

# the I.P. Sharp newsletter

JULY-AUGUST 1977  
Volume 5 Number 4

## ECONOMIC DATA IN SHARP APL

Several economic data bases are on line in the Sharp system. Among others, the International Monetary Fund (IFS) data, OECD (Organization for Economic Cooperation & Development), United States economic data (from the National Bureau for Economic Research - NBER), and Canadian data from Statistics Canada, as well as Chartered Banks data have all been available for some time.

Two new data banks have been added this month: the United Kingdom Central Statistics Office economic data, and World Currency Exchange Rates.

Access to these and other data bases is obtained via our telecommunications network which provides toll-free telephone service in all major cities in the U.S., Canada and Europe. Our computer software is geared to rapid retrieval, manipulation and display of time series data of this type. A review of some of the economic data on line in *SHARP APL* follows.

## INTERNATIONAL: WORLD CURRENCY EXCHANGE RATES

Current exchange rates for major world currencies on each of three markets - London, New York and Toronto - are now available on the Sharp system. We plan to include the Tokyo currency market in the near future.

- LONDON      Buying prices in British Pence for each of 15 currencies, for <sup>each</sup> ~~the last~~ business day ~~of each week~~, starting September 1977. The latest day's prices are posted the morning of the next business day.  
Source: The Financial Times of London.
- NEW YORK    Buying prices in U.S. cents for each of 24 currencies for each business day since January 1971. The latest week's prices are posted the morning of the first business day following the end of the week.  
Source: The Federal Reserve System - N.Y. Bank.
- TORONTO     Buying prices in Canadian cents for each of 56 currencies, for each business day starting ~~July~~ 1977. The latest day's prices are posted the morning of the next business day.  
Source: Bank of Nova Scotia.

(continued)

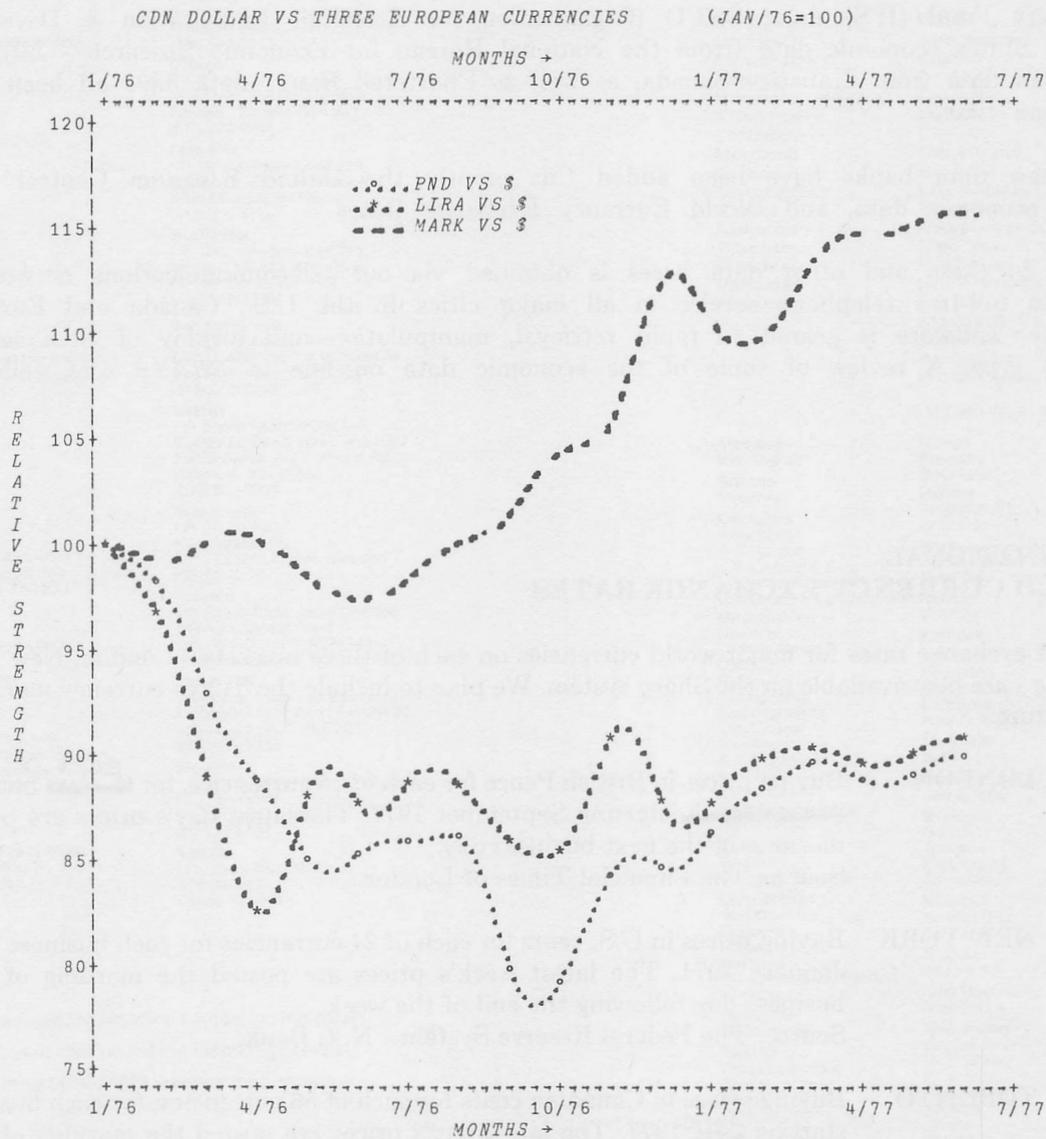
The example below illustrates (via the *SHARP APL* Time Series Analysis Package, *MAGIC*), the relative strengths of the British Pound, Italian Lira and German Mark versus the Canadian dollar on the New York exchange - from January 1976 to June 1977:

```

V SAMPLE
[1] CLEAR
[2] MONTHLY, DATED 1 76 TO 6 77
[3] PUT CURRENCY 'N CAN, N U.K , N ITA, N GER'
[4] TITLE 'CDN DOLLAR VS THREE EUROPEAN CURRENCIES (JAN/76=100)'
[5] LABEL 'PND VS $, LIRA VS $, MARK VS $'
[6] ΔSUPERPLOT 'AJ832' ◇ YLABEL 'RELATIVE STRENGTH'
[7] ΔCURVE '1 2 3, C' ◇ ΔDENSITY '1 2 3, 5' ◇ ΔPLOTSIZE '10 10'
[8] PLOT 1 76 INDEX (ITEM 2 3 4) DIVIDED BY ITEM 1

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V



A table of the available currencies can be printed at the terminal. Please contact your local Sharp representative for more information.

THE UNITED KINGDOM  
**THE CENTRAL STATISTICS OFFICE - MACRO ECONOMIC DATA BANK**

The CSO Data Bank (UKCSO) has recently become available on the *SHARP APL* system. It is a data bank containing some 2000 series covering a wide area of finance and economics relating to the United Kingdom. It is published by the U.K. Central Statistics Office who collect and consolidate data obtained from various parts of the civil service. The main areas covered by the data bank are:

1. Industrial production
2. National income and expenditure
3. Balance of payments
4. Prices
5. Wages and earnings
6. Population and manpower.

Access to the data bank is within the framework of *MAGIC* - (*SHARP APL* Time Series Analysis Package). For more details of access to and contents of the data bank, contact your local *SHARP APL* office. In the U.K. ring Bernard Perkins (*BJP*) at the Birmingham office - (021)359-6964.

CANADA

**CANSIM\* USERS: READ 81 CSNEWS!**

Information concerning CANSIM data has been installed on line in a convenient news service; new series in the *SHARP APL* CANSIM Minibase Supplement, and news of updates and corrections are printed at the terminal by typing:

```
)LOAD 81 CSNEWS
NEWS
```

A lot of unnecessary work can be avoided by checking first - particularly where CANSIM data is incorrect. Please check the workspace regularly!

\*CANSIM is the registered Trade Mark for Statistics Canada's machine readable data base. When publishing any data retrieved from CANSIM, the following must be used as the source: "These data originate from CANSIM which is the registered Trade Mark for Statistics Canada's machine readable data base."

**CHARTERED BANKS OF CANADA ANNUAL DATA**

Ten years of annual data for the Chartered Banks of Canada is now available on the Sharp system. This data base contains Annual Data as compiled by the twelve banks in their annual reports. Each year new data will be added as it becomes available from the Chartered Banks:

Description	No. Facts
- Statement of Revenue, Expenses & Undivided Profits	21
- Statement of Accumulated Appropriations for Losses	15
- Statement of Rest Account	8
- Statement of Assets	16
- Statement of Liabilities	18
- Miscellaneous Capital Stock Information & Per Share Data	9
Total Items:	87

Access functions are similar to those used to access the Chartered Banks monthly and quarterly data. Access is available through workspace 54 *ABANKS*. All dollar amounts in this data base are in thousands of Canadian dollars, except the Per Share data, which is in dollars.

UNITED STATES  
THE NATIONAL BUREAU OF ECONOMIC RESEARCH'S MACHINE READABLE DATA  
BANK

Charlotte Boschan  
NBER, 261 Madison Ave., New York, N.Y.  
(Reprinted in part, by permission, from  
**The NBER Reporter**, June 1977.)

The Bureau maintains and develops a machine-readable data bank of U.S. time series for its own use, and makes it available to outsiders at cost - a modern form of publication.

At present about 3,000 monthly, quarterly and annual time series are in the NBER database. Of these, half refer to the National Income and Product Accounts, from 1946 to date, wherever possible. All series are adjusted for seasonal variation wherever adjustment is needed. Usually these adjustments are made and published by the source agency, but whenever they are inadequate or not available we make the adjustment and provide it in the bank. In some cases both the adjusted and the unadjusted series are carried. Usually the figures pertain to the economy as a whole, but several activities are given by industry, on at least a two-digit SIC level. These include Industrial Production, Capacity Utilization, Orders, Shipments, Inventories, Plant and Equipment Expenditures, Prices, Employment, Hours and Earnings, Productivity and Profits. The bank also contains some forecasts and projections. Apart from those available from government agencies - such as the Census Bureau's projection of population - we maintain the median quarterly forecasts of eleven economic variables resulting from the ASA/NBER Forecast Survey.\*

A new directory of the time series in the bank was released in November 1976 and is available at cost (\$5.00). (Sharp documentation relevant to the NBER data is: "NBER Time Series Data Bank", "MAGIC for Time Series Analysis", and "Plotting with MAGIC").

NBER is compensated for the use of its data bank by the individual user at a rate of \$80.00 a month for daily updates plus a one-time start-up fee of \$100.00, or \$65.00 a month for periodic updates plus the starting fee. This does not include costs for computer use.

\*The ASA/NBER Forecast survey is a quarterly survey conducted jointly by the American Statistical Association & NBER. ... Respondents include about fifty leading business, academic and government economists professionally engaged in forecasting. Data from the surveys are analyzed by NBER and published in ASA's "American Statistician" as well as in NBER's "Explorations in Economic Research".



PENPAK  
Michael Crick  
I.P. Sharp, Seattle, Washington.

PENPAK is a new *SHARP APL* package designed to help banks and actuarial consultants administer small pension plans. PENPAK was produced by a joint effort between I.P. Sharp Associates in Seattle (Michael Crick) and the actuarial firm of Howard Johnson & Co. (Brendan O'Farrell - Chief Actuary). The package is aimed at the 1000 - 2000 banks and actuarial firms whose task it is to administer small, defined-contribution pension plans accurately at minimum cost.

The administration of small (5 - 5000 people) pension plans has been much complicated in recent years by new government laws and regulations (notably E.R.I.S.A.). This is aggravated by the tendency of company presidents and lawyers who write and amend pension plans, to be somewhat creative. Most plans are created with small regard for the beleaguered administrators whose responsibility it is to put into effect their ingenious and elegant prose. Somehow every plan seems to end up with a unique twist that plays havoc with your typical "check-the-appropriate-boxes" type general-purpose system.

Up until PENPAK, the administrator had three alternatives:

- (a) administer the plan by hand - a time-consuming and error-prone process,
- (b) standardize all his plans - almost impossible in practice,
- or (c) program the plans in FORTRAN or RPG (COBOL maybe?). The last approach is not feasible for twenty people since the programming cost per person becomes absurd.

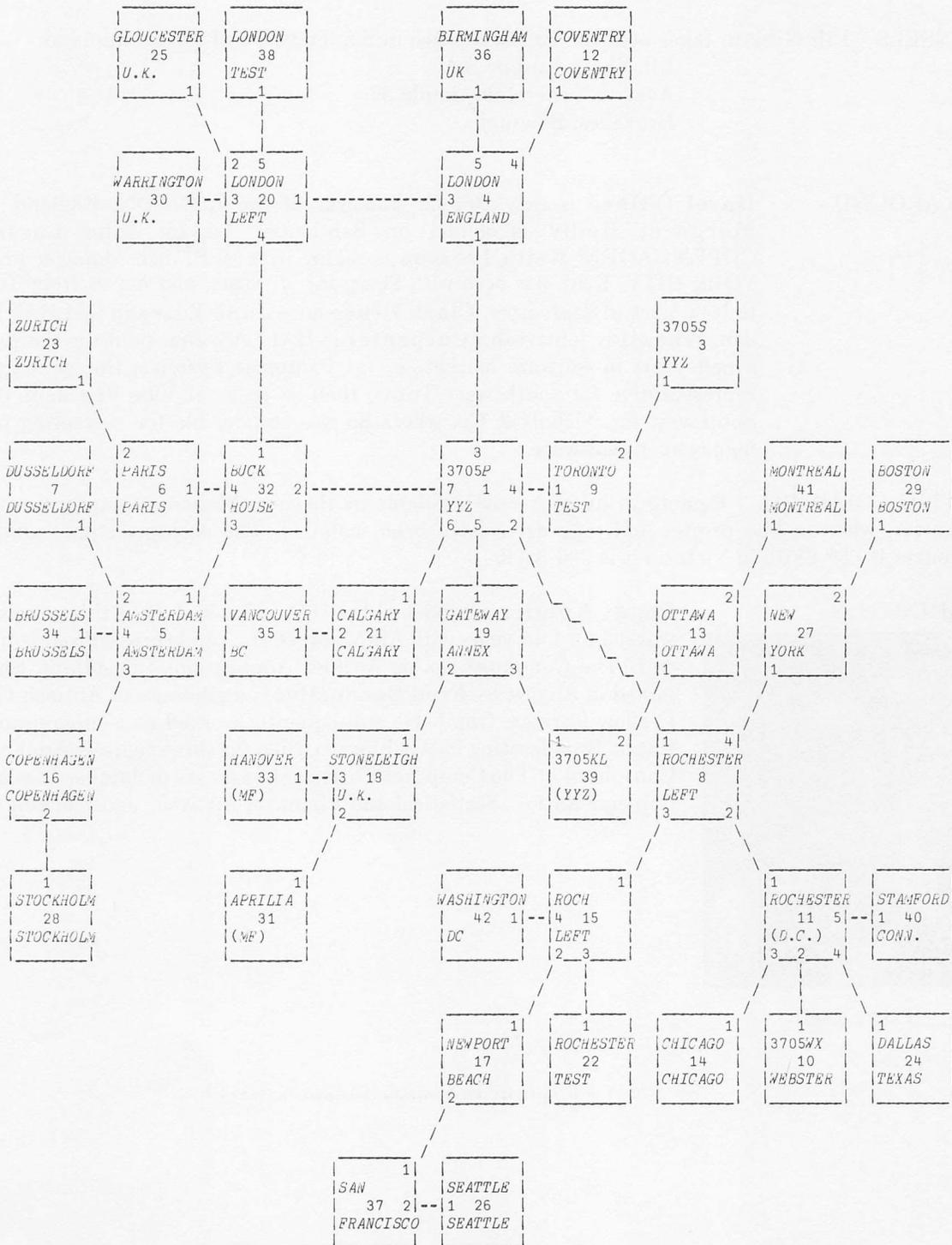
Enter PENPAK. Each plan administered requires the user, or his local Sharp representative, to write one simple APL program for each plan. These programs usually have no loops or branches and typically run 5-15 lines. One can usually get a head start by modifying a similar existing program, allowing the whole tailor-made system to be coded and debugged in less than an hour. Once completed, the plan can be run by a clerical person, using the collection of twenty or so PENPAK programs operating on a conversational basis. These programs have been designed to uniform standards to speed up and simplify their use. Each program is described on one page of a convenient flip-file that sits right beside the terminal.

The package has been extensively tested by two customers in Seattle. At Howard Johnson & Co., a bright young actuarial student, Roger Harrington, handles most of the plans. Roger rapidly assimilated enough APL to write his plans himself. At Peoples National Bank of Washington, Sue Myhre runs all the programs. Sue makes no pretense of knowing APL. To set each plan up, Sue's boss, Craig Johnston, the bank's Trust Officer, fills in the PENPAK worksheet and sends it over to the local Sharp office to be coded. Sue takes it from there.

PENPAK is not difficult to use and fills a real and, until now, a largely unfulfilled need. For more information please contact the Seattle office, or Brendan O'Farrell at Howard Johnson & Company (206)329-9200.

# The Sharp APL Network

The minicomputer nodes of the I.P. Sharp Associates Packet Switching network are mapped:



## SHARP PEOPLE AND PLACES

VIENNA - I.P. Sharp Ges MbH can be found a convenient two-minute walk from the Opera House in Vienna. The address of the new European office is:

Rechte Wienzeile 3,  
Wien, Austria.

Local dial access will become available in September - also in Brussels. Our Concentrator systems have been installed in both offices, providing our usual autospeed facility.

BRUSSELS - **Lib Gibson** takes over the Brussels office in September, and can be found at:

I.P. Sharp Europe S.A.  
Ave. du General de Gaulle 39,  
Bruxelles, Belgium.

AND AROUND -

**Hazel O'Hare** is now Branch Manager of the LONDON, England office. **Margaret Reilly** is joined on September 1st by **John Larsen** in COPENHAGEN. **Keith Iverson** is taking over as Branch Manager in NEW YORK CITY. Keith has been with Sharp for 7 years, and moves from Toronto to New York in September. **Clark Bruce** joins **Jane Yates** in CALGARY, and **Jim Wheatley** joins **John Carpenter** in DALLAS. Jim spent the last two and a half years in software marketing - at Pansophic Systems, Inc. as marketing representative for south west Texas, then as regional Vice President for the Southwest for Nichols & Co. where he was responsible for marketing project management software.

BRITISH COLUMBIA - Remote printing is now available at the new Mohawk computer centre in Vancouver, where a line printer and tape drive have been installed. The autospeed line number in Vancouver is 689-6810, in Victoria it is 386-8809.

WASHINGTON -



Peggy Kueffer

**Peggy Kueffer** established the D.C. office in July of this year, having worked for four years with Air Midwest, Inc., and three subsequent years with The Computer Co. as Airlines Applications Consultant. She was joined in August by **Fred Sencindiver**, a graduate of Antioch College (Yellow Springs, Ohio). He subsequently worked as a programmer for Public Broadcasting in Washington, then for three years as Applications Consultant at The Computer Co. His interests are in database design and implementation, Statistical and Financial Analysis, and teaching APL.

## LETTER FROM LONDON

Valerie Lusmore  
Sharp, London.

They're changing guard at Buckingham Palace -  
Christopher Robin went down with Alice.  
A face looked out but it wasn't the King's.  
"He's much too busy a-signing things,"  
Says Alice.

(from "When we were very young", A.A. Milne, 1924)



The recent I.P.Sharp (UK) move to new offices in Buckingham Palace Rd., London may have been a rather belated attempt to support an APL user who was having problems with ←, but when A.A. Milne published his famous poem in 1924 referencing the problems and needs of governments, very few of the people presently involved in APL development were even born! However, the guard is still changed daily and from our windows we see the parade of soldiers resplendent in their red coats and bearskins, returning to barracks in Chelsea, led by a military band. In July we had a grandstand view of the Queen during one of the many processions celebrating her Silver Jubilee.

The IPSA UK company has recently celebrated its 4th birthday and its phenomenal growth from 3 people to nearly 30. This rapid expansion meant that the original offices on Piccadilly near Hyde Park Corner were bursting at the seams and so, late in 1976, we moved over to our present address near Victoria Station. The communications staff (and gear) were left behind in the former offices which will be remembered by most visitors as the place with all those lavish bathrooms, which was rumoured to have previously housed timesharing of quite another kind.

We now inhabit a spacious 5-storey Victorian townhouse graced with beautiful moulded ceilings, an elegant staircase, an old-fashioned open gilded cage lift, and a general air of gracious living. In contrast, the phone never stops ringing with enquiries about APL and how to use it. Mind you, that is what the support group is for and it's a really exciting job as you never know in the morning just what the day may bring.

The communications staff have outgrown the old place too and will soon join us. They have grown in capacity from 8 lines to 80 in the UK alone, and apparently the equipment is now too heavy to be moved in one piece. They are waiting for the Post Office to complete their work in the basement of the new building. From all accounts, it looks as if they are building a new telephone exchange there, wire by wire.

Other facilities in the new building include a fully equipped lecture room which makes it possible to hold our courses on our own premises, a popular move with all concerned. Courses are held regularly and also on demand, either for special topics or for groups of users. These may also be held in the Gloucester, Birmingham, or in the Warrington offices, or on a customer's own premises. Local support is also available from these branches and the rest of the UK is easily reached from the London office. If you are in the area, why not drop in and see us? Our telephone number is 01-730-0361. There is always someone available to answer technical enquiries and you can now use this number for communications problems too.

Perhaps, by the time there is another King in Buckingham Palace up the road, he will "assign" things at the Palace terminal! The way APL is taking off in Europe, I wouldn't be surprised.

## SYSTEM NEWS

## RELIABILITY FIGURES

	Times Down	Minutes Down	Sched. Hours	% Uptime
April	6	160	527	99.5
May	2	32	545	99.9
June	8	94	540	99.7
'77 2nd quarter	16	286	1612	99.7

## SECURITY

*SHARP APL* provides several levels of system security which enable the customer to protect the privacy of his user number, his programs and his data.

**Privacy of User Numbers**

Each customer is assigned a unique 7-digit account number. A password can (and should) be added to the account number. This "lock" should be guarded - by requesting a sign-on blot which will obliterate the account number and lock on the printout, and by changing the password - easily done at sign-off.

**Privacy of Workspaces**

Each workspace is given a name by its owner and stored in his own private library. The owner can obtain a listing of the workspaces in his library at any time. Any workspace can be given a password so that both the workspace name and the password must be entered correctly for access. The user may change the workspace name and/or the password.

**Privacy of Programs**

APL functions can be 'locked' in order to protect them from examination or modification. Pass-codes and other checks may be embedded in functions.

**Privacy of Files**

The file subsystem was designed to ensure maximum security for its users. The file owner specifies by means of an access matrix. The access matrix is a 3-column matrix. The first column contains a user number, the second contains an integer designating the type of access to be granted and the third contains an integer passnumber. If a passnumber is specified, it must be used each time the user performs a file operation. No user has access to a file unless there is a match with his user number (or a zero) in column one of the access matrix. The type of access granted to each user can vary. For example, a user may be given access to a file for the purpose of inputting information but be banned from reading the file. Use of the access matrix can give the file owner complete control of the file contents at all times.

### Physical Security & Backup

There is regular, extensive backup of all workspaces and files. Our downtown Toronto computer centre is in a new office building that conforms to rigid fire prevention standards. The power grid is one of the most reliable in the world, and a spare transformer is kept on hand. There is duplication of all hardware in the computer room (including the cpu) so that, in case of hardware failure, down time is kept to a minimum.

### User-Imposed Security

Mechanisms can be built into application programs by the author to provide additional security. Programs can be written so that they prompt for a special password known only to authorized users. A logging file which logs each use of a particular package can be set up. Any restriction which can be stated as an APL expression or function can be used to impose complex restrictions on file authorization.

The *SHARP APL* system provides many ways of protecting its customers from careless or malicious users. It is up to the customer, however, to make proper use of these methods in order to protect private files and programs. Locks and passwords should be changed regularly and printouts with locks showing should never be left lying around.

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### SHARP APL COURSES

<b>Introduction to APL:</b>	SEP	OCT	NOV
CALGARY	7,8,14,21,28		
DALLAS		17-21	
EDMONTON	12,13,19,20,26		
HOUSTON	19-23	14-18	
LONDON, ENG.	12-14	17-19	21-23
OTTAWA	12-16	10-14	14-18
ROCHESTER	26-30	17-21	21-25
SEATTLE		31-Nov. 2	
TORONTO	06-08	10-12	
TORONTO	19-21	31-Nov. 2	21-23

### Seminars

"A Taste of APL"	Edmonton	- September 8
"Files & Data Structures"	Edmonton	- October 26
"Immediate & Deferred Batch APL"	Edmonton	- November 16
"MAGIC for Time Series Analysis"	London, U.K.	- on demand
"Appreciation of APL"	London, U.K.	- on demand
"MAGIC"	Washington D.C.	- August 1-2

<b>Advanced APL:</b>	"APL System Design"	
LONDON, ENGLAND	15-16	24-25

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 IFIP CONGRESS 77

The International Federation for Information Processing held its triennial congress in Toronto this past month. I.P. Sharp Associates was represented on the technical program by Ian Sharp, who chaired the Symposium on **Interactive Approaches to Corporate Planning and Control**, and appeared on two other panels.

The 1977 World Computer Chess Championships were held as part of the congress. The tournament consisted of a field of 16 programs, playing four rounds under the Swiss pairing system. The games were displayed on large demonstration boards. The Sharp network provided the communications for the "Master" program entered from Harwell, England and the Elsa program in Munich, Germany.

## IMPRESSIONS - IFIP 77

Roger Moore

Dr. L. Pouzin discussed problems of interfacing to carrier supplied packet switching networks, including the question of who will supply protocol conversion devices. This was followed by a presentation by Dr. L. Roberts, chairman of Telenet Corporation, in which a microprocessor conversion box which would rent for \$700/month was described.

Hugh O'Rourke

Although I have been working in computing for close to fifteen years, it is the first computer conference of any kind that I have attended. One of my first reactions to this one was "why have I waited so long?"

The Congress has, however, confirmed my belief in the prepubescence of the computing industry. For example, distributed processing is one very popular trend in computing. I attended the two sessions on the subject hoping, perhaps naively, to gain a better understanding of the subject. Instead, I was treated to four separate and mutually exclusive definitions of the term. And each speaker had a number of sound, logical reasons for either including or excluding certain classes of multiple-processor systems from his definition of distributed processing.

Accreditation has been a hot issue in computing circles for a number of years, but in spite of many sound arguments both pro and con, I have for some time believed it to be both inevitable and a long way off. I now believe it to be even farther away in the future. Distributed computing is only one example of commonly-used buzzwords that have yet to be defined. Accreditation must involve some sort of examination, and yet there would appear little hope of agreement as to the correctness of answers with respect to this, and many other, concepts in data processing.

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 NEW SHARP APL PUBLICATIONS

Brochures:	Currency Exchange File Subsystem Mailbox Special Systems X-11
Manuals:	Report Formatting
Application Briefs:	File Moves Chartered Banks - Annual Data

## SHARP SPECIAL SYSTEMS

### I.P. SHARP ASSOCIATES ENTERS THE DAIRY INDUSTRY

Fred Perkins

Intersystems BV, the Amsterdam-based division of Sharp Special Systems, has made a significant impression on the Dutch dairy industry, by bringing computers that bit nearer the cow.

CMC-Melkunie BV is a large dairy wholesale distributor, dealing in about 150 milk-based products. From a total of seven depots, the company supplies nearly 10,000 clients, mainly shops and supermarkets. The growth of CMC's business led to problems in coping with the large number of daily orders being processed by the depots, and a computerised replacement for the manual system was sought. Each depot now has about 7 operators, who take daily orders by telephone, at a very intensive rate, striving to meet loading schedules for the delivery lorries.

Intersystems has supplied 7 separate minicomputer systems for the distribution depots, each having in turn 7 VDU terminals for order entry. Minimum operator training is required, as the system is highly conversational and gives very clear error messages at every stage. The volume of printout is kept to a minimum, hard copy only being produced when it is really required. Until then, orders can be retrieved, displayed, and modified. A supervisor position can at any time display the status of ordering on any routes and can thus have orders solicited from late customers. When a route is complete, the system computes the total numbers of crates and containers for the load, and prints all documentation on one continuous sheet of special stationery. Output includes delivery notes for the customers, and loading instructions for the driver, optimised to take account of the warehouse layout.

Since the systems are a critical part of the company's business, reliability is of prime importance, and Intersystems provides total maintenance of both hardware and software on very short "call-out" response times. Magnetic tape logging assures that even in the event of catastrophic system failure, recovery is quickly accomplished without loss of data. At the end of the day, the system produces a magnetic tape summary of the day's transactions, for accounting processing on a central computer.

In order to meet the requirements of very high interactive performance, reliability, and ease of operation, Intersystems has developed special purpose systems software for control of terminals, task scheduling, and database management. Intersystems supplied the complete systems, as a turnkey project, using a mix of manufacturer's equipment, selected on the grounds of economy, functional acceptability, and reliability. Data General minicomputers form the heart of the systems.

APL was not forgotten, and played a vital role in design and simulation of the system software, allowing design methods to be proved before actual implementation in the lower level languages of the minicomputer.

## SHARP APL PUBLIC LIBRARY - UPDATE

Changes to public library workspaces are:

39 X11

*HSPRINT* now replaces the old *PRINTREQ* and *AUTPREQ* functions.

51 *FPSTOCKLIST*

A list of the five groups of securities available on the Financial Post.


**INTERNATIONAL BRANCH OFFICES**
**Amsterdam**

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Amsterdam 1002  
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(020) 24 40 50

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**Warrington**

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55342

**Washington**

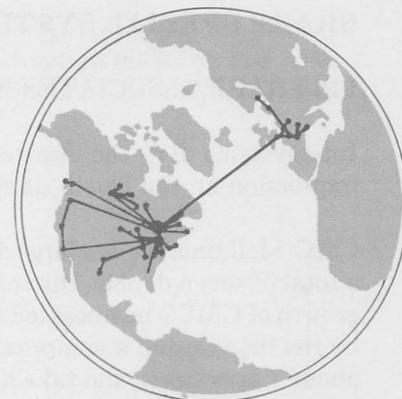
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241 52 42



APL Operator Voice (416) 363-2051

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