems.



P. MAUREEN SHARPE

Ms. Sharpe graduated from the University of Victoria in 1974 with a B.Sc. with a Computing Science option. Her initial professional work began in 1974 as a programmer for the Vancouver Resources Board and its predecessor, the Family and Children's Service.

Her assignments initially included specialized programming in PL/1, FORTRAN and ASAP as well as the use of various statistical packages. Thereafter, she designed and programmed in COBOL the cheque subsystem of the Social Assistance system and carried out various implementation and maintenance duties. In 1976 she became the programming supervisor with three programmer/analysts reporting to her. Work at this time included the MSA general ledger system and Social Assistance, Children in Care and Personnel applications.

In February 1978 she joined the British Columbia Systems Corporation where she became a Senior Programmer Analyst. Her duties included systems architecture for an on line IMS/DB/DC system, programmer leadership and coordination as well as user interfacing.

She joined Computech in July, 1979. Her initial assignment was on the Autoplan Data Capture project at ICBC, an on-line IMS/DB/DC PL/I system with complex screen handling.

Ms. Sharpe is experienced in both PL/1 and COBOL. She has an extensive background on IMS related projects on large scale IBM systems.



PEARL A. SINGH

Ms. Singh graduated with a Diploma from the Institute of Data Processing, London, England in 1965. Her initial industry experience was gained with CAP Consultants in London as a programmer. There, she worked on credit card billings, bill of materials and payables systems using IBM/360 DOS and OS computers with COBOL and Assembler.

Immigrating to Canada in 1968, Ms. Singh worked for the Drug Trading Company Ltd. on the development of an on-line order entry system and Eaton's of Canada in the design of a payroll system. She joined Mattel Canada in 1970 as a programmer and was promoted to systems analyst in 1972. Her work primarily involved design and implementation of a Bill of Material System. Ms. Singh was employed by Imperial Oil Ltd. in 1974. During four years at Imperial, she worked on a variety of systems in a programmer/analyst role. These included payroll, fixed asset accounting and credit card billing. The computing environment involved IBM/370-168 under MVS with TSO and IMS.

Ms. Singh joined Computech in November 1977 and worked on the development of a brokerage accounting system. This was followed by an assignment to assist in the implementation of the Piece Scaling System at B.C. Systems Corporation.

Ms. Singh has had extensive experience with a variety of IBM 360/370 computers in both DOS and MVS environments. Her major programming languages are COBOL, Assembler and MARK IV and, to a lesser degree, PL/1 and RPG. She has worked with IMS/DL1 and VSBASIC under TSO. In addition to programming, she has been responsible for the conduct of business and technical design projects and the supervision of programming staff.



SELMA R. TENNENHOUSE

Ms. Tennenhouse graduated from Queen's University in 1973 with a Bachelor of Science (Engineering) degree, specializing in Mathematics and Computer Science. During her time at Queens, Ms. Tennenhouse was employed in summer periods by the University's Computing Centre, the Federal Communications Research Centre and the Israel Meteorological Service where she undertook a variety of programming assignments. Upon graduation, Ms. Tennenhouse joined Bell Canada as a computer systems associate. She worked on a variety of programming projects, primarily in the traffic data recording and reporting areas. In January 1975, she moved to Vancouver with a computer services firm as a programmer analyst. During a two year period, she undertook assignments at the Unemployment Insurance Commission, the B.C. Assessment Authority and the B.C. Telephone Company. These projects involved a combination of design and programming responsibilities. Ms. Tennenhouse was involved in a major project for B.C. Hospitals where she was engaged in systems software support.

She joined Computech in October 1976 as an applications programmer. Ms. Tennenhouse has assisted in the development of an on-line order entry and invoicing system for the Coast Wood Products Division of Crown Zellerbach. This system uses Crown Zellerbach's DEC 10 computer and DEC's Data Base Management System. After carrying out a variety of programming prospects in a large scale IBM environment, she was assigned to the implementation of a complex on-line costing system on a DEC 11.

Ms. Tennenhouse has had experience with a wide variety of computing equipment including DEC 10, DEC 11, IBM System/370, CDC 6600, Burroughs 6700, XDS Sigma 7 and Interdata 7/32. She has written commercial programs in PL/1, COBOL, BASIC and Assembler and has experience with Fortran and Algol. She has also worked with Assembler languages on Xerox and Interdata computers. Finally, she has worked with the IMS and Digital DBMS Database manager.



H. WILLIAM THOMSON

Mr. Thomson graduated from the University of Victoria in 1974 with a Bachelor of Science degree, specializing in Computing Science. He joined the Academic Services staff at Simon Fraser University at that time. This position involved assisting faculty members with the development of mathematical and statistical modelling programs.

Mr. Thomson transferred to the Administrative Services staff of the Computing Centre in October 1975 as a programmer/analyst. Projects with which he was involved included an on-line work order system and an accounts payable system. He was promoted to a systems analyst position in October 1976. His primary responsibilities involved coordination of administrative systems using a DEC 11/70 computer interfaced to the University's large IBM facilities. Specific projects included development of the cross computer linkage and an on-line security system. He was project leader for a study to determine the feasibility of University wide implementation of word processing technology. He also assumed responsibility for implementation of a data collection system for the Library.

Mr. Thomson joined Computech in October 1978. His initial project involved the technical design and programming of an on-line job cost system on a DEC 11 system.

Mr. Thomson has had extensive experience with large scale IBM computers in an O/S environment as well as DEC 11/70 computers using RSTS/E. He has worked with ENVIRON as a teleprocessing monitor and the ADABAS data base system. Programming languages with which he is experienced include PL/1, APL, BASIC, BASIC +2 and FORTRAN.



NORM WATT

Mr. Watt graduated from the University of British Columbia with a Bachelor of Science degree in 1967 and a Masters of Business Administration degree in 1969. He joined IBM Canada Ltd. after graduation and worked for that company in Vancouver and Toronto. During his employment with IBM, Mr. Watt was involved in a variety of programming projects for customers and internal company systems.

Mr. Watt joined Scott Paper Limited as a programmer analyst in March 1972. During the following six years, he was involved in the development of a wide variety of computer applications common to a manufacturing/distribution organization. These included Order Entry, General Ledger, Accounts Payable and Sales Analysis.

Mr. Watt advanced through technical and supervisory positions to Manager of Systems and Programming. In this capacity, he was responsible for hiring and supervising programmers, interfacing with user departments to define system requirements and assisting in overall data processing planning.

Mr. Watt was hired by Computech in the spring of 1978. His first assignment involved the design and programming of a subsystem of the Piece Scaling system for B.C. Systems Corporation.

Mr. Watt has had extensive experience with a variety of IBM and Hewlett Packard computers. These range from System/370-125 under DOS-VS to a 3033 under MVS and Hewlett Packard 3000 II with the IMAGE/QUERY database software.



JEANNIE WEXLER

Ms. J. Wexler graduated from McGill University with a Bachelor of Commerce degree in 1968. Her computer career began at York University, where she helped develop payroll and other financial systems.

In 1970, she joined Computel, and was responsible for conducting benchmarks and programming client applications. There she was involved in a number of assignments, including the development of a vendor system using an IMS data base and a bank payroll system. In 1974, she moved to Vancouver to open and manage a branch office for the company. In addition to administration, she programmed for several of the company's clients. Ms. Wexler joined a software house in 1976 as a project manager.

She joined Computech in April, 1977 and has been involved in a variety of projects. These have ranged from feasibility studies for a hotel accounting system to development of accounting applications at the Greater Vancouver Regional District. She has carried out several consulting studies including: equipment selections for Canadian Telephones and Supplies and Okanagan College; developing a long range data processing plan for Belkin Packaging Ltd.; and formulating a policy for computer usage within the administrative areas of British Columbia Colleges and Institutes.

Ms. Wexler has considerable definition, design and implementation experience. She is experienced in COBOL and MARK IV with various IBM systems. She has also had experience on the Interdata 7/32, the Univac 1100 series and the DEC 11/70 with RSTS.

Jeannie Wexler is active in the Data Processing community. She is a past Vice-President of the Vancouver section of the Canadian Information Processing Society and was Program Chairman of Northwest '78. She is currently involved in the CIPS national conference for 1980.



GRANT G. WILSON

Mr. Wilson graduated with a Bachelor of Arts in Economics and Mathematics from U.B.C. He began work in data processing in 1964 as a programmer with National Datacentre, rising to Manager in Programming. His application experience included the broad range of accounting and commercial systems encountered in datacentres.

Mr. Wilson undertook a contract programming project for Nissan Auto during 1971 in Vancouver and Los Angeles, where he worked with inventory systems while using COBOL on an IBM System/370 Model 145. In 1972, he joined Singer Business Machines as a systems analyst providing systems support to on-line System 10 client installations.

Mr. Wilson joined Computech in 1974. His initial assignments included a wholesale inventory system at West Coast Drugs and a furniture inventory system for the Bay. During 1975 and 1976, he worked on projects for B.C. Telephone on their DEC 10. Those involved first, an on-line inquiry and inter supply point shipping system and second, the remote terminal printing subsystem for B.C. Telephone's service order system. Subsequently, he worked with Crown Zellerbach on their Log Production and Forecasting Systems. His next assignment was as project leader of a multi-branch nationwide on-line order entry/inventory system for a floor covering distributor.

Mr. Wilson has worked with numerous Assembler languages, RPG and COBOL. He has had experience with IBM System/370, Univac 9000, and the DEC 10 systems.



JUNE YOUNG

Ms. Young graduated from the University of British Columbia in 1960 with a Bachelor of Applied Science degree in Chemical Engineering. She joined the Department of Energy and Mines in Ottawa as a Scientific Officer in applied chemistry. In 1963 she was hired by the Operations Research and Economics Consulting Division of a large consulting firm in Toronto. There she worked on such assignments as an oil refinery simulation (IBM 7070 and Honeywell 1400), and the simulation of a two level warehouse inventory control system (Burroughs 5500).

Upon returning to Vancouver in 1967, Ms. Young joined Computech and worked on a variety of commercial applications using both GE and IBM equipment. In 1970 she took a position with UBC to design and program registration systems, notably scheduling of classrooms and the production of individual student timetables. In the summer of 1976, she returned to Computech after working for four years in Australia for the Mt. Newman Mining Company. While there, Ms. Young prepared a preliminary design of a system for monitoring maintenance on railroad cars, made major modifications to a fixed asset account system and designed and programmed a personnel data base incorporating a new payroll system (IBM 370/135 DOS/VS). Since rejoining Computech she has implemented a municipal taxation system at the District of Coquitlam and has programmed an on-line union membership system on a Datageneral minicomputer.

Ms. Young has had extensive programming experience in COBOL, Business BASIC, FORTRAN IV, PL/1, Algol, Automath and GE Assembly language. She has worked with all levels of IBM computers using DOS, MVS and MTS, the Univac 90 series, Burroughs, Honeywell and Datageneral systems.



ROBERT L. HAWKINS

COMPUTECH CONSULTING CANADA LTD.
1009 - 1177 West Hastings St., Vancouver, B.C. V6E 2K3 688-1371