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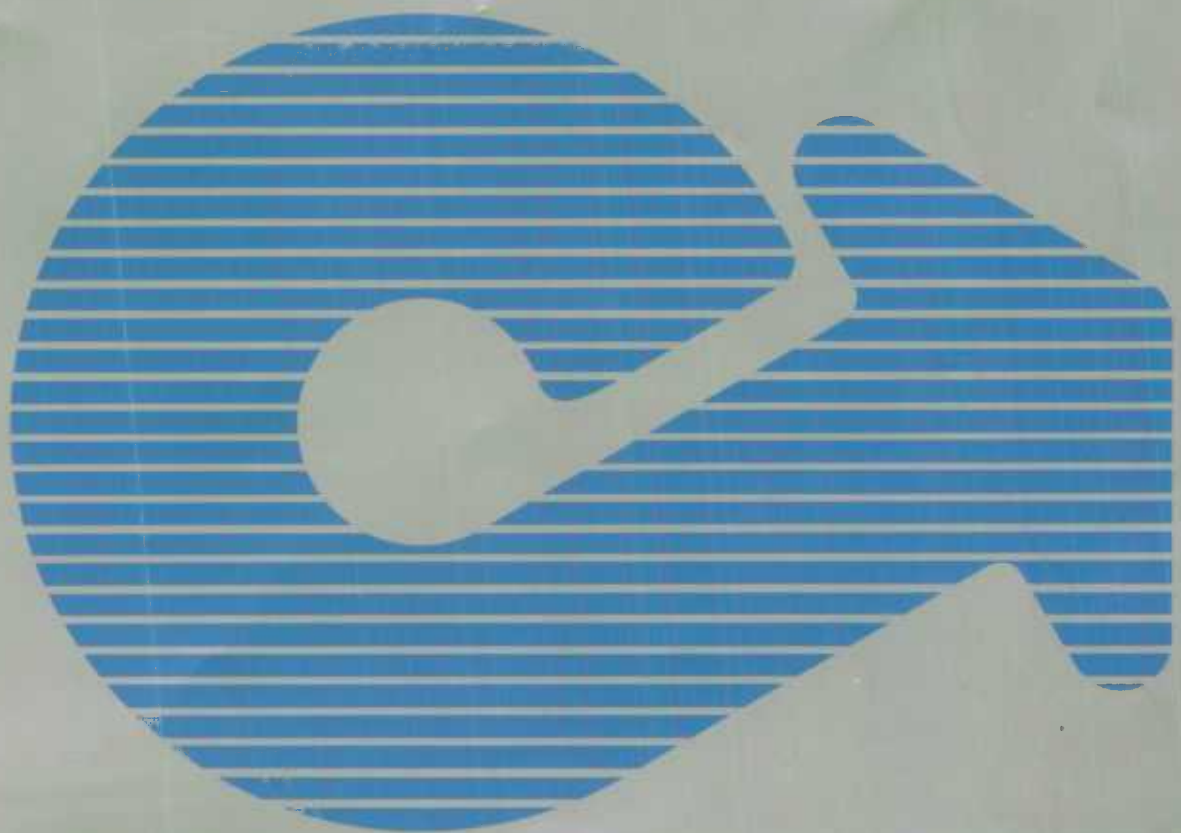
CANSIM
Interactive System: User's Manual



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The CANSIM Interactive System

User's Manual

February

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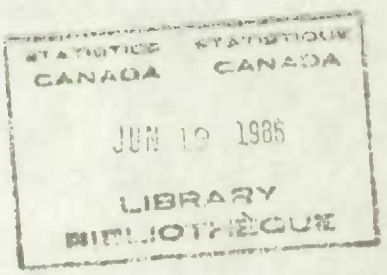

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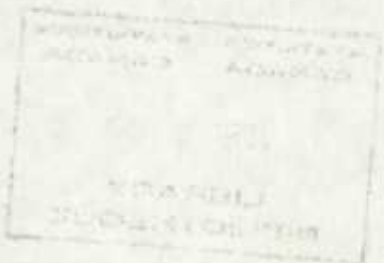

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I. INTRODUCTION

The CANSIM Interactive System (CIS) enables the user to access the CANSIM Time Series Database in a "conversational", interactive process. The system may be called "conversational" because CANSIM retrieval requests can be formulated by responding to prompts which are systematically generated for the user during the course of a retrieval session on a low-speed remote terminal.

In many instances, a prompt may comprise not only a question to the user, but also, an indication of the possible responses to the question. In this regard, a main feature of CIS is that it does not require knowledge, **a priori**, of data processing language or technique. For the experienced user, on the other hand, a NO PROMPT mode is available whereby input to the system can be provided, in the required sequential format, without prompting assistance.

CIS consists basically of a set of commands which are employed to formulate, submit, and output jobs for the retrieval either of CANSIM data or of pre-formatted electronic fact sheets (tables and text files pertaining to special blocks of CANSIM series). Most commands involving data retrieval have two parts, or "Phases": in Phase 1, the user defines a data retrieval request, after which the system automatically generates a batch job and creates a file to contain the results; from this point, upon successful job completion, output may be directly displayed at the terminal. Phase 2 is invoked specifically to obtain an output file created in CIS but not previously accessed.

The CANSIM Interactive System requires of the user familiarity with two documents which describe the contents and usage of the CANSIM database:

- **"CANSIM Interactive System User's Manual"**
- **"CANSIM Main Base Series Directory"**

The system is implemented in VS APL under TSO/MVS. While no knowledge of APL is required for CANSIM Main Base retrievals, actual manipulation of the data will require at least some familiarity with the language. The APL Manual "APL Language" - IBM GC26-3847-2, File No. S370-22, and "VSAPL for TSO: Terminal Users Guide" - IBM SH20-9180-0, File No. S370-22, copies of which may be obtained from IBM, will be useful references.

II. ACCESS TO THE CANSIM INTERACTIVE SYSTEM

II.1 CANSIM/CIS Usage Authority

It is necessary to obtain authorization from the CANSIM Division to use the CANSIM Database and software. CANSIM staff will authorize the user's TSO "Userid" (account number) to access the CIS software. Users only interested in batch access will be provided with a CANSIM user code required to submit batch jobs. Separate authorization codes or passwords will be required for other CANSIM databases and retrieval systems. The general terms and conditions for use of CANSIM databases and software are outlined on the following page.

Statistics Canada Statistique Canada

Ottawa, Canada

CANSIM SERVICES TERMS AND CONDITIONS

CANSIM is an Official Mark of Statistics Canada for wares or services. CANSIM incorporates statistical information, machine readable data bases, software, documentation and associated services provided by Statistics Canada.

Users of the CANSIM machine readable data bases are free to use the statistical information for information and analytical purposes but are prohibited from re-distributing in machine readable form any part or version of the data originating from CANSIM except as approved under a distribution contract with Statistics Canada. When publishing any statistical data or text retrieved from CANSIM the following credit should be used: "Source: CANSIM - Statistics Canada".

CANSIM services are publicly provided by Statistics Canada through a computing service organization (referred to as the Host Bureau) under contract to Statistics Canada. The user is responsible for the payment of all charges levied by the Host Bureau for use of its facilities and services.

Statistics Canada provides access to statistical information and retrieval and analytical software as a public service and makes every reasonable effort to maintain the statistical data accurately and in a timely manner. Where data originate from agencies other than Statistics Canada, the source agency should be consulted for advice on concepts, methodology and limitation in the data. Statistics Canada will not be responsible for any interpretive errors or erroneous conclusions drawn, as a result of the use of statistical data or software provided by CANSIM. The user is responsible for the verification of the applicability and logic of any computational operations performed.

Statistics Canada will monitor the usage of the CANSIM data bases and software and requires the Host Bureau to provide aggregate accounting measures of the processing activity associated with this usage to Statistics Canada. Any user specific information provided by the Host Bureau will be treated as confidential by Statistics Canada; it is intended for evaluation of the services and policies associated with CANSIM. Statistics Canada reserves the right to change access authorization codes and to rescind access authority.

The use of any CANSIM systems, access authorization code(s) or password(s) provided by Statistics Canada will indicate acknowledgement and acceptance of the above terms and conditions.

Director, CANSIM Division,
Statistics Canada,
Ottawa, Ontario K1A 0Z8

(Une version française de cet avis peut être obtenue de CANSIM)

Canada

II.2 THE SIGN-ON PROCESS

At the outset, the user will sign on to T.S.O. according to the procedures established by the CANSIM Host Service Bureau.

II.2.1 THE "Start-Up" PROCEDURE

(1) POWER ON the terminal

(2) DIAL the local DATAPAC number
This number depends on the transmission speed as well as the city where the user is located.

(3) At the "high-pitched" tone, connect the terminal to the modem (acoustic coupler or other)

(4) SET PARITY to EVEN

(5) SET TRANSMISSION SPEED to 300 or 1200 BAUD, depending on the capabilities of the terminal and modem

(6) SET LINE to "HALF" duplex

(7) TYPE a period (' . ') followed by a CARRIAGE RETURN

DATAPAC will identify itself by printing "DATAPAC" followed by two four digit numbers

(8) ENTER the address of the CANSIM Host Service Bureau

DATAPAC will respond: DATAPAC: CALL CONNECTED

(9) PROCEED to logon to the Host Service Bureau

II.2.2 THE "Logon" PROCEDURE

THE TERMINAL MUST BE IN ASCII mode

(1) The user types in — LOGON USERID

(2) The system requests a password — PSWRD

(3) The system responds with READY, and the user enters — CIS

(4) The system responds with:

aply805i enter null line for limited, upper case characters without apl
aply804i using the apl character set, enter shift 6

(5) The user enters — CARRIAGE RETURN

aply925i to exit vs apl, type

)OFF HOLD

(6) the system invokes VS APL and CIS will begin to execute

Example 1

1. READY
2. cis

aply805i enter null line for limited, upper case characters without apl
aply804i using the apl character set, enter shift 6
aply925i to exit vs apl, type

)OFF HOLD

3. english/français? e/f?
4. enter line width (50-132)
5. 1/11/30 13:04 cansim message cansim

   the monthly "dairy review" tables 1-9, released at 1:00 pm november 30, 1982, are now available on the 'agr' command of c.i.s.

   :
   :

6. broadcast messages are available from 81/09/04 to date
   do you wish to see previous messages?
7. command?

Example 1 outlines the dialogue generated in CIS through the conventional TSO "logon" procedure. The program, stored in the APL library 6070, can also be accessed directly in APL by using the APL command)LOAD 6070 CIS. When this command is entered, CIS will immediately begin to execute, proceeding in the same manner as if accessed through TSO. The)LOAD 6070 CIS command can also be used in the case where the user wishes to re-enter the program after having an abnormal session termination - on condition that control of the APL system was still maintained.

The system may be implemented in either of the official languages, and a prompt for the desired version is given at the initial stage (Example 1, Line 3) of a retrieval session. With this language option, the user will, in addition to obtaining access to the desired version of the system, be able to obtain his choice of English or French text which will comprise or accompany any CIS retrieval.

Printed output of a CIS retrieval is formatted for a 132-character terminal. If the platen on a user's terminal is not 132 characters wide, some print from the right-hand side of each line may be lost. The user may safeguard against this by responding to a prompt for line width (Example 1, Line 4). This prompt allows the user to specify a line width of, for example, 80 characters, in which case the system would print, for each line transmitted for a 132-character terminal, as much as will complete an 80-character line, and then finish the transmission on the next line of the page.

At this point, any messages that have been filed for transmission in CIS are printed automatically (Example 1, Line 5). There are 2 kinds of messages that can be transmitted: BROADCAST messages and USER messages. Broadcast messages, of which an example is given in Example 1, Line 5, can be generated by CANSIM staff only, and serve to inform users of any developments in the realm of CANSIM/CIS. Each message is available for a maximum of three months and a minimum of two months, and users have the option of printing selected messages within that time frame (Example 1, Line 6). Once a message has printed, however, it is automatically deleted from the user's APL workspace.

CANSIM users may themselves transmit messages to CANSIM staff or to other CANSIM users, and these USER messages are described in Section VI.4.

With the COMMAND? prompt (Example 1, Line 7), the initial stage of a CIS session is completed, and the user may proceed with the formulation of his retrieval requests.

II.3 EXIT FROM CIS

If a user wishes to stop implementation of the CANSIM Interactive System at any stage of a retrieval session, he may do so by entering either the word "STOP" or a CARRIAGE RETURN after any COMMAND? prompt. In this way, the user will leave the CIS program, but maintain control of the APL processor; from this point, he may logoff with the command)OFF. Alternatively, he may exit from CIS and return to READY mode in TSO by typing)OFF HOLD.

III. DATA RETRIEVAL COMMANDS: TABLE, DISPLAY, MANIPULATE, PT1 AND SAP

The TABLE, DISPLAY, MANIPULATE, PT1 and SAP commands all have two "Phases", of which Phase 1 can be implemented in either PROMPT or NO PROMPT mode. The interactive dialogue for these commands is identical, the only difference among them being the format of the printed output.

The TABLE command generates a printed table with the observations (datapoints) of the retrieved time series printed in columns. The number of columns will depend on the number of series retrieved, the size of the platen on the user's terminal, and the width of each column of data. Titles (matrix and series) as well as footnotes, for each series retrieved, will be printed first, and with this information, each column of data in the table to follow will be identified. If, however, all the series accessed are from the same matrix, the matrix title and footnotes will appear only once for the entire table; the TABLE command then, is especially recommended for this type of retrieval. It should, however, be avoided when series of different periodicities are desired because the printed table resulting from such a retrieval will be a complicated arrangement of data over time - an arrangement that may not be readily detected.

The DISPLAY command generates tables where, for each series retrieved, titles and footnotes will be printed, with the datapoints in the series (if the series is sub-annual) running both across and down the page. For example, if a series is quarterly, the quarterly observations will print across the page, with a new line of data for each year retrieved. The actual dimension of the table will depend on the periodicity of the data, the width of the terminal's platen, and the length of each column of data.

Use of the DISPLAY command would be appropriate when a retrieval includes series of varying periodicities; as well, because the matrix title and footnotes are printed for each series retrieved, the command is useful when the retrieval involves series from different matrices.

The MANIPULATE command generates a reference table for retrieved series, and copies the actual data into the user's active APL workspace so that each series becomes an APL variable. The data can then be displayed, analysed, or manipulated using the APL language.

In terms of the reference table of retrieved data - the printed output of the MANIPULATE command - listed are the Databank identifier of each series, its frequency, the retrieval period covered, and the number of datapoints accessed. Titles and footnotes are not, however, printed, and the user who retrieves data using the MANIPULATE command would be advised to record this information from the CANSIM Main Base Series Directory at the same time as the series identifiers themselves are being located.

The PT1 command permits the CIS user to retrieve data, and to output this data in a compact, pre-designed tabular format such that, for each sub-annual series, monthly or quarterly observations will print across the page, with a new row of data for each year retrieved. In this regard, "mixed periodicity" retrievals, and non-aligned start and/or end dates, are automatically grouped and aligned. Further, the user may supply descriptive headings for the tables prior to their being printed.

The PT1 command is intended primarily for the compact printing and labelling of relatively small numbers of series; it should not be used for large-volume retrievals where batch output is advised. The command is also useful as a pre-screening or verification tool when the data are to be manipulated using APL.

The SAP command allows the user to retrieve series and to obtain selected, pre-formatted reports for them. Optionally, he can also print data in the format generated by the PT1 command, or retain the series for futher processing in APL. The SAP command also allows the user to "build" his own report format from a basic menu of 36 functions. By employing the BLD option, which is systematically connected to the SAP command, up to nine functions can be selected for a given report. Such customized tabulations cannot be saved for re-use, but can easily be reconstructed from the function menu list (see Appendix 2).

In terms of the statistical properties of the series which are examined by the SAP command, the retrieval end-date for each series retrieved serves as the reference point for the analysis. Since 'year-to-date' and 'year-to-year' measures are included, the retrieval must encompass a 'current' year and a full 'previous' year of data.

The user should note that, according to his choice of reports, the SAP command performs analysis for both accumulating-type data, where annual totals are based on the summation of quarterly or monthly (or other) components within a given year, and static (index, ratio and average) type data where totals are not based on summation.

III.1 PHASE 1: THE FORMULATION OF CANSIM SERIES RETRIEVALS

In Phase 1 of the TABLE, DISPLAY, MANIPULATE, PT1, or SAP commands, the user forms his retrieval request by specifying the series identifiers, the time period, and the security words for the time series to be accessed. Further, as mentioned, Phase 1 can be implemented with or without prompting.

III.1.1 Phase 1 in PROMPT Mode

Example 2

1. command? **table** (or 'dis' or 'man' or 'pt1' or 'sap')
2. phase? 1/2? **1**
3. prompt? y/n? **y**
4. cansim or databank? c/d? **d**

In Example 2, Line 1, the user indicates the command he wishes to execute - specifying, in other words, the format in which he wishes the retrieved data to be displayed. It should be noted here that (at least) the first three letters of the retrieval commands (TAB, DIS, MAN) can serve as valid responses to the COMMAND? prompt. If a retrieval command is entered incorrectly, the program will respond with the error message "NOT IMPLEMENTED", and then return with another COMMAND? prompt.

Indication that Phase 1 is to be implemented is given when the user responds to the question seen in Example 2, Line 2, and after this, he is offered the option of being prompted for his retrieval specifications (Example 2, Line 3). Regardless of the user's response to this question, the program will proceed with the prompt "CANSIM/DATABANK?" (Example 2, Line 4). Here, the user is asked if he will be using CANSIM or Databank series identifiers in his retrieval request. Each CANSIM series has these two types of identifiers, and regardless of the one used by the CIS user, the data retrieved will be the same. However, identifiers of retrieved data may not coincide with those employed in Phase 1:

(1) Both CANSIM and DATABANK identifiers are provided on a DISPLAY printout.

(2) Regardless of the type used in Phase 1, CANSIM identifiers are used to denote series in a TABLE printout.

(3) Regardless of the type used in Phase 1, DATABANK identifiers are used to denote series brought into an active APL workspace by the MANIPULATE Command.

(4) Regardless of the type used in Phase 1, DATABANK identifiers are used to denote series retrieved by the PT1 or SAP Commands.

(5) If series are RENAMED (an option described on Page 12), the series will be identified by the rename given - regardless of the command.

Example 3

1.	command?		man
2.	phase? 1/2?		1
3.	prompt? y/n?		y
4.	do you want zero as replacement values?	y/n?	y
5.	cansim or databank?	c/d?	c

CANSIM series designated "partly secure" contain datapoints that are, for various reasons, not available to the user. As well, some series may not encompass the sample period specified in a retrieval request. When he is using the MANIPULATE Command, the user has the option of generating specific values for such datapoints (Example 3, Line 4). Note that this option is not provided when the TABLE or DISPLAY commands are used.

If a CARRIAGE RETURN is entered in response to the 'replacement values' prompt, no values will be generated, and the system will proceed with the next prompt (Example 3, Line 5). A response of 'Y', however, will result in the generation of 0 (zero) values for all datapoints not available to the user. A response of 'N', on the other hand, will provide the user with two replacement values:

-72E+72 (for SECURE datapoints)
+72E+72 (for NOT AVAILABLE datapoints)

III.1.1.1 **Phase 1 in PROMPT Mode: Retrieval by CANSIM Identifiers**

Example 4

1.	command?			**dis**
2.	phase?	1/2?		**1**
3.	prompt?	y/n?		**y**
4.	cansim or databank?		c/d?	**c**
5.	range or matrices?		y/n?	
6(a)	from matrix? to matrix?			
OR				
6(b)	matrix no.?			
7.	all/specific/range?		a/s/r?	
8(a)	limit?			
OR				
8(b)	from series no.? to series no.?			
OR				
8(c)	series no.?			
9.	security word? XXXXXXX			
10.	start date?			
11.	end date?			
12.	rename? (ALLOWED ONLY IF SPECIFIC SERIES RETRIEVED)			
13.	more?	y/n?		

When the user indicates (Example 4, Line 4) that he is going to retrieve series by their CANSIM identifiers, he is immediately prompted for information about the matrix number - the first element of a CANSIM identifier. In this regard, he has two choices: he may retrieve from either a range of matrices or from a single matrix. If a range of matrices is to be accessed, a response of 'Y' is given the "RANGE OF MATRICES?" prompt (Example 5, Line 5); the user will then be asked the questions "FROM MATRIX?" and "TO MATRIX?" (Example 4, Line 6(a)). If but a single matrix is to be accessed, a response of 'N' is given to the "RANGE OF MATRICES?" prompt, and the system will ask for only one matrix number (Example 4, Line 6(b)). In either case, a prompt is then given (Example 4, Line 7) for the quantity of series desired within the matrix (matrices) specified. Here, the user has three options.

If a response of 'A' is given (retrieve ALL series in a matrix or matrix range), the system will prompt for a LIMIT on the number of series to be retrieved (Example 4, Line 8(a)). If the user responds with a '5', for example, only the first five series in the matrix (matrices) will be accessed. If he enters a CARRIAGE RETURN in response to the prompt, ALL series in the matrix (matrices) will be retrieved.

If the user responds with an 'R' (retrieve a RANGE of series within a matrix or matrix range), the program will ask the questions "FROM SERIES NO.?" and "TO SERIES NO.?" (Example 4, Line 8(b)) to establish the range (which would include the "FROM" and "TO" series) to be retrieved.

Finally, if the user responds with an 'S' (retrieve a SPECIFIC series within a matrix or matrix range), the system will prompt for the specific CANSIM series identifier (Example 4, Line 8(c)).

After the CANSIM series identifiers have been supplied by the user, a prompt is given for the SECURITY WORD which may have been assigned to the series (Example 4, Line 9). With the prompt, a "mask" will be printed, over which, if necessary, a security password can be securely entered. (Some terminals, however, string the mask out as a row of characters, and in these cases, the password would be entered at the end of the row). If a series has been designated PUBLIC, no security word is required for retrieval, and a CARRIAGE RETURN will be sufficient response to the prompt. If the series is SECURE, however, the security password, obtained from the originating source of the data, will have to be entered over the mask. The security status of each CANSIM time series is indicated in the CANSIM Main Base Series Directory.

The user is then prompted for the time period to be covered by the retrieval (Example 4, Lines 10 and 11). The format of the responses to both the "START DATE" and "END DATE" questions is as follows:

YYMMDD where, if applicable,

YY indicates the desired YEAR (e.g. 1971=71)
MM indicates the desired MONTH (e.g. April=04)
DD indicates the desired DAY (e.g. Jan. 4=04)

An alternative to the YYMMDD specification is the use of asterisks (*) to denote start and end date information. If an asterisk is employed in response to the "START DATE" prompt, the series will be retrieved from the earliest available observation; if it is used in response to the "END DATE" prompt, the retrieval will end with the most recent available datapoint. Therefore, if asterisks are employed in response to both the start and end date prompts, series will be retrieved in their entirety.

If the user indicates that he wishes to retrieve a SPECIFIC series within a matrix, he will be given the opportunity to RENAME the series (Example 4, Line 12); any name that begins with an alphabetic character and does not exceed 8 characters in length can be used. If a RENAME is provided, the retrieved series will be subsequently identified by the rename rather than the CANSIM identifier by which it was retrieved. The user should note that the RENAME option is provided only when a SPECIFIC series is being retrieved within a SPECIFIC matrix; CIS does not have the capability of attaching names to all series, or to a range of series, within a matrix or matrix range.

Finally, the user is asked if he wishes to retrieve more series (Example 4, Line 13). If a response of 'Y' is given to the prompt, the program will loop back to the question "RANGE OF MATRICES?" (Example 4, Line 5), after which the retrieval prompts which follow will be repeated. A response of 'N' to the prompt will result in the termination of the retrieval specification process, and the automatic submission of the retrieval job. (See Example 5).

Example 5

1.	command?	**dis**
2.	phase? 1/2?	**1**
3.	prompt? y/n?	**y**
4.	cansim or databank? c/d?	**c**
5.	range of matrices? y/n?	**n**
6.	matrix no.?	**1**
7.	all/specific/range? a/s/r?	**a**
8.	limit?	
9.	security word?	XXXXXXX
10.	start date?	*
11.	end date?	*
12.	more? y/n?	**n**
13.	immediate, priority, regular or night service? i/p/r/n?	**r**
14.	request data number is	**23**
15.	JOB EXECUTING	
16.	continue monitor? y/n?	**n**
17.	command? (CARRIAGE RETURN)	
18.	end of execution	

* (The printing of two asterisks indicates to the user that he has left CIS
* and is now in APL)

After indicating that he has completed his series retrieval specifications (Example 5, Line 12), the user is asked (Example 5, Line 13) to specify the service level, provided by the CANSIM host bureau, for the batch retrieval job that is about to be submitted. It should be noted that processing costs for "immediate" or "priority" retrieval jobs are higher than those for jobs submitted without priority. A "high-

priority" designation is useful in those instances where, at peak computer-usage times, very rapid "turnaround" is required; for most applications of CIS, however, the normal ("regular") service level will provide a timeliness of job execution that is adequate for the user.

When a response is given to the service level prompt, the retrieval job is automatically submitted, and, in turn, a "REQUEST DATA NUMBER" (Example 5, Line 14) is assigned the job. This number is used in Phase 2 of CIS where the user must identify the series retrieval output that is to be accessed.

Once the job has been submitted, a message reporting its STATUS in the system will be automatically printed (Example 5, Line 15). The user is then offered the option of monitoring the job as it is being processed (Example 5, Line 16). If a response of 'Y' is given to the prompt, another report on the job status will be given. A response of 'N', on the other hand, will generate a COMMAND? prompt (Example 5, Line 17); here, the user can either initialize a new battery of series requests by providing a retrieval command, or leave the interactive system altogether by typing in the word "STOP", or by pressing a CARRIAGE RETURN (Example 5, Line 18).

III.1.1.2 **Phase 1 in PROMPT Mode: Retrieval by Databank Numbers**

Each CANSIM time series is also identified by a Databank number, and the user may employ this number in CIS as an alternative to the matrix and series identifiers discussed in the previous Section. (As with matrix and series numbers, Databank identifiers can be obtained from the CANSIM Main Base Series Directory).

When series are being identified in CIS by Databank number, the interactive dialogue is very much the same as that where CANSIM identifiers are employed.

Example 6

1.	command?	**man**
2.	phase? 1/2?	**1**
3.	prompt? y/n?	**y**
4.	do you want zero as replacement values? y/n?	**y**
5.	cansim or databank? c/d?	**d**
6.	range? y/n?	
7(a)	from databank no.? to databank no.?	
OR		
7(b)	databank no.?	
7(c)	rename?	
8.	security word?	XXXXXXX
9.	start date?	*
10.	end date?	*
11.	more? y/n?	n
12.	immediate, priority, regular or night service? i/p/r/n?	r
13.	request data number is	23
14.	JOB EXECUTING	
15.	continue monitor? y/n	n
16.	command?	(CARRIAGE RETURN)
17.	end of execution	

*

*

In Example 6, Line 5, the user indicates that he wishes to identify series by Databank number; the system then offers him the option of retrieving either a RANGE of series or a single series (Example 6, Line 6). If a response of 'Y' is given for this prompt, the user is asked the questions "FROM DATABANK NO.?" and "TO DATABANK NO.?" (Example 6, Line 7(a)). While these questions are analagous to the "FROM SERIES" and "TO SERIES" prompts which are given when CANSIM identifiers are being used (Example 4, Line 8(b)), it should be noted that a range of Databank numbers can extend beyond a single matrix, and indeed, may encompass several matrices.

If the user responds with an 'N' to the RANGE? prompt, he will simply be asked to enter a single Databank number (Example 6, Line 7(b)), after which an opportunity is given to RENAME the series (Example 6, Line 7(c)). As in the case where CANSIM identifiers are being employed, the name assigned to a series can be any alphanumeric string which does not exceed 8 characters in length and which begins with an alphabetic character. Again, the RENAME option is provided only when a specific series is being retrieved.

At this point, the interactive dialogue (Example 6, Line 8-17) is the same as that where the user supplies CANSIM identifiers in his retrieval requests. The responses appropriate to the prompts for the SECURITY WORD, the retrieval START and END dates, as well as the prompt for MORE series, are discussed under Example 4. If the user responds with a 'Y' to the MORE? prompt, the system will loop back to the RANGE? prompt, and the retrieval specification process will begin again. A response of 'N' to the MORE? prompt will result in the termination of the specification process and the automatic submission of the retrieval job. This is described under Example 5.

III.1.1.3 Some Examples

Example 7

Retrieve, by Databank number, ranges of series from Matrix 218. The data is ANNUAL, and will be retrieved from 1965 to the latest available year. Manipulation, through APL, of the data is desired, so the MANIPULATE command is employed. The system is to generate zero replacement values for any datapoints that may not be available.

1.	command?	**man**
2.	phase? 1/2?	**1**
3.	prompt? y/n?	**y**
4.	do you want zero as replacement values? y/n?	**y**
5.	cansim or databank? c/d?	**d**
6.	range? y/n?	**y**
7.	from databank no.?	**d607585**
8.	to databank no.?	**d607588**
9.	security word?	XXXXXXX
10.	start date?	**65**
11.	end date?	*
12.	more? y/n?	**y**
13.	range? y/n?	**y**
14.	from databank no.?	**d607165**
15.	to databank no.?	**d607175**
16.	security word?	XXXXXXX
17.	start date?	**65**
18.	end date?	*
19.	more? y/n	**n**
20.	immediate, priority, regular or night service? i/p/r/n?	**r**
21.	request data number is	14

22.	JOB EXECUTING	
23.	continue monitor? y/n?	n
24.	command?	(CARRIAGE RETURN)
25.	end of execution	
	*	
	*	

Example 8

Retrieve, using CANSIM identifiers, all series in matrices 920 through 924. The retrieval period is from January, 1971, to December, 1980. The data is to be presented in TABLE format when Phase 2 is invoked.

1.	command?	**table**
2.	phase? 1/2?	**1**
3.	prompt? y/n?	**y**
4.	cansim or databank? c/d?	**c**
5.	range of matrices? y/n?	**y**
6.	from matrix?	**920**
7.	to matrix?	**924**
8.	all/specific/range? a/s/r?	**a**
9.	limit?	
10.	security word?	XXXXXXX
11.	start date?	**7101**
12.	end date?	**8012**
13.	more? y/n?	**n**
14.	immediate, priority, regular or night service? i/p/r/n?	**r**
15.	request data number is	15
16.	JOB EXECUTING	
17.	continue monitor? y/n?	**n**
18.	command?	(CARRIAGE RETURN)

19. end of execution

*

*

Example 9

Retrieve, using CANSIM identifiers, a range of series in Matrix 926. Output the data, covering the period from January, 1980, to the latest available month of data, in DISPLAY format.

1.	command?	**dis**
2.	phase? 1/2?	**1**
3.	prompt? y/n?	**y**
4.	cansim or databank? c/d?	**c**
5.	range of matrices? y/n?	n
6.	matrix no.?	**926**
7.	all/specific/range? a/s/r?	**r**
8.	from series no.?	**1**
9.	to series no.?	**9**
10.	security word?	XXXXXXX
11.	start date?	**8001**
12.	end date?	*
13.	more? y/n?	**n**
14.	immediate, priority, regular or night service? i/p/r/n?	**r**
15.	request data number is	16
16.	JOB EXECUTING	
17.	continue monitor? y/n?	**n**
18.	command?	(CARRIAGE RETURN)
19.	end of execution	

*

*

III.1.2 Phase 1 in NO PROMPT Mode

CIS offers the user who is familiar with the system the option of forming retrieval requests without prompts. While the request parameters must be entered in the required order, and syntax rules still apply, significantly faster development of retrieval requests is made possible in the NO PROMPT mode.

The NO PROMPT mode is invoked in the following way:

Example 10

1.	command?	**dis** (or 'tab' or 'man' or 'pt1' or 'sap')
2.	phase? 1/2?	**1**
3.	prompt? y/n?	**n**
4.	cansim or databank?	**c**
5.	?	

By responding with an 'N' to the question seen in Example 10, Line 3, NO PROMPT mode is activated, and, after indicating his use of CANSIM or Databank identifiers (Example 10, Line 4: this prompt is given regardless of the response to the PROMPT? question), the system will return with a question mark (Example 10, Line 5). It is at this point, immediately following the question mark, that the retrieval request is entered as a string, with each parameter in the string separated by a comma.

III.1.2.1 **Phase 1 in NO PROMPT Mode: Retrieval by CANSIM Identifiers**

The format of a retrieval request string where CANSIM identifiers are used is as follows:

1 SECURITY STATUS of the data:

'S' for SECURE data
'P' for PUBLIC data

(See the CANSIM Main Base Series Directory for the security status of series. If an 'S' is specified, a mask will print after a request string has been entered, and the user will be required to type, over this mask, the security password. See also Page 12).

2 START DATE (see Page 12)

3 END DATE (see Page 12)

4 MATRIX NUMBER

or

4(a) FIRST MATRIX OF A MATRIX RANGE
4(b) LAST MATRIX OF A MATRIX RANGE

5 SERIES OPTION:

'A' for ALL series in a matrix or range of matrices
'R' for a RANGE of series within a matrix or range of matrices
'S' for SPECIFIC series within a matrix or range of matrices

6 A LIMIT, in units, of series to be retrieved. This parameter is optional, and can be used only when the user indicates (in (5)) that ALL series are to be retrieved from a matrix or range of matrices.

or

6(a) FIRST SERIES of a range of series to be retrieved. This parameter is entered when the user indicates (in (5)) that a RANGE of series is to be retrieved from a matrix or range of matrices.
6(b) LAST SERIES of the range of series that is to be retrieved.

or

6(a) A SPECIFIC series, denoted by its CANSIM identifier, to be entered if the user indicates (in (5)) that SPECIFIC series are to be retrieved from a matrix or range of matrices.
6(b) Optionally, a RENAME for this series. (See page 12).

7 A SECURITY PASSWORD, if series is designated SECURE (in (1)), to be entered over a system-generated mask.

Example 11

command? dis

phase? 1/2? 1

prompt? y/n? n

cansim or databank? c

1. ? **p,7503,8012,1,s,1,1.1,1.4**

2. ? **p,7503,8012,1,s,1.6,ontario**

3. ? **p,*,*,4,r,2.1,2.10**

4. ? **p,8003,*,3,a,12**

5. ? **p,70,*,214,217,a**

6. ? **p,*,*,216,s,1,oper,2,depr**

7. ? **p,*,*,1,2,s,1.12**

8. ? **s,*,*,1,s,1.5**
passwrd

9. ?

immediate, priority, regular
or night service? i/p/r/n? r

request data number is 23

JOB EXECUTING

continue monitor? y/n? n

command? (CARRIAGE RETURN)

end of execution

*

*

Description of Requests by CANSIM Identifiers in Example 11

1 Retrieve, from the first quarter of 1975 to the last quarter of 1980, series 1, 1.1, and 1.4 from Matrix 1.

2 Retrieve, from the first quarter of 1975 to the last quarter of 1980, series 1.6 from Matrix 1, and rename this series "ONTARIO".

3 Retrieve, in their entirety, series 2.1 to 2.10 (inclusive) from Matrix 4.

4 Retrieve, from the first quarter of 1980 to the latest available datapoint, the first twelve series in Matrix 3.

5 Retrieve, from 1970 to the latest available datapoint, all series in matrices 214 through 217.

6 Retrieve, in their entirety, series 1 from Matrix 216, renaming it "OPER", as well as series 2, renaming it "DEPR".

7 Retrieve, in their entirety, series 1.12 in matrices 1 and 2.

8 Retrieve, in its entirety, series 1.5 from Matrix 1. For example purposes only, consider this a SECURE series for which a mask, on which a SECURITY PASSWORD must be entered, is printed immediately after the request string.

As seen in the first request string in Example 11, several single series can be specified on the same line if the security status and retrieval dates are the same for each. Note also that a request string is terminated by entering a CARRIAGE RETURN, after which a question mark will print. At this point, the user may proceed with another request string, or, by entering another CARRIAGE RETURN, end the entire retrieval specification process (Example 11, Line 9).

III.1.2.2 Phase 1 in NO PROMPT Mode: Retrieval by Databank Numbers

The format of a retrieval request string where Databank numbers are used is as follows:

1 SECURITY STATUS of the data:

'S' for SECURE data
'P' for PUBLIC data

(See the CANSIM Main Base Series Directory for the security status of series. If an 'S' is specified, a mask will print after a request string has been entered, and the user will be required to type, over this mask, the security password. See also page 12).

2 START DATE (see Page 12)

3 END DATE (see Page 12)

4 SERIES OPTION:

'R' for a RANGE of series
'S' for SPECIFIC series

5(a) FIRST SERIES of a range of series to be retrieved. This parameter is entered when the user indicates (in (4)) that a RANGE of series is to be retrieved.
5(b) LAST SERIES of the range of series that is to be retrieved.

or

5(a) A SPECIFIC series, denoted by its Databank number, to be entered if the user indicates (in (4)) that SPECIFIC series are to be retrieved.
5(b) Optionally, a RENAME for this series. (See Page 12).

6 A SECURITY PASSWORD, if series is designated SECURE (in (1)), to be entered over a system-generated mask.

Example 12

command?	**dis**
phase? 1/2?	**1**
prompt? y/n?	**n**
cansim or databank?	**d**

1. ? **p,7503,8012,s,d1,d2,d5**

2. ? **p,7503,8012,s,d7,ontario**

3. ? **p,*,*,r,d145,d154**

4. **? p,*,*,s,d201305,oper,d201345,depr**

5. **? s,*,*,s,d9**
passwrd

6. ?

immediate, priority, regular
or night service? i/p/r/n? **r**

request data number is 23

JOB EXECUTING

continue monitor? y/n? **n**

command? (CARRIAGE RETURN)

end of execution

*

*

Description of Requests by Databank Numbers in Example 12

1 Retrieve, from the first quarter of 1975 to the last quarter of 1980, series D1, D2, and D5.

2 Retrieve, from the first quarter of 1975 to the last quarter of 1980, series D7, and rename this series "ONTARIO".

3 Retrieve, in their entirety, series D145 through D154.

4 Retrieve, in entirety, series D201305, renaming it "OPER", as well as series D201345, renaming it "DEPR".

5 Retrieve, in entirety, series D9. For example purposes only, consider this a SECURE series for which a mask, on which a security password must be entered, is printed immediately after the request string.

As seen in the first request string in Example 12, several single series can be specified on the same line if the security status and retrieval dates are the same for each. Note also that a request string is terminated by entering a CARRIAGE RETURN, after which a question mark will print. At this point, the user may proceed with another request string, or, by entering another CARRIAGE RETURN, end the entire retrieval specification process (Example 12, Line 6).

III.1.2.3 Phase 1 in NO PROMPT Mode: The Repetition of Retrieval Request Parameters

Example 13

```
1(a) ? p,*,*,s,d1,d4,d6
 (b) ? , , , , d8,d10

2(a) ? p,*,*,1,s,1.1,1.3
 (b) ? , , , , , 1.8,1.10

3(a) ? p,*,*,r,d1,d4
 (b) ? , , , , d6,d10

4(a) ? p,*,*,1,r,1.1,1.3
 (b) ? , , , , , 1.5,1.7

5(a) ? p,*,*,3,r,1.1,1.1.11
 (b) ? , , , 4,r,2.1,2.3
```

In requests 1(a) and 1(b) of Example 13, the user wishes to retrieve Series D1, D4, D6, D8, and D10. Because all these series are PUBLIC, are to be retrieved in their entirety, and are identified specifically in the strings (as opposed to being identified implicity as part of a range of series), the user has been able to use commas in 1(b) to denote these retrieval parameters which are common to both lines.

In requests 2(a) and 2(b), the user wishes to retrieve series 1.1, 1.3, 1.8, and 1.10 from Matrix 1. Commas are used in 2(b) to denote that series 1.8 and 1.10 are PUBLIC, are to be retrieved in entirety, and are specific series in Matrix 1 - information that is all supplied in 2(a).

In requests 3(a) and 3(b), series D1 through D4 and D6 through D10 are to be retrieved in their entirety. In addition to the security status and retrieval period denoted by commas in 3(b), the fact that D6 and D10 constitute a RANGE of series can also be so indicated, because all of these parameters are supplied in 3(a).

In requests 4(a) and 4(b), two ranges of series in Matrix 1 are to be retrieved. Commas can be employed in 4(b) to denote five parameters in common with 4(a): security status, retrieval start and end dates, RANGE, and Matrix 1.

In requests 5(a) and 5(b), the user wishes to retrieve, in entirety, series 1.1 through 1.1.11 in Matrix 3, and series 2.1 through 2.3 in Matrix 4. In 5(b), commas can be employed only to denote the common security status and retrieval period for these two groups of series; while both groups constitute a RANGE of series, the 'R' must be entered in 5(b) because it follows a parameter that is not common to both strings - that is, the Matrix number. In other words, retrieval parameters common to a set of request strings but which follow those which are not in common, must be re-entered, and may not be replaced by commas.

III.1.2.4 Recurring CANSIM Retrieval Jobs: The Storage of Retrieval Request Strings in an APL Library

If a group of CANSIM series is to be retrieved on a regular basis, the CIS user may develop a set of retrieval request strings which, saved as a variable in his APL library, can be employed as Phase 1 input to a CANSIM retrieval job. The retrieval job is submitted, in NO PROMPT mode, by simply providing the variable name, as well as the name of the APL library in which it resides. Note that such retrieval request strings may be created only if the user's terminal has an APL character set.

Example 14

1. **)LOAD USERLIB**
   saved

2. **REQUEST ← 'P,7003,*,1,A'**

3. **)SAVE**

In Line 1 of Example 14, the user brings his already-created library "USERLIB" into his active workspace by using the APL command)LOAD. He then creates, in APL, a variable named "REQUEST" which consists of a request string in NO PROMPT mode (Example 14, Line 2). In the example, the retrieval is to encompass all series in Matrix 1 from the first quarter of 1970 to the latest available datapoint. Note that, in keeping with APL syntax, the retrieval expression is enclosed in single quotes ('). The user should refer to the APL manual "APL Language" - IBM GC26-3847-2, available from IBM, for information on the creation and utilization of APL libraries and variables.

Once the variable "REQUEST" has been defined, the user saves it in his APL library ("USERLIB") by entering the APL command)SAVE (Example 14, Line 3). In Example 15, this APL variable is employed in Phase 1 to create a CANSIM retrieval job.

Example 15

1. command? **dis**

2. phase? 1/2 ? **1**

3. prompt? y/n? **n**

4. cansim or databank? **c**

5. ? **=request;userlib**
   saved

6. ?

   immediate, priority, regular
   or night service? i/p/r/n? **r**

   request data number is 23

```
JOB EXECUTING
continue monitor?        y/n?          n

command?                               (CARRIAGE RETURN)

end of execution

*

*
```

Note (Example 15, Line 3) that NO PROMPT Mode must be used, and also (Example 15, Line 4) that the use of CANSIM identifiers must be indicated, since CANSIM identifiers were used when the APL variable "REQUEST" was created (see Example 14).

In Line 5 of Example 15, the user employs the APL variable as the request string. After entering an equal sign (=), the variable name is given ("REQUEST"), and this is followed by a semi-colon (;). Finally, the user enters the name of the APL library (USERLIB) in which the variable "REQUEST" is saved.

A question mark (Example 15, Line 6) allows the user to proceed with another request string, or to terminate the retrieval specification process.

Example 16

```
1.  command?                                   tab

2.  phase?  1/2?                               1

3.  prompt? y/n?                               n

4.  cansim or databank?                        c

5.  ? =req1 req2 req3 req4;userlib
      saved
    ? =req10 req11 req12;userlib
      saved

6.  ?

    immediate, priority, regular
    or night service?        i/p/r/n?          r

    request data number is . . . . . . . . . . . . . . . 23

    JOB EXECUTING

    continue monitor?        y/n?              n

    command?                                   (CARRIAGE RETURN)

    end of execution
```

In Part 5 of Example 16, we see that several different APL variables can be used as Phase 1 retrieval input. Further, if all the variables are saved in the same APL library, the library name need be specified only once in each request string.

III.2 PHASE 2: THE DISPLAY AND PROCESSING OF CANSIM RETRIEVAL OUTPUT

In Phase 1 of CIS, we have seen how CANSIM series retrieval jobs are developed and submitted; in Phase 2, the user is able to access the data file created by the retrieval job. In this regard, the file, formatted according to the specification (TABLE, DISPLAY, MANIPULATE, PT1, or SAP) chosen in Phase 1, will be printed directly at the user's terminal. Like Phase 1, Phase 2 of CIS involves an interactive dialogue - the user-supplied part of which provides the information required for file output. A NO PROMPT option is not offered in Phase 2.

III.2.1 The Automatic Transfer from Phase 1 to Phase 2

The automatic transfer to Phase 2 occurs when the retrieval job generated in Phase 1 has finished execution. Indication that a job has terminated is given in the form of a "job status" message, provided by the system when the user continues to monitor it in the last stage of Phase 1 (see Example 17, Lines 8-10).

Example 17

IN THIS EXAMPLE, SERIES RETRIEVED IN PHASE 1 USING THE TABLE COMMAND ARE OUTPUT IN PHASE 2. THE INTERACTIVE DIALOGUE, HOWEVER, WOULD BE EXACTLY THE SAME HAD THE DISPLAY COMMAND BEEN USED.

```
1.  command?                                        table

2.  phase?  1/2?                                    1

3.  prompt? y/n?                                    n

4.  cansim or databank?                             d

5.  ? p,8003,*,s,d1
    ? p,8003,*,s,d2
    ?

6.  immediate, priority, regular
    or night service?          i/p/r/n?             p

7.  request data number is . . . . . .              23

8.  JOB EXECUTING

9.  continue monitor?          y/n?                 y

10. JOB HAS FINISHED EXECUTION

11. page alignment?            y/n/?                y
:
:
    cansim data retrieval          date 81/12/21    page 1
000001 estimated population of canada, by province, quarterly, thousands of persons
    estimates for calendar quarterly periods, from jan. 1946. quarterly data relate to
    jan. 1, apr. 1, july 1, and oct. 1. for estimated population by province, as of june 1
    for years 1946 onwards, see matrix 60.
```

```
column 1        1               canada
column 2        1.1             newfoundland
:
:

cansim data retrieval  date 81/12/21          page 2

                ----column 1----        ----column 2----
date            persons         foot    persons         foot
yymmdd          thousands       note    thousands       note
800401          23887.8                 577.8
800701          23959.3                 580.5
801001          24026.5                 582.5
810101          24150.0                 584.5
*
*
```

12. want retrieval error messages? y/n? n

13. command? (CARRIAGE RETURN)

14. end of execution

```
*

*
```

In Line 11 of Example 17, the user is given the opportunity to align, at his terminal, each page of retrieval output - be it in the TABLE, DISPLAY, PT1, or SAP formats discussed at the beginning of Section III. This alignment option is not, however, provided when the MANIPULATE command has been used, because output generated by that command is, with the exception of the APL Reference Table, to be accessed through APL.

When a response of 'Y' is given to the page alignment prompt, two colons will print at the left side of the page, and the system will enter a "wait" state, allowing the user to move the carriage to the top of a new page. When the paper is so disposed, the printing of the output can be activated by pressing a CARRIAGE RETURN. When there is more than one page of output, two colons will print at the end of each page; the system re-enters the "wait" state, and the user may re-align the paper to a new page. Two asterisks will appear at the end of the last page of output, after which the prompt for error messages (Example 17, Line 12) will be given.

Finally, a COMMAND? prompt is printed (Example 17, Line 13), and the user may initiate another CIS retrieval command, or, by pressing a CARRIAGE RETURN, exit from the system.

Example 18

NOTE: THE USER HAS EMPLOYED THE MANIPULATE COMMAND TO RETRIEVE SERIES

1.	job executing		
2.	continue monitoring request?	y/n?	**y**
3.	JOB HAS FINISHED EXECUTION		
4.	group all series into a matrix?	y/n?	**y**
4(a)	enter matrix name		**name**
4(b)	data alignment?	y/n?	**y**
5.	want series headers?	y/n?	**y**
6.	want apl reference table?	y/n?	**n**
7.	want retrieval error messages?	y/n?	**n**
8.	command?		

In Line 3 of Example 18, the system informs the user that his job has completed execution, and Phase 2 is entered automatically. If series have been retrieved by the MANIPULATE command, an opportunity is given at the outset of Phase 2 to combine the data into a two dimensional array, or matrix (Example 18, Line 4). Each series retrieved would form a column of this matrix, and each year of data would form a row. If a response of 'Y' is given to the MATRIX? prompt, two ancillary prompts will be provided. The first of these enables the user to provide a name, consisting of up to 8 alphanumeric characters, for the matrix that is about to be created. (Example 18, Line 4(a)). The second question (Example 18, Line 4(b)) allows for the re-alignment of series in the matrix which may be of varying length so that, where required, starting and/or ending datapoint parameters will be assigned zero values. If a response of 'N' is given to this prompt, no such time alignment will be made.

The user is then asked the question "DO YOU WANT SERIES HEADERS?" (Example 18, Line 5). If data have been retrieved using the MANIPULATE command, an option is given, in Phase 2, of incorporating what are called SERIES HEADERS. These "stub" headers appear at the beginning of a series (which is now, because of the MANIPULATE Command, an APL variable), and contain such control information as the series Databank number, the start and end date (period and year), periodicity, and the prefix of the Databank number (for example, 'D', 'B', 'A', 'I'). Information contained in series headers can be of assistance in the implementation of user-supplied APL time series analysis routines.

If the MANIPULATE command was used in Phase 1, the user is given the opportunity to print the APL reference table created by the retrieval job (Example 18, Line 6). This reference table will comprise, for each series retrieved, the series name (that is, the Databank number, unless a rename was employed), frequency, retrieval reference period, and the number of datapoints accessed. Titles and footnotes are not, however, printed (see Page 7).

The user is then given the option to list any retrieval error messages which may have been generated by the system.

Finally (Example 18, Line 8), a COMMAND? prompt is provided, and the user may, by pressing a CARRIAGE RETURN, exit from CIS and, in APL, access the matrix created by the series retrieved. Note that if the user chose not to group the retrieved data into a matrix, each series would be identified in APL by either its Databank number or its RENAME.

Example 19

IN THIS EXAMPLE, SERIES OF VARYING LENGTHS ARE RETRIEVED BY THE MANIPULATE COMMAND IN PHASE 1; IN PHASE 2, THE RETRIEVED DATA ARE USED TO CREATE A MATRIX "POPUL". BECAUSE THE SERIES DO NOT HAVE IDENTICAL SAMPLE PERIODS, DATA ALIGNMENT IS USED. AFTER EXIT FROM PHASE 2, THE MATRIX "POPUL" IS DISPLAYED, AS A SINGLE VARIABLE, IN APL.

1.	command?	**manipulate**
2.	phase? 1/2?	**1**
3.	prompt? y/n?	**n**
4.	do you want zero as replacement values? y/n?	**y**
5.	cansim or databank?	**d**
6.	**? p,7503,7812,s,d1** **? p,7603,7812,s,d2** **? p,7703,7712,s,d3** ?	
7.	immediate, priority, regular or night service? i/p/r/n?	**p**
8.	request data number is	23
9.	JOB EXECUTING	
10.	continue monitor? y/n?	**y**
11.	JOB HAS FINISHED EXECUTION	
12.	group all series into a matrix? y/n?	**y**
13.	enter matrix name:	**popul**
14.	data alignment? y/n?	**y**
15.	want series headers? y/n?	**n**
16.	want apl reference table? y/n?	**y**

cansim apl reference table

series	start date	end date	no. datapoints	frequency
d1	750400	781000	15	quarterly
d2	760400	781000	11	quarterly
d3	770400	771000	3	quarterly

start dates not all same; some series prefixed with zeroes
end dates not all same; some series suffixed with zeroes

17. want retrieval error messages? y/n? n

18. command? (CARRIAGE RETURN)

19. end of execution

*

*

popul		
22639.39999	0	0
22726.89999	0	0
22815.69999	0	0
22883.89999	0	0
22946.29999	556.099999	0
23025	558.5	0
23097.79999	560.5	0
23157.89999	561.899999	0
23125	563	119.899999
23280.29999	564.599999	120.399999
23341	566.199999	121.099999
23390.29999	567.599999	0
23437.09999	568.099999	0
23493.19999	569.399999	0
23543.79999	570.799999	0

Example 20(A)

IN THIS EXAMPLE, THE 'SAP' COMMAND IS USED TO OBTAIN A SELECTION OF PRE-FORMATTED REPORTS FOR SERIES RETRIEVED IN PHASE 1.

command? **sap**
phase? 1/2? **1**
prompt? y/n? **n**
cansim or databank? c/d? **d**
? **p,7904,*,s,d1**
?
immediate, priority, regular or
night service? i/p/r/n? **i**
please do not hit break while retrieval is proceeding
want apl reference table? y/n? **y**

cansim apl data reference table

series	start date	end date	no. datapoints	frequency
d1	790400	811000	11	quarterly

want retrieval error messages? y/n? **y**

do you want list of table formats? y/n? **n**
indicate table format(s) wanted or press c.r. to end: **11 13**
page alignment? y/n? **n**
enter (optional) title for report
? **population**
?

cansim s.a.p. 11 82-jan-15
population

item	reference period	data for reference period	pct change from prev period	pct change /same per last year
d1	81-q4	24281.1	.28	1.06

cansim s.a.p. 13 82-jan-15

population

item	reference period	data for reference period	data for same per last year	pct change /same per last year
d1	81-q4	24281.1	24026.5	1.06

indicate table format(s) wanted or c.r. to end: (CARRIAGE RETURN)

do you wish to keep data for further processing? y/n? **y**

print/manipulate? p/m? **p**
number of decimals for output? 0/1/2? **1**
enter descriptive table heading (cr to end):

? **population**
?
align paper and press 'return' (CARRIAGE RETURN)

population

	quarter 1	quarter 2	quarter 3	quarter 4
d1				
1979...		23642.1	23701.4	23763.6
1980...	23827.1	23887.8	23959.3	24026.5
1981...	24091.1	24150.0	24213.0	24281.1

```
do you want to keep data for further processing?      y/n?      y
standard analyses/manipulate? m
group all series into a matrix?    y/n?          n
want series headers?               y/n?          n
want apl reference table?          y/n?          n

command?                                         (CARRIAGE RETURN)
end of execution
*
*
          d1
      23642.09999 ..... et cetera
```

Example 20(B)

IN THIS EXAMPLE, THE BLD OPTION IS USED TO OBTAIN A SELECTION OF USER-FORMATTED REPORTS FOR SERIES RETRIEVED IN PHASE 1.

```
command?                                          sap
phase?    1/2?                                    2
request data number?                              28
want apl reference table?          y/n?           n
want retrieval error messages?     y/n?           y

do you want list of table formats?  y/n?          n

indicate table format(s) wanted or c.r. to end:   bld
do you want list of available functions?  y/n?    n
your s.a.p. format will be no. 19
indicate functions forming the new format by entering function
numbers in the order you want them
func. nos:                                        1 2 3 24
format 19 defined

indicate table format(s) wanted or c.r. to end:   19
page alignment?          y/n?                     n
enter (optional) title for report
?      labour force
?

CANSIM S.A.P. 19      83-MAR-3

          labour force

item      reference   data for    data for    data for    data for
          period      reference   previous    same per    start
                      period      period      last year   period
-------------------------------------------------------------------

D767285   83-jan      11656       11743       11509       9523

indicate table format(s) wanted or c.r. to end:  (CARRIAGE RETURN)

do you wish to keep data for further processing?  y/n?        n

command?
```

III.2.2 Direct Entry to Phase 2

As an alternative to waiting, on-line, for the completion of a retrieval job in order to obtain the automatic transfer to Phase 2, the user may enter Phase 2 himself at the initial stage of a CIS session by responding with a '2' to the PHASE? prompt (Example 21, Line 2). In this case, the user must first employ the same command as that used in Phase 1 to create the retrieval job itself. If, for example, a retrieval in MANIPULATE format was submitted in Phase 1, the MANIPULATE command must also be used just prior to invoking Phase 2 (Example 21, Line 1).

When Phase 2 is entered, a prompt for the REQUEST DATA NUMBER, discussed in Example 5, is given (Example 21, Line 3). As we have seen, this number, printed at the end of Phase 1, serves to identify the output file resulting from the retrieval job that was submitted. If the job has not yet completed execution, the system will indicate that this is so (Example 21, Line 4). When the job has been completed, the output identified by the file number will, in the format specified by the user in Phase 1, be printed directly at the terminal. After the file has printed, the interactive dialogue is identical to that when Phase 2 was entered automatically (see Section III.2.1).

Example 21

IN THIS EXAMPLE, PHASE 2 IS ENTERED TO ACCESS A RETRIEVAL FILE THAT HAS BEEN IDENTIFIED (IN PHASE 1) BY THE NUMBER '58'. IN PHASE 1, THE USER EMPLOYED THE "MANIPULATE" COMMAND, SO, HERE TOO, "MANIPULATE" MUST BE SPECIFIED.

1.	command?	**manipulate**
2.	phase? 1/2?	**2**
3.	request data number?	**58**
4.	58: NOT FINISHED	
5.	command?	**manipulate**
6.	phase? 1/2?	**2**
7.	request data number?	**58**
8.	group all series into a matrix? y/n?	**y**
9.	enter matrix name:	**popul**
10.	data alignment? y/n?	**y**
11.	want series headers? y/n?	**n**
12.	want apl reference table? y/n?	**y**

cansim apl reference table

series	start date	end date	no. datapoints	frequency
d1	750400	781000	15	quarterly
d2	760400	781000	11	quarterly
d3	770400	771000	3	quarterly

start dates not all same; some series prefixed with zeroes
end dates not all same; some series suffixed with zeroes

13. want retrieval error messages? y/n? **n**

14. command? (CARRIAGE RETURN)

15. end of execution

*

*

popul		
22639.39999	0	0
22726.89999	0	0
22815.69999	0	0
22883.89999	0	0
22946.29999	556.099999	0
23025	558.5	0
23097.79999	560.5	0
23157.89999	561.899999	0
23125	563	119.899999
23280.29999	564.599999	120.399999
23341	566.199999	121.099999
23390.29999	567.599999	0
23437.09999	568.099999	0
23493.19999	569.399999	0
23543.79999	570.799999	0

Example 22

IN THIS EXAMPLE, SERIES RETRIEVED IN PHASE 1 USING THE TABLE COMMAND ARE OUTPUT IN PHASE 2. THE INTERACTIVE DIALOGUE, HOWEVER, WOULD BE EXACTLY THE SAME HAD THE DISPLAY COMMAND BEEN USED.

1. command? **table**

2. phase? 1/2? **2**

3. request data number? **59**

4. 59: NOT FINISHED

5. command? **table**

6. phase? 1/2? **2**

7. request data number? **59**

8. page alignment? y/n? **y**

:
:

cansim data retrieval date 81/12/21 page 1

000001 estimated population of canada, by province, quarterly, thousands of persons
estimates for calendar quarterly periods, from jan. 1946.
quarterly data relate to jan. 1, apr. 1, july 1 and oct. 1. for estimated population by province, as of june 1 for years 1946 onwards, see matrix 60.

column 1	1	canada
column 2	1.1	newfoundland

:
:

cansim data retrieval date 81/12/21 page 2

	-----column 1 -----		-----column 2-----	
date	persons	foot	persons	foot
yymmdd	thousands	note	thousands	note
800401	23887.8		577.8	
800701	23959.3		580.5	
801001	24026.5		582.5	
810101	24150.0		584.5	

*
*

9. want retrieval error messages? y/n? n

10. command? (CARRIAGE RETURN)

11. end of execution

*

*

Example 23

IN THIS EXAMPLE, SERIES RETRIEVED IN PHASE 1 BY THE PT1 COMMAND ARE OUTPUT IN PHASE 2.

command? **pt1**
phase? 1/2? **2**
request data number? **76**
want apl reference table? y/n? **n**
want retrieval error messages? y/n? **n**
number of decimals for output? 0/1/2? **1**
enter descriptive table heading (c.r. to end):
? **title**
?
align paper and press 'return' (CARRIAGE RETURN)

title

	quarter 1	quarter 2	quarter 3	quarter 4
d1				
1976...		22946.3	23025.0	23097.8
1977...	23157.9	23215.0	23280.3	23341.0
d2				
1976...		556.1	558.5	560.5
1977...	561.9	563.0	564.6	566.2

do you want to keep data for further processing? y/n? n

command?

The table format generated by the PT1 command cannot be altered by the user; note, however, that he may specify the number of decimal places which are to appear in each table. As well, an opportunity is given to provide table headings.

Once printed, data retrieved by the PT1 command can be maintained for further processing through APL or through a Standard Analysis Program.

IV. THE BATCH COMMAND

In Section III, we have seen that CIS allows the user to submit and display CANSIM retrievals directly at a low-speed typewriter terminal. The system also has the capability of generating output on a high-speed printer. The BATCH command, useful if large requests are involved, permits the user to formulate and submit retrieval jobs at his remote terminal in the same way as the other retrieval commands, but this time, the resulting output will be printed on a designated remote printer.

The BATCH command accomodates output in TABLE, DISPLAY, or MANIPULATE format; as well, two further options are available: UTILITY format and DATABANK format. Both of these options involve the writing of the retrieval output on to tape or disk in formats pre-designed for further access and/or manipulation. A description of the record layouts and possible applications of UTILITY or DATABANK output files can be obtained from the "CANSIM User's Manual for Data Retrieval and Manipulation".

The BATCH command, then, is somewhat different from the retrieval commands discussed in Section III. While the command does not have Phase 1 or Phase 2 components, the interactive dialogue involved in the formulation of retrieval jobs is very much like that of the other commands, and, in this regard, a NO PROMPT Mode can still be invoked. Once a retrieval job has been submitted with the BATCH command, however, it is not possible to monitor, in CIS, its execution in the system.

IV.1 THE BATCH COMMAND: RETRIEVAL IN TABLE OR DISPLAY FORMAT

Example 24

1.	command?	**batch**
2.	prompt? y/n?	**y**
3.	tab/dis/uti/dbnk/man? t/d/u/b/m?	**tab**
4.	cansim or databank? c/d?	**d**
5.	range? y/n?	**n**
6.	databank no.?	**d1**
7.	rename?	
8.	security word?	XXXXXXX
9.	start date?	*
10.	end date?	*
11.	more? y/n?	**n**
12.	priority, regular or night service? p/r/n?	**r**
13.	remote for print (return for central site):	
14.	multiple copies? y/n?	**y**
14(a)	no. of copies? 1-9?	**2**
15.	command?	(CARRIAGE RETURN)
	end of execution	
	*	
	*	

In lines 1-3 of Example 24, the user specifies that he wishes to employ, with prompts, the BATCH command to obtain a CANSIM retrieval in TABLE format. After indicating the service level to be assigned the retrieval job (Example 24, Line 12), he is prompted (Example 24, Line 13) for the remote number (designated by the host bureau of which the user is a client) of the high-speed printer on which the output is to be printed. If a CARRIAGE RETURN is entered here, the output will be printed at the central computer installation site of the host service bureau.

When routing output to a high-speed printer, the user is offered the option of obtaining multiple copies of this output (Example 24, Line 14). If a response of 'Y' is given to the MULTIPLE COPIES? question, the user may then request the printing of up to 9 copies (Example 24, Line 14(a); if a response of 'N' is given to the MULTIPLE COPIES? question, this ancillary prompt will not be given.

At this point, the CANSIM retrieval job is automatically submitted, and a COMMAND? prompt is given, permitting the user to exit from CIS or to begin another retrieval request (Example 24, Line 15).

Example 25

IN THIS EXAMPLE, NO PROMPT MODE IS EMPLOYED WITH THE BATCH COMMAND TO RETRIEVE IN DISPLAY FORMAT.

1.	command?	**batch**
2.	prompt? y/n?	n
3.	tab/dis/uti/dbnk/man? t/d/u/b/m?	**dis**
4.	cansim or databank? c/d?	**d**
5.	? **p,*,*,s,d1,d2,d4** ?	
6.	priority, regular or night service? p/r/n?	**r**
7.	remote for print (return for central site):	
8.	multiple copies? y/n?	**n**
9.	command?	(CARRIAGE RETURN)
	end of execution	
	*	
	*	

IV.2 THE BATCH COMMAND: RETRIEVAL IN MANIPULATE FORMAT

The user may employ the BATCH command to retrieve series in MANIPULATE format, creating a disk file of the retrieved data for subsequent access in APL. In this regard, the APL cross-reference table of the series can be printed only when the user loads an APL workspace called "APLFILE"; this process replaces the Phase 2 component of the MANIPULATE command described in Examples 18 and 19.

Example 26

1.	command?	**batch**
2.	prompt? y/n?	**n**
3.	tab/dis/uti/dbnk/man? t/d/u/b/m?	**man**
4.	dataset name?	**stcxxa.filename**
5.	cansim or databank? c/d?	**d**
6.	do you want zero as replacement values? y/n?	**n**
7.	? **p,7503,7812,s,d1** ? **p,7603,7812,s,d2** ?	
8.	priority, regular or night service? p/r/n?	**r**
9.	remote for print (return for central site):	
10.	multiple copies? y/n?	**n**
11.	command?	

In Line 4, of Example 26, the user, having specified that he wishes to retrieve data in MANIPULATE format, is prompted for the "dataset" name to be assigned the output file. In this example, a naming convention specific to the current supplier is employed.

As in the case where the MANIPULATE command is employed in CIS, the use of the BATCH command to retrieve in MANIPULATE format affords the opportunity to provide special replacement values for SECURE and NOT AVAILABLE datapoints (Example 26, Line 6). If a CARRIAGE RETURN is entered in response to the prompt, no replacement values will be generated, and the system will proceed with the next prompt. A response of 'Y', however, will result in the generation of 0 (zero) values for all datapoints not available to the user. A response of 'N', on the other hand, will provide the user with two replacement values: '-72E+72' for SECURE datapoints, and '+72E+72' for NOT AVAILABLE datapoints.

After this prompt for replacement values, the interactive dialogue leading to automatic job submission is identical to that where the DISPLAY or TABLE formats are specified for BATCH retrieval (see Section IV.1).

When the BATCH job has finished execution, the output dataset, created in MANIPULATE format, may be accessed in APL by loading a self-starting workspace named "APLFILE":

Example 27

1. **)LOAD 6070 APLFILE**
   saved 16:13:45 06/22/21
   wssize is 359696

2. english/français? e/f? **e**

3. command? **manipulate**

4. series headers? y/n? **y**

5. d.s.n.? **stcxxa.filename**

6. do you wish to group all series into a matrix? y/n? **n**

7. do you want apl data reference table? y/n? **y**

cansim apl reference table

series	start date	end date	no. datapoints	frequency
d1	750400	781000	15	quarterly
d2	760400	781000	11	quarterly

start dates not all same; some series prefixed with zeroes
end dates not all same; some series suffixed with zeroes

8. command?

The workspace, once loaded, simulates Phase 2 of the MANIPULATE command by prompting the user (Example 27, Line 3) for the retrieval format established when the BATCH command was employed (Example 26, Line 3). As well, an opportunity is given here to create series headers for the retrieved data (Example 27, Line 4). The user is then prompted (Example 27, Line 5) for the name of the output file as specified when the retrieval request was being formulated (Example 26, Line 4). Then, from this point, the retrieval output procedure is identical to the standard Phase 2 process described in Example 18. Note, however, that no option is given for the printing of retrieval error messages; such messages would have been listed on the printout generated by the BATCH retrieval.

IV.3 THE BATCH COMMAND: RETRIEVAL IN UTILITY FORMAT

BATCH retrieval in UTILITY format enables the user to store retrieval output on tape or disk; the file is then available for future access. Details about the record layout and possible applications of UTILITY output files can be obtained from the "CANSIM User's Manual for Data Retrieval and Manipulation".

Before a UTILITY tape or disk file is actually created by CIS, it is necessary to define (according to the software requirements of the computer installation being used) its distinguishing characteristics (record length, block size, etc.). In this regard, CIS invokes a catalogued procedure to supply most of the parameters that are required; the user need provide only a file name, and an indication of the storage medium for the retrieval output - information for which he is prompted when the UTILITY option is specified.

Example 28

1. command? **batch**

2. prompt? y/n? **n**

3. tab/dis/uti/dbnk/man? t/d/u/b/m? **utility**

4. dataset name? **stcxx.name**

5. data to be written on tape or disk? t/d? **d**
5(a) max. no. of series to be retrieved? **1000**

6. volume serial no.?

7. cansim or databank? c/d? **d**

8. do you want zero as replacement value? y/n **n**

9. option replacement value

1	+72e+72
2	+5.4e-78
3	-72e+72
4	-5.4e-78
5	+1e-01
6	-.9999999e+07

10. enter option: **2 4**

11. ? p,*,*,s,d1,d2,d4
?

12. priority, regular or night service? p/r/n? **r**

13. remote for print (return for central site):

14. multiple copies? y/n n

15. command? (CARRIAGE RETURN)

end of execution

*

*

In Line 4 of Example 28, the user, having specified UTILITY format for his output, is asked to provide a "dataset" name for the file that is going to be created. In this example, a naming convention specific to the current supplier is employed. Then, a prompt is given (Example 28, Line 5) for the storage medium of the file. If the user indicates that he wishes to write his retrieval output on disk, he is immediately prompted (Example 28, Line 5(a)) to specify, if he wishes, a limit on the number of series to be retrieved - a safeguard against the exceeding of space limitations which may exist on the disk. This "series limit" prompt is provided only when output on disk is specified.

A prompt for the volume identification of the tape or disk is then given (Example 28, Line 6). A CARRIAGE RETURN here will normally result in the use of one of the service bureau's own tapes or diskpacks - the identification of which will be provided on the ensuing printout.

After specifying his choice of CANSIM or DATABANK series identifiers (Example 28, Line 7), the user is given the opportunity to replace with zero values those datapoints in a series which cannot be accessed (Example 28, Line 8). If a response of 'Y' is given this prompt, datapoints that are SECURE or NOT AVAILABLE will be assigned zero values; if a response of 'N' (or a CARRIAGE RETURN) is given, a table of six optional replacement values will be printed (Example 28, Line 9). Accompanying this table will be a prompt for the option(s) selected (Example 28, Line 10). Here, option numbers are separated by blanks or commas. The first option number entered will refer to the replacement value for NOT AVAILABLE datapoints, while the second number will refer to the replacement value for SECURE datapoints.

From this point, the interactive dialogue leading to the submission of the retrieval job is identical to that where the BATCH command is used in conjunction with TABLE, DISPLAY, or MANIPULATE format.

IV.4 THE BATCH COMMAND: RETRIEVAL IN DATABANK FORMAT

Series retrieved by the BATCH command in DATABANK format can be used with two manipulative programs available to the CANSIM user: the DATABANK Program and the MASSAGER Program. The DATABANK Program is designed to maintain files containing large numbers of time series, allowing for the addition, deletion, or editing of the data. The series can also be listed, indexed, or copied onto other tapes or disks. The MASSAGER Program is designed for the manipulation of data; retrieved series are arrayed as columns in core storage, and, by a sequence of MASSAGER "operations", are manipulated or statistically analysed.

Both the DATABANK and MASSAGER Programs accept input on tape or disk. A description of the DATABANK format of this input can be obtained from the "CANSIM User's Manual for Data Retrieval and Manipulation".

Example 29

1. command?	**batch**
2. prompt? y/n?	**n**
3. tab/dis/uti/dbnk/man? t/d/u/b/m?	**b**
4. dataset name?	**stcxxl.name**
5. data to be written on tape or disk? t/d?	**d**
5(a) max. no. of series to be retrieved?	**1000**
6. volume serial no.?	
7. single/double precision? s/d	**d**
8. cansim or databank? c/d?	**d**
9. do you want zero as replacement value? y/n?	**n**

10. option replacement value

1	+72e72
2	+5.4e-78
3	-72e+72
4	-5.4e-78
5	+1e-01
6	-.9999999e+07

11. enter option: **2 4**

12. ? p,*,*,s,d1,d2,d4
    ?

13. priority, regular or night service? p/r/n? **r**

14. remote for print (return for central site):

15. multiple copies? y/n? n

16. command? (CARRIAGE RETURN)

end of execution

*

*

As seen in Example 29, the interactive dialogue in developing a retrieval in DATABANK format is almost identical to that where output in UTILITY format is requested (see Example 28). Information about the dataset that is about to be created is requested, and the user has the same choice of replacement values. One further prompt however, given specifically in conjunction with the use of DATABANK format, allows the user to choose single precision or double precision values for the retrieved data (Example 29, Line 7). Double precision data is written in exponential form (see the replacement values in Example 29, Line 10), and is commonly specified for very large or very small numbers as a safeguard against rounding errors.

V. ELECTRONIC FACT SHEET RETRIEVAL COMMANDS

As changes to the actual Database have been required to accommodate broad groups of statistical users, so too have increased capabilities within the interactive retrieval system been necessary to meet the needs of this CANSIM constituency. One aspect of this development has been the incorporation of commands to access, in an interactive process, a selection of data and/or text files relating to specific socio-economic statistics. These "electronic fact sheets" can be displayed directly at the user's typewriter terminal, or they may, for the most part, be printed on a high-speed remote printer. While data obtained in CIS by these commands cannot be manipulated directly, some choice in the formulation of the retrieval output is, in most cases, provided.

Most of the electronic fact sheet commands in CIS offer BATCH or terminal retrieval with the question

DO YOU WANT ALL THE TABLES BY A BATCH JOB? Y/N?

If a table is to be printed directly on a low-speed remote terminal, a response of 'N' is given the question, and the page alignment feature (see Page 31) will be offered before the actual printing of the text. If a BATCH job is to be submitted, the user responds with a 'Y' to the question, and prompts for the service level, the remote number of the high-speed printer to be used, and the choice of multi-copy output will be given prior to job submission.

Many of the electronic fact sheet commands provide access to a selection of tables which pertain to a particular subject. When direct printing on a typewriter terminal is specified, the user is generally given an option to obtain a listing of the table titles that are available, and then, to select those he wishes to print. When a BATCH retrieval is requested, all the tables which can be accessed by a given command are output.

The TLIST command generates a listing of all electronic fact sheet commands in the system:

command? **tlist**

s p e c i a l p u r p o s e t a b l e s i n c i s

command	number of tables	batch option	description
agr	--	yes	selective agricultural statistics
its	5	yes	international travel data
gnp	23	yes	national income and expenditure accounts
cea	12	yes	current economic analysis tables
cen	--	yes	availability of '76 census data
lfs	11	yes	labour force survey tables
cpi	1	yes	analysis, cpi, canada and regions

eem	11	yes	statistics on electrical products manufacturing
dat	1	yes	monthly schedule for release of key economic data
ffl	1	yes	financial market summary table
daily	--	no	statistics canada daily bulletin
press	8	yes	press releases

The HELP command provides a listing of all the data retrieval and manipulation commands available in CIS. (See Appendix 1.)

V.1 AGRICULTURE: The AGR Comand

The AGR command offers the CIS user selected tables containing various agricultural statistics. There are currently eight types of tables: PIGS, FCR (Farm Cash Receipts), CAT (cattle), FCRS (Field Crop Reporting Series), APP (apples), FIP (income of farm operators), DRY (dairy), and POT (potatoes). An opportunity is given, at the outset, to obtain a complete index of the tables, within each type, that are available.

In the process of specifying his tabulation requests, the user is first prompted to indicate the table type(s) desired, and, if the output is to be displayed directly at the typewriter terminal, for the table numbers within these types. If a BATCH job is to be submitted, all the tables within the specified table type will be accessed.

```
command?                                              agr

do you want table titles? y/n?                        n
do you want page alignment? y/n?                      n
enter table type(s) or RETURN                         fip
do you want all the tables by a batch job?    y/n?    y
priority, regular or night
service? p/r/n?                                       r
remote for print? (c.r. for central)
number of copies? 1-9?                                1
JOB SUBMITTED
```

V.2 CURRENT ECONOMIC ANALYSIS: The CEA Command

The CEA command permits the user to access twelve statistical tables which present, as key economic indicators, source and computed data from the CANSIM Database. Revised as soon as affected data are updated on the Database, each table contains five years of annual data and two years of monthly or quarterly data.

When the CEA command is used, an option to print out an index of the tables is given, after which the user may select those he wishes to access.

```
command?                                              cea
do you want all the tables by a batch job?  y/n?      n
do you want table title?  y/n?                        n
do you want page alignment?  y/n?                     n
enter tables wanted or RETURN                         1 2
```

*** the tables will start to print at the terminal ***

V.3 CENSUS: The CEN Command

The CENSUS command provides information about the 1981 Census.

command? **census**

The CENSUS user summary tapes for the 1981 Census of Population and Housing will be released on a weekly basis until January 1983. Commencing in March, 1983, the 20-percent sample for data for population and housing will be released on a weekly basis. These computer tapes provide data in greater detail than a publication can offer. For example, some tapes include detailed Census information such as population counts by exact age instead of age groupings. Other tapes include cross-tabulation or data for small areas like enumeration areas, containing about 200 households each.

Each complete tape will be available at a cost of 150 dollars. A charge of 75 dollars will apply to any file on one region or province.

output by a batch job? y/n **n**

nov. 5 sdf 8 a 21 population in private households by census family status and age of children and non-family persons (20), showing sex and marital status (11).

.

.

.

.

.

etc.

V.4 CONSUMER PRICES: The CPI Command

The CPI command generates for the CIS user a text file which delineates movements in the Consumer Price Index. Updated on a monthly basis, highlights of the CPI are provided for both Canada and major cities in Canada.

```
command?                                              cpi
do you want all the tables by a batch job? y/n?       y
priority, regular, or night
service? p/r/n?                                       r
remote for print? (c.r. for central)
number of copies? 1-9?                                7
JOB SUBMITTED
```

V.5 THE ELECTRICAL AND ELECTRONIC MANUFACTURERS ASSOCIATION: The EEM Command

The EEM command provides interactive access to eleven statistical tables which relate to the manufacture of electrical and electronic products. The first ten tables contain period-to-period percentage change for five years of annual data and two years of monthly data. The eleventh table delineates the ten most important commodities by dollar value.

```
command?                                          eem
do you want all the tables by a batch job? y/n?   n
do you want table titles? y/n?                    n
do you want page alignment? y/n?                  n
enter tables wanted or RETURN                     11

    *** the table will start to print at the terminal ***
```

V.6 FINANCIAL FLOWS: The FFL Command

The FFL command enables the user to obtain the "Financial Market Summary" table of the financial flows accounts; this table is contained in the publication "Financial Flow Accounts" (Catalogue No. 13-002). The table contains quarterly data for the period 1962 to the present, and the user is able to specify which year(s) of data he wishes.

```
command?                                          ffl
financial market summary table from 1962 available.
do you want the table by a batch job? y/n?        n
data available from 1962 to 1983
enter dates wanted (yyyy or yyyy-yyyy):           1981
do you want page alignment? y/n                   n
```

*** the table will start to print at the terminal ***

V.7 GROSS NATIONAL PRODUCT: The GNP Command

The GNP command permits interactive access to a selection of tables from the quarterly publication "National Income and Expenditure Accounts" (Catalogue No. 13-001). The user may also through the PRESS command, obtain a commentary on the Gross National Product and its components for the current period (see V.10).

```
command?                                                    gnp
do you want all the tables by a batch job?  y/n?            n
do you want table titles?  y/n?                             n
do you want page alignment?  y/n?                           n
data available for 82-83 which do you want?  (yy or yy-yy)  80
enter tables wanted or RETURN                               19 20 21

     *** the tables will start to print at the terminal ***

command?                                                    gnp
do you want all the tables by a batch job?  y/n?            y
priority, regular or night
service?  p/r/n?                                            p
remote for print? (c.r. for central)
number of copies?  1-9?                                     5
JOB SUBMITTED
```

V.8 INTERNATIONAL TRAVEL: The ITS Command

Selected tables of international travel data are available with the ITS command. The tables contain 5 years of annual data and 2 years of monthly data, and are updated when the pertinent series are updated on the Database. With the ITS command, the user may obtain a directory of the tables that are available and to select those he wishes to access.

```
command?                                                    its
do you want all the tables by a batch job?  y/n?            n
do you want tables  y/n?                                    y

                table of contents

table       title

  1         receipts and payments on travel account (millions of dollars)

  2         residents of the united states and other countries entering canada
            (figures in thousands)

  3         canadian residents returning from the u.s. and other countries (figures in
            thousands)

  4         selected categories of international travellers entering or returning to
            canada (figures in thousands)

  5         selected categories of international travellers entering or returning
            (percentage change from same month of previous year)

do you want page alignment?  y/n?                           n
enter tables wanted or RETURN                               5
```

*** the table will start to print at the terminal ***

V.9 LABOUR FORCE SURVEY: The LFS Command

Interactive access to eleven tables of Labour Force Survey data is available to the CIS user; for each of these tables, the most recent survey period data are provided. The LFS Command, invoked to access any or all of the eleven tables, permits the user to obtain an index of the material, and to select the table(s) he wishes to retrieve.

```
command?                                                    lfs
one set of tables is available
lfs: 11 tables showing current month highlights
do you want all the tables by a batch job? y/n?             n
do you want table titles? y/n?                              n
do you want page alignment? y/n?                            n

enter tables wanted or RETURN                               1 2 3 4

     *** the tables will start to print at the terminal ***
```

The user may also obtain a commentary on current Labour Force Survey data through the PRESS command (see V.10).

V.10 PRESS RELEASES: The PRESS Command

The PRESS command offers access to the most current commentaries or press releases, issued by Statistics Canada, for eight blocks of data: The Consumer Price Index, Gross National Product, the Labour Force Survey, the Canadian Leading Economic Indicator, current economic analysis, a highlight table of the Canadian GNP, the Canadian Balance of Payments, and statistical highlights of the most recent week. These text files are updated when the pertinent blocks of data are updated on the Database.

```
command?                                        press
press releases are available for:
(cpi) consumer price index
(lfs) labour force survey
(gnp) gross national product
(cli) canadian leading indicator
(cea) current economic analysis
(gnt) gross national product highlight table
(bop) balance of payments

which one(s) do you want?                       cpi
output by a batch job? y/n?                     y
priority, regular or night
service? p/r/n?                                 r
remote for print? (c.r. for central)
number of copies? 1-9?                          9
JOB SUBMITTED
```

V.11 The "STATISTICS CANADA DAILY": The DAILY Command

The "Statistics Canada Daily" reports the official release of Statistics Canada publications, or the availability of data derived from surveys conducted by the agency. The front page of the "Daily" contains a summary of the publications released on a specific day, and the CIS user has access to a facsimile of this page by invoking the DAILY command. If any of the data noted in the "Daily" are available in machine-readable form from CANSIM, appropriate matrix numbers and/or CANSIM Cross-Classified table numbers will also be included in the CIS output.

Use of the DAILY command requires entry of the name of the day (MONDAY - FRIDAY) for the desired "Daily" publication. (Front page texts for a full week are always available). In the following example, text from the "Daily" of Wednesday, January 13, 1982, was accessed:

command? **dai**

daily for which day? **wednesday**

statistics canada daily for wednesday, january 13, 1982 contents

summary of net shipments of rolled steel products, november, 1981 particleboard and wafeboard, november 1981

publications released

54-004 international vessel traffic statistics, second quarter, 1980
87-610 culture statistics, performing arts, 1979

command?

V.12 KEY DATA RELEASE SCHEDULES: The DATE Command

Another feature of the "Statistics Canada Daily" is the monthly presentation of the release schedule, for the coming month, of key economic time series. CIS users, through the DATE command, have access to this item, as well as a timetable for the current year of the release of selected economic indicators.

The command may be invoked for terminal display:

command? **dat**

do you want all output by a batch job? y/n? **n**
tentative release dates for the current month as well as schedule for the current year are available for the following selected economic indicators:

1. current month's release dates of key economic series

1983 Release Dates for:

2. consumer price index (cpi)
3. labour force survey (lfs)
4. preliminary statement of canadian trade
5. canadian composite leading indicator
6. gross national product (gnp)
7. balance of international payments
8. gross domestic product (gdp)
9. industrial production
10. manufacturing shipments, inventories and orders
11. building permits
12. retail trade

enter selection(s):

The command may also be implemented in BATCH mode, in which case the standard CIS output prompts will be generated.

VI. ADMINISTRATIVE/INFORMATION COMMANDS

In addition to the special text/table information retrieval commands described in Section V, CIS also contains a group of commands which serve to notify the user of any changes in the content of the CANSIM Main Base. As well, commands have been incorporated into the system to enable the user to monitor CANSIM retrieval jobs, and to delete unwanted output files resulting from them.

VI.1 Series Directory Retrieval: The DIR Command

The DIR command allows the user to produce a Series Directory for selected matrices. It has Phase 1 and Phase 2 components. Phase 1 is used to specify the matrices which are to be retrieved in Series Directory format, while Phase 2 is invoked when the directory is to be displayed at the user's terminal.

```
command?                                        dir
phase? 1/2?                                     1
batch output? y/n?                              n
enter matrix number(s) required (c.r. to end)
?    10
?
immediate, priority, regular
or night service? i/p/r/n?                      p
request data number is . . . . . 27
JOB EXECUTING
continue monitor? y/n?                          y
JOB HAS FINISHED EXECUTION
page alignment? y/n?                            n
                                SERIES DIRECTORY AS OF MAR 03 1983
                                                .
                                                .
                                                .
                                                .
                                                .
```

The DIR command can also be implemented in BATCH mode.

```
command?                                        dir
phase? 1/2?                                     1
batch output? y/n?                              y
enter matrix number(s) required (c.r. to end)
?    10
?
priority, regular or night
service? p/r/n?                                 n
remote for print (return for local site):
multiple copies? y/n?                           n

command?
```

VI.2 The XREF Command:

This command is used to identify the matrix to which a series belongs, when only the Databank identifier of the series is known. To use the command, type: XREF, and, in answer to the prompts, supply a list of Databank identifiers, separated by commas. Ranges of Databank identifiers cannot be entered. The matrix and series number for each Databank number in the list are displayed immediately.

```
command?                    xref
databank number(s)?         D130000, B200
databank number(s)?         (CARRIAGE RETURN)

D130000 000300      1
B   200 000912      1
```

VI.3 The RPT Command:

The RPT Command permits the user to retrieve monthly or quarterly data and display the output as a table which includes, for each year of data retrieved, annual totals or annual averages.

```
command?                                          rpt
phase? 1/2?                                       1
prompt? y/n?                                      n
rpt option: annual average or total? a/t?         a
cansim or databank? c/d                           d
? p,7801,*,s,d130000
?
priority regular or night service? p/r/n?         r
request data number is .....15
job executing
continue monitor? y/n?                            y
job has finished execution
page alignment?  y/n?                             n
```

*** the table will start to print at the terminal ***

VI.4 The MESSAGE Command

While BROADCAST messages, described in Section II.2.2, can be created only by CANSIM staff, CIS users may themselves transit messages to the CANSIM Division or to other CANSIM users with the MESSAGE command. Individual messages generated with this command are maintained for the intended recipient until he accesses them.

The MESSAGE command consists firstly of a prompt for the APL "userid" to which the message is directed, and secondly, of a prompt for the message itself:

```
command?                                          mes
msg. to which user:                               cansim
message lines should not exceed 80characters.
enter carriage return to end
123456789.123456789.123456789.123456789.123456789.123456789...
THIS IS A MESSAGE ENTERED BY USER
TO BE ACCESSED BY CANSIM STAFF
     (carriage return)

message sent

command?                                          (CARRIAGE RETURN)

end of execution

*

*
```

Note that any message can comprise more than one line of text, each line entered at the sound of a "bell" which is generated on the terminal by the system. Note also that if the intended recipient of the message is not logged on when the message is being generated, the transmission of each line of text will not necessarily be instantaneous - perhaps requiring up to 30 seconds for completion.

VI.5 CANSIM NEWSFLASH: The NEWS Command

The CANSIM Newsflash is a text file which is available, on a daily basis, to document any alteration of the CANSIM Main Base. In this regard, all matrices affected, and the types of changes made, are reported. The NEWS command in CIS provides access to this text file, a feature of which is the documentation of all changes in the composition or availability of CANSIM data for the current month.

Like the DIR command, the NEWS command has Phase 1 and Phase 2 components. Phase 1 is used for the retrieval of a Newsflash file, while the Phase 2 component is invoked when the file, once retrieved, is to be printed directly at the user's terminal.

In the example that follows, output at the terminal is requested, so both Phase 1 and Phase 2 are utilized:

```
command?                                    news
phase? 1/2?                                 1
output: printer/terminal? p/t?              t
start date (yymmdd)?                        820112
end date (yymmdd)?                          820112
priority, regular
or night service?                           p
request data number is . . . . . .          59
job executing
continue monitor? y/n?                      n

command?                                    news
phase? 1/2?                                 2
request data number?                        59
page alignment? y/n?                        n
date 82/01/13                               cansim news flash
        tuesday january 12, 1982   14:00 hrs.

matrix 11 & 203 (external trade) unfrozen at 13:00 making available some updates
for 8111 and revisions from 8101 to 8111, all series except 6, 7, and 8 (in matrix
203)

matrix 22 (exports by commodities) monthly, unfrozen at 13:00

        *
        *
              et cetera
```

In the following example, a Newsflash file is to be printed on a high-speed printer:

```
command?                                    news
phase?  1/2?                                1
output: printer/terminal? p/t?              p
start date (yymmdd)?                        820112
end date (yymmdd)?                          820112
priority, regular
or night service?                           r
remote for print (return for central site):
multiple copies?  y/n?                      y
no. of copies? 1-9?                         7

command?
```

VI.6 The SCRATCH Command

The SCRATCH command enables the user to delete output files created in conjunction with CIS retrievals that were generated by the TABLE, DISPLAY, MANIPULATE, PT1, SAP, or NEWS Command. In Section III.1.1.1 (see Example 5), the provision of a REQUEST DATA NUMBER, identifying a CIS output file, is described. This is the number by which CIS retrieval output is accessed for terminal display in Phase 2; it is also the number by which the file may be identified for deletion with the SCRATCH Command.

Files created by CIS in Phase 1 are deleted automatically when Phase 2 is invoked; otherwise, automatic deletion occurs after seven days - upon the user's signing on to the system. If he does not sign on, no deletion will occur. Therefore, the SCRATCH command would be employed to delete output files which are not going to be displayed in Phase 2, and which are not required for a seven-day period.

```
command?                          scratch
request data number?              59
DONE
request data number?              60
DONE
request data number?

command?
```

VI.7 The STATUS Command

If the user wishes to monitor the execution of a CIS retrieval job that is to be output directly at his terminal, he may utilize the STATUS command. In the example that follows, the status of a Newsflash retrieval is monitored; here, the STATUS command is seen as an alternative to responding with a 'Y' to the "CONTINUE MONITOR?" prompt which is generated, in Phase 1, immediately after job submission.

```
command?                          news
phase? 1/2?                                1
output: printer/terminal p/t               t
start date (yymmdd)?                       820112
end date (yymmdd)?                         820112
priority, regular
or night service?                          p
request data number is . . . . . .         59
job executing
continue monitor? y/n?                     n

command?                          status

request number          date      time      type      status

     59                 820114    10:37     news      executing

command?                          status

request number          date      time      type      status

     59                 820114    10:37     news      finished
```

The STATUS command can be used to monitor jobs submitted by the TABLE, DISPLAY, MANIPULATE, SAP, PT1, or NEWS command, and two status levels are reported: EXECUTING and FINISHED. When a job has finished executing, Phase 2 may be invoked to access the output file. Had the user no jobs in CIS, the STATUS command would have generated the message "NO JOBS IN SYSTEM".

VI.8 The UNITS Command

Some time series on the CANSIM Main database are available in both imperial and metric units of measure. By default, these series are accessed in imperial units, but the user may obtain metric data by invoking the UNITS command.

```
command?                          units
imperial/metric? i/m?             m
command?                          display
```

Note that "metric" mode stays in effect for all subsequent retrievals until the UNITS command is again employed to specify imperial units of measure, or until the end of the session. If the user wishes to reset the conversion process to imperial units, a CARRIAGE RETURN will be sufficient response to the prompt IMPERIAL/METRIC?

VII. INTERFACE CAPABILITIES WITH MICROCOMPUTERS AND APPLIED SOFTWARE

As the need evolves, interfaces facilitating the transfer of data from CANSIM to special applications (microcomputers, software packages, etc.) will be added to C.I.S. These interfaces are composed of a retrieval followed by a conversion into a format suitable for a particular application.

VII.1 Interfacing with VISICALC on a Microcomputer: the "DIF" command.

This command allows one to retrieve CANSIM time-series and format them into a D.I.F. file (D.I.F. stands for "Data Interchange Format"); such a file, once copied onto a microcomputer's storage device, may be loaded directly into VISICALC and used in a user application. Because of certain limitations in both D.I.F. and VISICALC, the following restrictions were imposed:

a) All series retrieved must be of the same frequency

b) Due to the VISICALC template limitations, one can not exceed 63 columns or 254 rows. Therefore, if retrieving more than 63 series, one can not retrieve more than 63 datapoints per series (regardless of frequency). One can never retrieve more than 254 series or 254 datapoints per series.

The DIF command is implemented like any other retrieval command: in Phase 1, series to be retrieved are specified, and in Phase 2, the generated DIF file is listed and recorded on the microcomputer. It is assumed that the microcomputer can:

a) Serve as a terminal and communicate through phone lines via a modem with CIS;

b) Record on floppy disk what is being sent as it is being displayed;

These requirements exist because CANSIM cannot produce floppy disks formatted for use on all microcomputers available on the market.

Phase 1 is analogous to that invoked in conjunction with any other of the CIS retrieval commands. In Phase 2, the option of displaying error messages is given. This option should be utilized since the error messages may relate to the conversion to DIF as well as to the actual retrieval of data.

If the job was successful, the system will instruct the user to prepare the microcomputer for recording. To avoid the requirement of entering a carriage return while the microcomputer is recording the data, 20 seconds is alloted to switch the microcomputer to recording mode. After these 20 seconds have elapsed, the DIF file is transmitted automatically. At the end of the transmission, indication of which will be a line containing the characters "EOD", 5 seconds are alloted to switch the microcomputer out of recording mode; the user is then placed back in COMMAND mode.

To load the DIF file into VISICALC on the microcomputer, the "/S#L" VISICALC command is used. Each series is loaded as a column onto the VISICALC spreadsheet unless otherwise specified. Each series is identified by its Databank number, and each row with the appropriate reference date.

```
command?                                        dif
phase 1/2?                                      1
prompt? y/n?                                    n
cansim or databank? c/d?                        d
?    p,8101,*,s,d1
?
immediate, priority,
regular or night service? i/p/r/n?              i
please do not hit break while retrieval is proceeding


want retrieval error message? y/n?              n
prepare your microcomputer for recording
you should stop recording when you receive the line containing
'eod'
there will now be a 20-second delay, and transmission will then start.
table 0, 1
"cansim data 830412"
vectors
```

.
.
.
.
.
.

APPENDIX 1

(1) The HELP and TLIST commands

(2) Example of Output from the TABLE Commande

(3) Example of Output from the DISPLAY Command

(4) Table 1 from the CEA Command

(5) Table 3 from the GNP Command

(6) Table 1 from the ITS Command

(7) Table 1 from the LFS Command

COMMANDS AVAILABLE UNDER CIS

COMMAND	ABBREVIATION	FUNCTION
HELP	HEL	DISPLAYS COMMANDS AVAILABLE UNDER CIS
NEWS	NEW	RETRIEVES NEWSFLASH AT PRINTER OR TERMINAL
DISPLAY	DIS	TERMINAL RETRIEVAL OF DATA IN PRINTED FORM
TABLE	TAB	TERMINAL RETRIEVAL OF DATA IN TABULAR FORM
MANIPULATE	MAN	TERMINAL RETRIEVAL OF DATA INTO APL VARIABLES FOR MANIPULATION
PT1	PT1	TERMINAL RETRIEVAL OF DATA IN CONDENSED PRINT FORM, WITH AN OPTION TO LOAD DATA IN APL VARIABLES
RPT	RPT	RETRIEVAL SHOWING COMPUTED ANNUAL TOTALS OR AVERAGES
SAP	SAP	TERMINAL RETRIEVAL OF DATA FOR STANDARD ANALYSES, WITH AN OPTION TO PRINT DATA AND/OR LOAD IT INTO APL VARIABLES.
DIRECTORY	DIR	TERMINAL LISTING OF DIRECTORY UPDATES + TERMINAL OR BATCH PRINT OF SELECTED MATRICES FROM THE DIRECTORY
STATUS	STA	DISPLAYS STATUS OF PENDING RETRIEVALS
SCRATCH	SCR	SCRATCHES RETRIEVAL DATASETS
MESSAGE	MES	INTER-USER COMMUNICATION
BATCH	BAT	RETRIEVAL OF DATA ON HIGH SPEED PRINTER, TAPE OR DISK
DIF	DIF	RETRIEVAL IN 'DIF' FORMAT (FOR MICROCOMPUTERS)
TLIST	TLI	TERMINAL LISTING OF ALL THE SPECIAL-PURPOSE TABLES AVAILABLE THROUGH SPECIAL COMMANDS OF CIS.
XREF	XRE	CROSS-REFERENCE (GET MATRIX/SERIES FOR DATABANK NO.)
UNITS	UNI	ALLOW RETRIEVAL IN METRIC (CONVERTIBLE SERIES ONLY)

SPECIAL - PURPOSE TABLES IN CIS

COMMAND	NUMBER OF TABLES	BATCH OPTION	DESCRIPTION
AGR	--	YES	SELECTIVE AGRICULTURAL STATISTICS
ITS	4	YES	INTERNATIONAL TRAVEL DATA
GNP	23	YES	NATIONAL INCOME AND EXPENDITURE ACCOUNTS
CEA	10	YES	CURRENT ECONOMIC ANALYSIS TABLES
CEN	--	YES	AVAILABILITY OF '81 CENSUS DATA
LFS	11	YES	LABOUR FORCE SURVEY TABLES
CPI	1	YES	ANALYSIS, CPI, CANADA AND REGIONS
EEM	11	YES	STATISTICS ON ELECTRICAL PRODUCTS MANUFACTURING
DAT	1	YES	MONTHLY SCHEDULE FOR RELEASE OF KEY ECONOMIC DATA
FFL	1	YES	FINANCIAL MARKET SUMMARY TABLE
DAILY	--	NO	STATISTICS CANADA DAILY BULLETIN
PRESS	7	YES	PRESS RELEASES FOR CPI, GNP AND LFS

Example of Output from the TABLE Command

```
                                        CANSIM DATA RETRIEVAL                    DATE:  83/11/21                    PAGE      1
000001   QUARTERLY ESTIMATES OF POPULATION FOR CANADA AND THE PROVINCES, IN THOUSANDS
           MATRIX NOTE
         ESTIMATES FOR CALENDAR QUARTERLY PERIODS FROM JAN. 1946 FOR CANADA AND FROM JULY 1 1951 FOR THE PROV
         INCES. QUARTERLY DATA RELATE TO JAN. 1, APRIL 1, JULY 1, AND OCT. 1. QUARTERS FROM 1951 TO APRIL 1,
         1981 ARE INTERCENSAL ESTIMATES. FROM JULY 1 1981 ESTIMATES ARE POSTCENSAL. THEY WILL BE PRELIMINARY
         AND FINALIZED AS FINAL DATA BECOMES AVAILABLE. DATA PUBLISHED APPROXIMATELY 75 DAYS AFTER END OF REF
         ERENCE QUARTER.

         COLUMN 1     1                    CANADA
         COLUMN 2     1.1                  NEWFOUNDLAND
         COLUMN 3     1.2                  PRINCE EDWARD ISLAND
:
:
```

```
                                        CANSIM DATA RETRIEVAL                    DATE:  83/11/21                    PAGE      2
          -- COLUMN 1 --    -- COLUMN 2 --    -- COLUMN 3 --
 DATE     PERSONS     FOOT  PERSONS     FOOT  PERSONS     FOOT
YYMMDD    THOUSANDS   NOTE  THOUSANDS   NOTE  THOUSANDS   NOTE
800101     23911.9    F1        564.6   F1        122.5   F1
800401     23985.2    F1        564.7   F1        122.5   F1
800701     24070.1    F1        566.0   F1        122.9   F1
801001     24151.1    F1        566.9   F1        122.5   F1
810101     24221.3    F1        567.2   F1        122.4   F1
810401     24288.9    F1        567.3   F1        122.4   F1
810701     24366.4              567.5             122.8
811001     24442.7              568.1             122.8
820101     24513.3              567.4             122.7
820401     24582.0              567.7             122.6
820701     24658.5              570.1             122.8
821001     24725.6              572.8             123.2
830101     24789.0              574.9             123.5
830401     24847.6              576.2             123.7
830701     24907.1              578.6             124.2
* * SEE NEXT PAGE FOR FOOTNOTE(S) * *
:
:
```

```
                                        CANSIM DATA RETRIEVAL                    DATE:  83/11/21                    PAGE      3
    MATRIX NUMBER:  000001          FOOTNOTES REFERENCED IN PRECEDING TABLE PRINTOUT
FOOTNOTE: 1 THE DATA FROM JULY 1 1976 TO APRIL 1 1981 HAVE BEEN FINALIZED IN APRIL 1983 AND SUPERSEDE DATA RELEASED ON JULY 14, 1982
*
*
```

Example of Output from the DISPLAY Command

```
                                        CANSIM DATA RETRIEVAL          DATE: 83/11/21                    PAGE     1
D      1          000001.1                          SCALAR FACTOR: THOUSANDS                  FREQUENCY: QUARTERLY
      MATRIX TITLE: QUARTERLY ESTIMATES OF POPULATION FOR CANADA AND THE PROVINCES, IN THOUSANDS
      SERIES TITLE: CANADA                                                          UNIT OF MEASURE: PERSONS
DATE                    1ST                 2ND                 3RD                 4TH

78-01-01          23,417.4 F1         23,470.7 F1         23,534.6 F1         23,590.2 F1
79-01-01          23,644.5 F1         23,700.8 F1         23,768.3 F1         23,838.2 F1
80-01-01          23,911.9 F1         23,985.2 F1         24,070.1 F1         24,151.1 F1
81-01-01          24,221.3 F1         24,288.9 F1         24,366.4            24,442.7
82-01-01          24,513.3            24,582.0            24,658.5            24,725.6
83-01-01          24,789.0            24,847.6            24,907.1
  SOURCE: CATALOGUE NO. 91-001, STATISTICS CANADA
    NOTE: ESTIMATES FOR CALENDAR QUARTERLY PERIODS FROM JAN. 1946 FOR CANADA AND FROM JULY 1 1951 FOR THE PROV
          INCES. QUARTERLY DATA RELATE TO JAN. 1, APRIL 1, JULY 1, AND OCT. 1. QUARTERS FROM 1951 TO APRIL 1,
          1981 ARE INTERCENSAL ESTIMATES. FROM JULY 1 1981 ESTIMATES ARE POSTCENSAL. THEY WILL BE PRELIMINARY
          AND FINALIZED AS FINAL DATA BECOMES AVAILABLE. DATA PUBLISHED APPROXIMATELY 75 DAYS AFTER END OF REF
          ERENCE QUARTER.
FOOTNOTE: 1 THE DATA FROM JULY 1 1976 TO APRIL 1 1981 HAVE BEEN FINALIZED IN APRIL 1983 AND SUPERSEDE DATA RELEASED ON JULY 14, 1982
*
*
```

Table 1 from the CEA Command

AUG 30, 1983

TABLE 1

1:15 PM

INCOME AND EXPENDITURE AGGREGATES
MILLIONS OF CONSTANT 1971 DOLLARS
PERCENTAGE CHANGES OF SEASONALLY ADJUSTED FIGURES

	PERSONAL EXPENDITURE	GOVERNMENT CURRENT EXPENDITURE	BUSINESS FIXED INVESTMENT			CHANGE IN		EXPORTS	IMPORTS	GROSS NATIONAL EXPENDITURE
			RESIDENTIAL CONSTRUCTION	NON-RES. CONSTRUCTION	MACHINERY AND EQUIPMENT	BUSINESS NON-FARM INVENTORIES (1)	CHANGE IN FARM INVENTORIES (1)			
1978	2.6	1.7	-1.7	1.3	.8	-3	104	10.5	4.6	3.6
1979	2.0	.3	-2.7	13.4	12.1	1771	-32	3.0	6.9	3.2
1980	1.0	.8	-5.8	11.0	4.3	-536	-154	1.9	-2.0	1.0
1981	1.9	.5	5.1	8.2	7.1	584	124	2.8	3.8	3.4
1982	-2.1	.5	-23.1	-7.2	-14.9	-3364	100	-1.6	-11.3	-4.4
1981 III	-.8	1.6	-8.8	-.3	-4.1	1328	380	-2.4	.6	-.7
IV	-.5	1.9	-12.0	3.0	.9	-476	16	-.8	-4.7	-.8
1982 I	-1.6	-2.0	-5.4	-1.5	-6.2	-2168	76	-2.9	-7.4	-2.2
II	.0	.8	-9.6	-5.9	-5.7	-3536	-28	5.0	.1	-1.4
III	-.2	-.2	-5.6	-8.1	-9.7	-3376	192	1.4	-1.2	-.8
IV	.5	.8	11.7	1.7	-.9	-4376	160	-9.2	-5.7	-.7
1983 I	.9	-1.3	9.8	-4.8	-1.7	-1524	236	4.2	6.2	1.8
II	1.4	-.4	25.9	-3.2	2.0	-1816	276	6.6	5.0	1.8

SOURCE: NATIONAL INCOME AND EXPENDITURE ACCOUNTS, CAT. NO. 13-001, STATISTICS CANADA.
(1) MILLIONS OF CONSTANT 1971 DOLLARS, SEASONALLY ADJUSTED AT ANNUAL RATES: (NOT PERCENTAGE CHANGES).

*
*

Table 3 from the GNP Command

TABLE 3. RELATION BETWEEN GROSS NATIONAL PRODUCT AT MARKET PRICES AND GROSS DOMESTIC PRODUCT AT FACTOR COST.
TABLEAU 3. RAPPORT ENTRE LE PRODUIT NATIONAL BRUT AUX PRIX DU MARCHE ET LE PRODUIT INTERIEUR BRUT AU COUT DES FACTEURS.

MILLIONS OF DOLLARS - MILLIONS DE DOLLARS

	I	II	III	IV	1982	I	II	III	IV	1983
1 GROSS NATIONAL PRODUCT AT MARKET PRICES/ PRODUIT NATIONAL BRUT AUX PRIX DU MARCHE.....	82947	86548	97072	90033	356600	88546	93981			0
2 DEDUCT: RESIDUAL ERROR OF ESTIMATE/ MOINS: ERREUR RESIDUELLE.....	1133	-352	133	-821	93	1001	-639			0
3 INDIRECT TAXES LESS SUBSIDIES/ IMPOTS INDIRECTS MOINS SUBVENTIONS.....	-10631	-9289	-10279	-10581	-40780	-10587	-9921			0
4 INVESTMENT INCOME RECEIVED FROM NON-RESIDENTS/ REVENUS DE PLACEMENTS RECUS DES NON-RESIDENTS.....	-1138	-1289	-1166	-1443	-5036	-1212	-1100			0
5 ADD: INVESTMENT INCOME PAID TO NON-RESIDENTS/ PLUS: REVENUS DE PLACEMENTS VERSES AUX NON-RESIDENTS.....	4283	4598	4395	4876	18152	4217	4222			0
6 GROSS DOMESTIC PRODUCT AT FACTOR COST/ PRODUIT INTERIEUR BRUT AU COUT DES FACTEURS.....	76594	80216	90155	82064	329029	81965	86543			0

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Table 1 from the ITS Command

NOV 9, 1983 TABLE 1 1:08 PM

RECEIPTS AND PAYMENTS ON TRAVEL ACCOUNT
MILLIONS OF DOLLARS)

	UNITED STATES			OTHER COUNTRIES			ALL COUNTRIES		
	RECEIPTS	PAYMENTS	BALANCE	RECEIPTS	PAYMENTS	BALANCE	RECEIPTS	PAYMENTS	BALANCE
1978	1650	2553	-903	728	1531	-803	2378	4084	-1706
1979	1881	2457	-576	1006	1498	-492	2887	3955	-1068
1980	2121	2920	-799	1228	1657	-429	3349	4577	-1228
1981	2491	3208	-717	1269	1668	-399	3760	4876	-1116
1982	2402	3234	-832	1322	1774	-452	3724	5008	-1284
1980 III	1027	787	240	599	525	74	1626	1312	314
IV	340	548	-208	168	331	-163	508	879	-371
1981 I	274	939	-665	111	455	-344	385	1394	-1009
II	624	836	-212	367	377	-10	991	1213	-222
III	1219	838	381	596	514	82	1815	1352	463
IV	374	595	-221	195	322	-127	569	917	-348
1982 I	265	1004	-739	124	475	-351	389	1479	-1090
II	594	869	-275	389	407	-18	983	1276	-293
III	1161	783	378	617	554	63	1778	1337	441
IV	382	578	-196	192	338	-146	574	916	-342
1983 I	265	1036	-771	121	494	-373	386	1530	-1144
II	615	1024	-409	345	477	-132	960	1501	-541

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Table 1 from the LFS Command

LABOUR FORCE ESTIMATES (000'S)
ESTIMATIONS SUR LA POPULATION ACTIVE

WEEK ENDED OCTOBER 15, 1983
SEMAINE TERMINEE LE 15 OCTOBRE 1983

TAB. 1	SEASONALLY ADJUSTED - CHIFFRES DESAISONALISES					ACTUAL - CHIFFRES REELS				
CANADA	LF-PA	EMP	UNP-CHOM	P/R-T/A	U/R-T/C	LF-PA	EMP	UNP-CHOM	P/R-T/A	U/R-T/C
TOTAL	12090	10744	1346	64.0	11.1	12057	10819	1238	63.8	10.3
15-24	2887	2353	534	65.9	18.5	2798	2308	490	63.8	17.5
25+	9203	8391	812	63.5	8.8	9259	8511	748	63.9	8.1
MEN-HOMMES	5525	5050	475	78.6	8.6	5545	5127	418	78.9	7.5
WOMEN-FEMMES	3678	3341	337	49.2	9.2	3714	3384	330	49.7	8.9
NFLD - T.N.	224	183	41	52.1	18.3	225	185	39	52.3	17.4
PEI - IPE	57	50	7	61.3	12.1	57	51	6	61.3	10.1
N.S. - N.E.	383	333	50	58.5	13.1	385	339	46	58.8	11.9
N.B.	299	257	42	55.2	14.0	301	264	38	55.6	12.5
QUE	3006	2600	406	60.3	13.5	3009	2630	379	60.4	12.6
ONT	4587	4164	423	67.1	9.2	4568	4181	387	66.8	8.5
MAN	515	467	48	66.1	9.3	513	471	43	65.9	8.3
SASK	484	448	36	65.7	7.4	483	452	31	65.4	6.4
ALTA	1197	1076	121	71.2	10.1	1183	1079	104	70.4	8.8
B.C. - C.B.	1344	1162	182	62.7	13.5	1333	1166	167	62.2	12.5

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List of Pre-formatted SAP Reports

1	ITEM	REFERENCE PERIOD	DATA FOR REFERENCE PERIOD	DATA FOR PREVIOUS PERIOD	DATA FOR SAME PER LAST YEAR				
2	ITEM	REFERENCE PERIOD	DATA FOR REFERENCE PERIOD	DATA FOR PREVIOUS PERIOD	CHANGE FROM PREV PERIOD	DATA FOR SAME PER LAST YEAR	CHANGE /SAME PER LAST YEAR		
3	ITEM	REFERENCE PERIOD	DATA FOR REFERENCE PERIOD	DATA FOR PREVIOUS PERIOD	CHANGE FROM PREV PERIOD	PCT CHANGE FROM PREV PERIOD			
4	ITEM	REFERENCE PERIOD	DATA FOR REFERENCE PERIOD	DATA FOR PREVIOUS PERIOD	CHANGE FROM PREV PERIOD	PCT CHANGE FROM PREV PERIOD	DATA FOR SAME PER LAST YEAR	PCT CHANGE /SAME PER LAST YEAR	
5	ITEM	REFERENCE PERIOD	DATA FOR REFERENCE PERIOD	DATA FOR PREVIOUS PERIOD	PCT CHANGE FROM PREV PERIOD	DATA FOR SAME PER LAST YEAR	PCT CHANGE /SAME PER LAST YEAR	PCT CHANGE /FIRST PER THIS YEAR	
6	ITEM	REFERENCE PERIOD	DATA FOR REFERENCE PERIOD	DATA FOR SAME PER LAST YEAR	PCT CHANGE /SAME PER LAST YEAR	PCT CHANGE /FIRST PER THIS YEAR	PCT CHANGE IN YTD PER LAST YEAR		
7	ITEM	REFERENCE PERIOD	DATA FOR REFERENCE PERIOD	DATA FOR PREVIOUS PERIOD	TOTAL THIS YEAR TO DATE	TOTAL FOR YTD PERIOD LAST YEAR	DIFFERENCE IN TOTALS /SAME PER	PCT CHANGE IN TOTALS /SAME PER	
8	ITEM	REFERENCE PERIOD	DATA FOR REFERENCE PERIOD	TOTAL THIS YEAR TO DATE	TOTAL FOR YTD PERIOD LAST YEAR	DIFFERENCE IN TOTALS /SAME PER	PCT CHANGE IN TOTALS /SAME PER	TOTAL LAST CALENDAR YEAR	PERCENT YTD/TOTAL LAST YEAR
9	ITEM	REFERENCE PERIOD	DATA FOR REFERENCE PERIOD	DATA FOR PREVIOUS PERIOD	MAXIMUM YEAR ENDED THIS PER	MINIMUM YEAR ENDED THIS PER	MOVING AVG YEAR ENDED THIS PER		

APPENDIX 2

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10 ITEM       REFERENCE    DATA FOR    DATA FOR     MAXIMUM     MINIMUM     AVERAGE     AVERAGE  PCT CHG IN
10              PERIOD    REFERENCE   PREVIOUS     PREVIOUS    PREVIOUS    PREVIOUS   THIS YEAR    AVG YTD/
10                         PERIOD      PERIOD     CAL. YEAR   CAL. YEAR   CAL. YEAR    TO DATE   PREV YEAR
   ---------------------------------------------------------------------------------------------------

11 ITEM       REFERENCE    DATA FOR  PCT CHANGE  PCT CHANGE
11              PERIOD    REFERENCE   FROM PREV   /SAME PER
11                         PERIOD      PERIOD    LAST YEAR
   ---------------------------------------------------------

12 ITEM       REFERENCE    DATA FOR    DATA FOR  PCT CHANGE       TOTAL   TOTAL FOR  PCT CHANGE
12              PERIOD    REFERENCE   SAME PER   /SAME PER   THIS YEAR   YTD PERIOD   IN TOTALS
12                         PERIOD     LAST YEAR  LAST YEAR    TO DATE    LAST YEAR   /SAME PER
   ---------------------------------------------------------------------------------------------

13 ITEM       REFERENCE    DATA FOR    DATA FOR  PCT CHANGE
13              PERIOD    REFERENCE   SAME PER   /SAME PER
13                         PERIOD     LAST YEAR  LAST YEAR
   ---------------------------------------------------------

14 ITEM       REFERENCE       TOTAL   TOTAL FOR  PCT CHANGE
14              PERIOD    THIS YEAR   YTD PERIOD  IN TOTALS
14                         TO DATE    LAST YEAR   /SAME PER
   ---------------------------------------------------------

15 ITEM       REFERENCE    DATA FOR   SPECIFIED    DATA FOR      CHANGE  PCT CHANGE
15              PERIOD    REFERENCE      START       START       SINCE       SINCE
15                         PERIOD      PERIOD      PERIOD  START PER.  START PER.
   ---------------------------------------------------------------------------------

16 ITEM       REFERENCE    DATA FOR   BASE YEAR   BASE YEAR   INDEX FOR
16              PERIOD    REFERENCE         FOR      ANNUAL   REFERENCE
16                         PERIOD    INDEX=100     AVERAGE      PERIOD
   ---------------------------------------------------------------------

17 ITEM       REFERENCE    DATA FOR   SPECIFIED    DATA FOR     AVERAGE     PCT AVG
17              PERIOD    REFERENCE      START       START      ANNUAL      ANNUAL
17                         PERIOD      PERIOD      PERIOD      GROWTH      GROWTH
   ---------------------------------------------------------------------------------

18 ITEM       REFERENCE    DATA FOR   SPECIFIED    DATA FOR     PCT AVG  PCT ANNUAL
18              PERIOD    REFERENCE      START       START      ANNUAL    COMPOUND
18                         PERIOD      PERIOD      PERIOD      GROWTH      GROWTH
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The SAP Function Menu List Available for the BLD Option

1	2	3	4	5	6
DATA FOR REFERENCE PERIOD	DATA FOR PREVIOUS PERIOD	DATA FOR SAME PER LAST YEAR	CHANGE FROM PREV PERIOD	CHANGE /SAME PER LAST YEAR	PCT CHANGE FROM PREV PERIOD
7	8	9	10	11	12
PCT CHANGE /SAME PER LAST YEAR	PCT CHANGE /FIRST PER THIS YEAR	PCT CHANGE IN YTD PER LAST YEAR	TOTAL THIS YEAR TO DATE	TOTAL FOR YTD PERIOD LAST YEAR	DIFFERENCE IN TOTALS /SAME PER
13	14	15	16	17	18
PCT CHANGE IN TOTALS /SAME PER	TOTAL LAST CALENDAR YEAR	PERCENT YTD/TOTAL LAST YEAR	MAXIMUM YEAR ENDED THIS PER	MINIMUM YEAR ENDED THIS PER	MOVING AVG YEAR ENDED THIS PER
19	20	21	22	23	24
MAXIMUM PREVIOUS CAL. YEAR	MINIMUM PREVIOUS CAL. YEAR	AVERAGE PREVIOUS CAL. YEAR	AVERAGE THIS YEAR TO DATE	PCT CHG IN AVG YTD/ PREV YEAR	DATA FOR START PERIOD
25	26	27	28	29	30
CHANGE SINCE START PER.	PCT CHANGE SINCE START PER.	BASE YEAR ANNUAL AVERAGE	INDEX FOR REFERENCE PERIOD	SPECIFIED START PERIOD	BASE YEAR FOR INDEX=100
31	32	33	34	35	36
AVERAGE ANNUAL GROWTH	PCT AVG ANNUAL GROWTH	PCT ANNUAL COMPOUND GROWTH	3 MONTH MOVING AVERAGE	AVERAGE SAME 3 MOS PREV. YEAR	ANNUAL PCT CHG. 3 MON MOVING AVG.