Report no. 110-1

Program Documentation
For
Manpower Data Tabulation

by

A. Smith

1977

PROGRAM DOCUMENTATION
FOR
MANPOWER DATA TABULATION

report no.
rapport n°. 110-1

MARCH 1977

Ministry of State
Science and Technology

Research and Information Services

Ministère d'État
Sciences et Technologie

Services de recherche et d'information

Ministry of State
Science and Technology
Research and Information Services

Ministère d'État
Sciences et Technologie
Services de recherche et d'information

PROGRAM DOCUMENTATION FOR MANPOWER DATA TABULATION

report no.
rapport n°. 110-1

MARCH 1977

Documentation of BASIC Language/RSTS-E Programs used in the PDP 11/45 computer system in connection with case number 2,484.

prepared for
préparé pour

by
par

A. SMITH

approved by
approuvé par

R. GUTTORMSON

INDEX PAGE

PROGRAM DOCUMENTATION FOR MANPOWER DATA TABULATION

Description of Tabulation

The programs documented here produce some tabularized summaries of data collected on page 4 of the Survey of Federal Government Activities in the Natural and Human Sciences which was circulated during the Main Estimates program.

For graphic presentation of these summaries, see Report 111.

General Description of Programs

1. Data Summary Program

Using the M77ME.VCA file of manpower data, the program MSUM produces two types of data summaries:

1) by category and type of activity

2) by department or agency and by category

The second summary type ranks the department totals by the average of total categories over 3 years.

For natural and human, and a total of both sciences, 6 output files prefixed by MSUM and suffixed by .COM, .NAT, or .HUM are produced.

The PROGCV.DAT file should reflect the current list of program numbers and their associated departments. See Abbreviation Index.

2. Display of Manpower Tables

The TABLEM program combines titles and data to present 6 tables in either English or French on the User Terminal or on a printout file prefixed by MP. For programs listing by department, a number greater than 100 will list all departments having data.

Operations Procedures

1. The Command

QUE BA: BACHMP = BACHMP.CTL will cause execution of the MSUM program for data summaries and the TABLEM program for tabulation in English or French. The resulting tables will be automatically queued to the printer.

2. The Command

RUN TABLEM will allow display of individual programs. For each table, three years of data are presented.

3. Update Notes

These files:

1. The PROGCV.DAT (conversion list for program to department or agency)

2. DEPTAB.D77 and DFPTAB.D77 (English and French list of departments and agency)

3. TITLEM and TITLFM (containing tabulation titles)

must all be updated to reflect the current year.

The year values in TITLEM and TITLFM can be changed using the TITLEY program.

The BACHMP.CTL file $DATA statement must be edited to contain the year value for the last survey year (i.e. 77 = 1977-78).

PROGRAM TYPE Manpower Data Summary

NAME MSUM SIZE

PURPOSE Create data files for tabulation by department or category

FILE DESCRIPTIONS

NAME	INPUT OUTPUT	CONTENT	VIRTUAL DIMENSIONS
M77ME.VCA[120,10]	I	Manpower data	(4284,2)
PROGCV.DAT[30,15]	I	program to department conversion vector	(110)
MSUM?.COM			
MSUM?.NAT	O	Tabulation arrays organized by science type	
MSUM?.HUM			

PROGRAM VARIABLES

Y9% - current year
R9% - max. number of departments
S9% - max. number of programs
S% - tabulation type: 1 by category; 2 by department
T% - science type: 1 natural; 2 human
P% - program number (1-102)
Y% - year number (1-3)
A% - category (1-7)
R% - activity (0-2)
S() - natural or human summary matrix
S1() - natural and human summary matrix

PROGRAM FUNCTION

FNS1%(S1%) - determine appropriate row number in summary matrix
FNS2%(S2%) - determine appropriate column number in summary matrix
FNTØ%(I1%, I9%) - totals 6 columns into 7th column for I9% rows
FNT1% (I1%, I2%, I3%, J9%)
- totals columns into J9% from rows I1% to I2% into row I3%

```
[illegible]
10        !       THIS PROGRAM CREATES 6 ARRAYS USED FOR MANOWER TABULATIONS AND HISTOGRAMS
50        INPUT"CURRENT YEAR ( 77=1977-78 )",Y9%: Y9$=CVT$$(NUM$(Y9%),2%)
 0        Y7$="M"+Y9$+"ME.VCA"
[illegible]
80        Y8%=(Y9%-76%)*10%:      Y8$=CVT$$(NUM$(Y8%),2%)
[illegible]
110       F$="[120,"+Y8$+"]"+Y7$
 00       I$="REPORT 113 DATA ARRAYS": &: &I$:&
          ! OPEN FILES, DIM ARRAYS
[illegible]
          OPEN F$ FOR INPUT AS FILE 10
[illegible]
          OPEN"PROGCV.DAT[30,15]" FOR INPUT AS FILE 11    !       CONVERTS PROGRAM NUMBERS TO DEPARTMENT
[illegible]
          DIM#1,M1%(10%),U1(8%,11%)
245       DIM#2,M2%(6%),W2%(225%),U2(225%,7%)
 65       DIM#10,V(4284,2)
[illegible]
          DIM#11,D%(110%)
[illegible]
          DIM R(75%),E%(75%)
360       DIM S(75%,11%),S1(75%,11%)
 70       F$="######.##"
[illegible]
          E$(0%)=".COM": E$(1%)=".NAT": E$(2%)=".HUM"
[illegible]
          S$="[30,15]MSUM"
4[illegible]
          R9%=75%
500       S9%=103%
 000
          ! CYCLE VCA FILES & FORM RANKED CATAGORY LISTS
[illegible]0              S%=1%
1020                      &"TABLE 1"
 100      FOR T%=1% TO 2%
 165                      &"T%=";T%
[illegible]0              T1%=T%
[illegible]0      FOR Y%=1% TO 3%
1150      FOR P%=1% TO 102%
 160                      V1=V(FNV(P%,T%,1%,1%),0%)
[illegible]0              IF V1<0 THEN 1330%
[illegible]0              P1%=D%(P%)
[illegible]0      FOR A%=1% TO 7%
1240      FOR R%=0% TO 2%
 250                      V=V(FNV(P%,T%,Y%,A%),R%)
[illegible]0              IF V=0 THEN 1310
[illegible]0              I%=FNS1%(S%)
1290                      K%=FNS2%(S%)
 300      S(I%,K%)=S(I%,K%)+V
[illegible]0      NEXT R%
[illegible]0      NEXT A%
[illegible]0      NEXT P%
1340      NEXT Y%
 350                      GOSUB 2000
[illegible]0      NEXT T%
[illegible]9      GOTO 1800
1400
          ! &CYCLE VCA FILE & FORM RANKED DEPARTMENT LISTS
[illegible]0              S%=2%
[illegible]0              &"TABLE 2"
[illegible]0              I4%=0%
1500      FOR Y%=1% TO 3%
 510      FOR T%=1% TO 2%
[illegible]0              T1%=T%
[illegible]0              &"Y%=";Y%,"T%=";T%
[illegible]0      FOR P%=1% TO 102%
1560                      V1=V(FNV(P%,T%,1%,1%),0%)
 570                      IF V1<0 THEN 1680%
[illegible]0              P1%=D%(P%)
[illegible]0      FOR A%=1% TO 7%
1600      FOR R%=0% TO 2%
 610                      V=V(FNV(P%,T%,Y%,A%),R%)
[illegible]0              IF V=0 THEN 1660
[illegible]0              I%=FNS1%(S%)
[illegible]0              K%=FNS2%(S%)
1650      S(I%,K%)=S(I%,K%)+V
 660      NEXT R%
[illegible]0      NEXT A%
[illegible]0      NEXT P%
1700                      GOSUB 2500
 710      NEXT T%
[illegible]0      NEXT Y%
[illegible]0              CLOSE 11,12
[illegible]0      STOP
```

```
        !
2000    !       ARRAYS BY CATEGORY AND ACTIVITY
2003    I1%=1%: J1%=0%
2005    I2%=8%: J2%=11%
2020    K=FNT0(I1%,I2%-1%,0%,11%,4%)
2025      K=FNT1(I1%,I2%-1%,I2%,J2%)
2030            GOSUB 5000
2040            GOSUB 6000
2060    O$=S$+CVT$$(NUM$(S%),2%)+E$(T1%)
2065    &O$
2070    OPEN O$ FOR OUTPUT AS FILE 1
2080            M1%(0%)=Y9%
2100    FOR I%=I1% TO I2%
2105            I0%,M1%(I%)=E%(I%)
2107    FOR J%=J1% TO J2%
2110            U1(I%,J%)=S1(I0%,J%) IF T1%=0%
2115            U1(I%,J%)=S(I0%,J%) IF T1%>0%
2120            &USING F$,U1(I%,J%);
2130    NEXT J%: &: NEXT I%
2150    CLOSE 1
2160            GOSUB 5100 IF T1%=0%
2170            GOTO 2200 IF T1%=0%
2175            GOSUB 5050
2180            IF T%=2% THEN T1%=0%: GOTO 2040
2200    RETURN
        !
2500    ! 75 BY 8 ,BY DEPARTMENT ARRAYS
2510    I1%=1%: I2%=R9%: J1%=0%: J2%=7%
2520    K=FNT1(I1%,I2%-1%,I2%,J2%)
2530    K=FNT0(I1%,I2%,0%,7%,8%)
2540            GOSUB 5000
2560            GOSUB 6000
2561    I4%(T1%)=0% IF Y%=1%
2562    I4%=I4%(T1%)
2565    I4%(T1%)=I4%(T1%)+I3%
2570    O$=S$+CVT$$(NUM$(S%),2%)+E$(T1%)
2585    &O$
2590    OPEN O$ AS FILE 2
2600    M2%(0%)=Y9%: M2%(Y%)=I4%+1%: M2%(Y%+3%)=I4%+I3%
2601    &M2%(Y%),M2%(Y%+3%)
2610    FOR I0%=I1% TO I3%
2620            I%=E%(I0%)
2630            I%=R9% IF I0%=I3%
2640            W2%(I0%+I4%)=E%(I0%)
2645    &I0%+I4% IF I0%=I3%
2650    FOR J%=J1% TO J2%
2660            U2(I0%+I4%,J%)=S1(I%,J%) IF T1%=0%
2670            U2(I0%+I4%,J%)=S(I%,J%) IF T1%>0%
2680            &USING F$,U2(I0%+I4%,J%); IF I0%=I3%
2690    NEXT J%: NEXT I0%
2695    &
2710    CLOSE 2
2715            GOSUB 5100 IF T1%=0%
2720            GOSUB 5050
2730            IF T1%=0 THEN 2750
2740    IF T%=2% THEN T1%=0%: GOTO 2560
2750    RETURN
        !
5000    ! ADD S() TO S1()
5010    S1(I%,J%)=S1(I%,J%)+S(I%,J%) FOR J%=J1% TO J2% FOR I%=I1% TO I2%
5020    RETURN
        !
5050    ! ZERO S()
5060    S(I%,J%)=0 FOR J%=J1% TO J2% FOR I%=I1% TO I2%
5070    RETURN
        !
5100    ! ZERO S1()
5110    S1(I%,J%)=0 FOR J%=J1% TO J2% FOR I%=I1% TO I2%
5120    RETURN
        !
```

```
6000    !
6000    ! RANKING SUBROUTINE
6010            FOR I%=I1% TO I2%-1%
6015    S=0
6016    IF J2%=7% THEN 6020
6017    S=S+S(I%,J%) FOR J%=3% TO J2% STEP 4% IF T1%>0%
6018    S=S+S1(I%,J%) FOR J%=3% TO J2% STEP 4%  IF T1%=0%
6020            S=S+S(I%,J%) IF T1%>0
6025            S=S+S1(I%,J%) IF T1%=0%
6037    R(I%)=S
6040    E%(I%)=I%
6045            NEXT I%
6050            FOR I%=1% TO I2%-1%
6060    FOR K%=1% TO I2%-1%-I%
6070            IF R(K%)>R(K%+1%) THEN 6110
6080    R1=R(K%):       E1%=E%(K%)
6090    R(K%)=R(K%+1%): E%(K%)=E%(K%+1%)
6100    R(K%+1%)=R1:    E%(K%+1%)=E1%
6110            NEXT K %: NEXT I%
6120    I3%=I% IF R(I%)>0 FOR I%=I1% TO I2%-1%
6130            I3%=I3%+1%
6135            I3%=I2% IF S%=1%
6140            E%(I3%)=I2%
6200    RETURN
        !
7600    DEF FNS1%(S1%)  ! DETERMINE ROW NO
7610    ON S% GOTO 7620,7630
7620    I%=A%: GOTO 7690
7630    I%=P1%
7690    FNS1%=I%
7695    FNEND
        !
7700    DEF FNS2%(S2%)  ! DETERMINE COL. NO.
7710    ON S% GOTO 7720,7730
7720    K%=(Y%-1%)*4%+R%:               GOTO 7780
7730    K%=(A%-1%)
7780            FNS2%=K%
7790    FNEND
        !
7800    DEF FNT0(I1%,I9%,K1%,K2%,K3%)   ! COLUMN TOTALS
7810    FOR I%=I1% TO I9%: FOR K%=K1% TO K2% STEP K3%
7820    S(I%,K%+K3%-1%)=S(I%,K%+K3%-1%)+S(I%,J%) FOR J%=K% TO K%+K3%-2%
7840    NEXT K%: NEXT I%
7850    FNEND
        !
7860    DEF FNT1(I1%,I2%,I3%,J9%)       !       ROW TOTALS
7870    FOR I%=I1% TO I2%: FOR J%=0% TO J9%
7880    S(I3%,J%)=S(I3%,J%)+S(I%,J%)
7890    NEXT J%: NEXT I%
7895    FNEND
        !
7900    DEF FNV(I1%,I2%,I3%,I4%)=(I1%-1%)*42+(I2%-1%)*21+(I3%-1%)*7+I4% ! SELECT VECTOR FROM M.VCA FILE
32000   END
```

PROGRAM TYPE Table printout

NAME TABLEM.BAS SIZE

PURPOSE To write manpower tables on terminal or on printout file

FILE DESCRIPTIONS

NAME	INPUT OUTPUT	CONTENT	VIRTUAL DIMENSIONS
MPTITL.DAT	I	English Titles used for tables	T$(30)=128
MPTITF.DAT		French Titles used for tables	
DEPTAB.D77	I	Dept/Program list (English)	D$(110)
DFPTAB.D77	I	Dept/Program list (French)	
MSUM1.COM		Category/Activity	M3%(10)
MSUM1.NAT	I	Printout matrix	V3(8, 11)
MSUM1.HUM		See data layout #3	
MSUM2.COM		Department/Category	M4%(6), D1%(225)
MSUM2.NAT	I	Printout matrix	V4(225, 7)
MSUM2.HUM		See data layout #4	
MP.1 MP.4			
MP.2 MP.5	O	Printout file	
MP.3 MP.6			

PROGRAM VARIABLES

N$ - input value indicating table number to be printed
S% - 1: category by activity tables; 2: department & agency by category
I1%, I2% - lower and upper limits of title file index
T% - tab variable used for centering table on printout page
P% - position index for title line with year value
M2% - number of departments for each value type
D%(7) - ranking order key for manpower categories
D$(50) - department/program abbreviation array
D1%(50) - ranking order key for department/program abbreviation

PROGRAM FUNCTION

FNC$(B$,N%) - Function to centre title B$ in space of length N%
FNT$(A$,A%) - Function to add fiscal year A% to end of title string A$
FNV(V,V%) - Function to print value V or symbol V$ if V less than printable amount

```
10       T1$="THIS PROGRAM PRINTS THESE MANPOWER TABLES":&
15 INPUT"ENGLISH = 0 , FRENCH = -1",L9%
20       L1$="MPTITL.DAT": L2$="DEPT"
25 IF L9% THEN L1$="MPTITF.DAT":L2$="DFPT"
26       L2$=L2$+"AB.D77[30,15]"
27       GOSUB 1300
30 &T1$
40 &
50 PRINT"     1     2     3     4     5     6"
51 PRINT"   COM   COM   NAT   NAT   HUM   HUM"
60 &
70 INPUT"WHICH TABLE",N$
80 IF VAL(N$)>6 THEN 32000
90 J1=(VAL(N$))/2
100 J2=INT(J1)
105      S%=1%: S%=2% IF J1=J2
110 &
120 INPUT"TERMINAL PRINTOUT = 0 , PRINT FILE = 1",Q%
130 &
140 INPUT"HOW MANY DEPARTMENTS",D% IF S%=2%
150      ON S% GOTO 151,155
151 I1%=12%: I2%=21%: T%=0%
152      P$="   ###,###.#"
153      F1$="          - -":
         F2$="          ---"
154 M$="MSUM1": GOTO 170
155      I1%=3%: I2%=10%: T%=16%
156      F$="   ####,###.#": F1$="          - -": F2$="          ---"
157      M$="MSUM2"
170 T%=0% IF Q%=0%
175      T1%=12%
180      OPEN"MP."+N$ FOR OUTPUT AS FILE 1 IF Q%=1%
185      !        DETERMINE INPUT FILE
190      OPEN L1$ AS FILE 2
200      DIM#2,T$(40)=128%
220 IF VAL(N$)<3% THEN P$=T$(2%):P1$=".COM"
230 IF VAL(N$)>2% THEN P$=T$(31%):P1$=".NAT"
240 IF VAL(N$)>4% THEN P$=T$(32%):P1$=".HUM"
250      OPEN M$+P1$ AS FILE 3 IF S%=1%
260      OPEN M$+P1$ AS FILE 4 IF S%=2%
270      DIM#3,M3%(10%),V3(8%,11%)
280      DIM#4,M4%(6%),D1%(225%),V4(225%,7%)
285      OPEN L2$ AS FILE 5
286      DIM#5,D$(110%)
289      !        PRINT THE TITLES
290      Y1%=1%: Y2%=1%: Y2%=3% IF S%=2%
295      FOR Y%=Y1% TO Y2%
300      PRINT#Q%,CHR$(12%)
302      N%=VAL(N$): V%=V2%(N%): V%=V%+(Y%-1%)*2% IF S%=2%
303      PRINT#Q%,CVT$$(NUM$(V%),2%)+","
304      PRINT#Q%,CHR$(10): PRINT#Q%,CHR$(10) IF S%=1%
305      N1$=" "+N$: N1$=N1$+"-"+CVT$$(NUM$(Y%),2%) IF S%=2%
310      PRINT#Q%,TAB(T%);T$(1%)+N1$
320 PRINT#Q%
330 PRINT#Q%,TAB(T%);P$
340 PRINT#Q% :PRINT#Q%
345      T5$=STRING$(132%,45%)
350 FOR I%=I1% TO I2%
352      T$=T$(I%)
355      IF I%=4% THEN T$=FNT$(T$,M4%(0%)-3%+Y%)
356      IF I%>11% AND I%<15% THEN T$=FNC$(T$,132%)
357      IF I%=19% THEN PRINT#Q%,T$(38%);
358      IF I%>15% AND I%<21% THEN PRINT#Q%,TAB(T1%);
359      IF I%=15% OR I%=21% THEN T$=T5$
360      PRINT#Q%,TAB(T%);T$
370      PRINT#Q% IF I%<I1%+3%
390 NEXT I%
400 GOTO 550 IF S%=2%
405      !        PRINT SUMMARY TABLES BY CATEGORY

410      PRINT#Q%
430 FOR I%=1% TO 8%
440      I4%=M3%(I%)
450      IF I%=8% THEN PRINT#Q%,T5$: PRINT#Q%
460      PRINT#Q%,TAB(T%);LEFT(T$(I4%+21%),T1%);TAB(T1%+2%);
470      R$=RIGHT(T$(I4%+21%),T1%+2%)
480      IF LEN(R$)>0 THEN PRINT#Q%:PRINT#Q%,TAB(T%);R$;TAB(T%+T1%+2%);
485      FOR J%=0% TO 11%
490      K=FNV(V3(I%,J%),V1%(J%))
510      NEXT J% :PRINT#Q%
520 PRINT#Q%:NEXT I%
530      PRINT#Q%,T5$
540      GOTO690
```

```
      !
550 PRINT#Q%                          REM PRINT THE VALUES  (BY DEPARTMENT)
560       I3%=M4%(Y%)
570       M2%=M4%(Y%+3%)
575       IF D%>M2%-I3% THEN D%=M2%-I3%
580 O(J%)=V4(M2%,J%) FOR J%=0% TO 7%
600 FOR I0%=I3% TO I3%+D%+1%
602       I%=I0%-I3%+1%
605       I5%=D1%(I0%)
610       O(J%)=O(J%)-V4(I0%,J%) FOR J%=0% TO 7% IF I%<D%+1%
620       PRINT#Q%,TAB(T%);T$(I2%)  IF I%=D%+2%
630       IF I%<D%+1% THEN I$=D$(I5%):V(J%)=V4(I0%,J%) FOR J%=0% TO 7%
635       IF I%=D%+1% THEN I$=T$(40%) :V(J%)=O(J%) FOR J%=0% TO 7%
640       IF I%=D%+2% THEN I$=T$(29%):V(J%)=V4(M2%,J%) FORJ%=0% TO 7%
650             PRINT#Q%,TAB(T%);I$;TAB(T%+6%);
652       FOR J%=0% TO 7%
656       K=FNV(V(J%),1%)
660       NEXT J%
665       PRINT#Q%,CHR$(12%) IF D%>40% IF I%=43%
670 PRINT#Q% :  NEXT I0%
680       PRINT#Q%,TAB(T%);T$(I2%)
685       NEXT Y%
690 CLOSE 1,2,3,4,5
700 GOTO 30
1000      DEF FNC$(B$,N%)
1010 L1%=(N%-LEN(B$))/2%
1020      FNC$=STRING$(L1%,32%)+B$
1030      FNEND
      !
1100      DEF FNT$(A$,A%)
1110      A1%=LEN(A$)
1115      A2%=0%
1120      A2%=P% IF MID(A$,P%,2%)="19" FOR P%=1 TO A1%
1130      A1$=LEFT(A$,A2%+1%)+CVT$$(NUM$(A%),2%)+"-"+CVT$$(NUM$(A%+1%),2%)
1140      IF A2%=0% THEN FNT$=A$ ELSE FNT$=A1$
1150      FNEND
      !
1200      DEF FNV(V,V%)    ! DETERMINE PRINT UNIT
1220      IF V>0.049 THEN V$=F$: PRINT#Q%,USING RIGHT(V$,V%),V;: GOTO 1290
1230      IF V<0.05 AND V> 0.000 THEN V$=F1$
1240      IF V=0.000 THEN V$=F2$
1250            PRINT#Q%,RIGHT(V$,V%);
1290      FNEND
      !
1300      !       SUBROUTINE FOR PAGE NUMBERS AND SPACING
1320      DIM V1%(11%)
1330      READ V1%(I%) FOR I%=0% TO 11%
1340            DATA 4,2,3,2,1,2,3,2,1,2,3,2
1350      READ V2%(I%) FOR I%=1% TO 6%
1360            DATA 6,8,14,16,22,24
1370      RESTORE
1390      RETURN
      !
32000     END
```

BATCH Program BACHMP.CTL

```
$! THIS CONTROLS PRODUCTION OF MANPOWER SUMS AND TABLES
$! BEFORE RUNNING "MSUM" CHANGE THE YEAR VALUE AFTER THEN FIRST DATA STATEMENT
$! E.G. 77 REFERS TO FISCAL YEAR 1977-78 THE LAST YEAR OF THE CURRENT SURVEY
$JOB/NAME=BACHMP/NOLIMIT
$BASIC/RUN MSUM
$DATA
77
$EOD
$BASIC/RUN TABLEM
$DATA
0
1
1
2
1
30
3
1
4
1
25
5
1
6
1
30
99
$EOD
$RUN $PIP
MPPRIN.DUM<MP.*
$EOD
$RUN $QUE
Q LP0:/MODE:128=MPPRIN.DUM/DE
$EOD
$BASIC/RUN TABLEM
$DATA
-1
1
1
2
1
30
3
1
4
1
25
5
1
6
1
30
99
$EOD
$RUN $PIP
MPPRIN.DUM<MP.*
$EOD
$RUN $QUE
Q LP0:/MODE:128=MPPRIN.DUM/DE
$EOD
$EOJ
```

PROG	CV	DEPT	DFPT	PROGRAM NAMES
1	1	Agr	Agr	Agriculture-Administration
2	1	Agr	Agr	Agriculture-Canadian Grains Commission
3	1	Agr	Agr	Agriculture-Health of Animals
4	1	Agr	Agr	Agriculture-Production & Marketing Board
5	1	Agr	Agr	Agriculture-Research
6	2	AIB	CLCI	Anti-Inflation Board
7	3	AECB	CCEA	Atomic Energy Control Board
8	4	AECL	EACL	Atomic Energy of Canada Limited
9	5	BofC	BduC	Bank of Canada
10	6	CC	CCan	Canada Council
11	7	CAL	ACL	Canadian Arsenals Limited
12	8	CBC	R-C	Canadian Broadcasting Corporation
13	9	CDC	CCL	Canadian Dairy Commision
14	10	CIDA	ACDI	Canadian International Development Agency
15	11	CLFB	OCP	Canadian Livestock Feed Board
16	12	CPDL	SCBEL	Canada Patents & Development Limited
17	13	CRTC	CRTC	Canadian Radio Television Commission
18	14	CTC	CCT	Canadian Transport Commission
19	15	CMHC	SCHL	Central Mortgage and Housing Corporation
20	16	COL	CLO	Commissioner of Official Languages
21	17	DOC	MDC	Communications
22	18	CCA	C&C	Consumer and Corporate Affairs-Administration
23	18	CCA	C&C	Consumer and Corporate Affairs-Combines Investigations & Competition Policy
24	18	CCA	C&C	Consumer and Corporate Affairs-Consumer Affairs
25	18	CCA	C&C	Consumer and Corporate Affairs-Corporate Affairs
26	18	CCA	C&C	Consumer and Corporate Affairs-Intellectual Property
27	19	ECC	CEC	Economic Council of Canada
28	20	EMR	EMR	Energy, Mines and Resources-Earth Sciences
29	20	EMR	EMR	Energy, Mines and Resources-Mineral and Energy Resources
30	21	DOE	MDE	Environment-Administration
31	21	DOE	MDE	Environment-Environmental Services-A.E.S.
32	21	DOE	MDE	Environment-Environmental Services-E.M.S.
33	21	DOE	MDE	Environment-Environmental Services-E.P.S.
34	21	DOE	MDE	Environment-Fisheries and Marine
35	22	EA	AE	External Affairs-Canadian Interests Abroad
36	23	Fin	Fin	Finance-Financial & Economic Policies
37	24	FPRB	CSPA	Food Prices Review Board
38	25	FIRA	AEIE	Foreign Investment Review Agency
39	26	INA	AIN	Indian and Northern Affairs-Indian & Eskimo Affairs
40	26	INA	AIN	Indian and Northern Affairs-Northern Affairs
41	26	INA	AIN	Indian and Northern Affairs- Parks Canada
42	27	ITC	I&C	Industry, Trade and Commerce-Grain and Oil Seeds
43	27	ITC	I&C	Industry, Trade and Commerce-Tourism
44	27	ITC	I&C	Industry, Trade and Commerce-Trade-Industrial
45	28	IC	IC	Information Canada
46	29	IDRC	CRDI	International Developement Research Centre
47	30	Jus	Jus	Justice-Administration of Justice
48	30	Jus	Jus	Justice-Law Reform Commission
49	31	Lab	Trav	Labour

PROG	CV	DEPT	DFPT	PROGRAM NAMES
50	32	M&I	M&I	Manpower & Immigration-Manpower Utilization
51	32	M&I	M&I	Manpower & Immigration-Administration
52	32	M&I	M&I	Manpower & Immigration-Planning & Research
53	33	MRC	CRM	Medical Research Council
54	34	NCC	CCN	National Capital Commission
55	35	DND	DN	National Defence-Defence Service
56	36	NEB	ONE	National Energy Board
57	37	NFB	ONF	National Film Board
58	38	NHB	CPN	National Harbours Board
59	39	NHW	SNBS	National Health & Welfare-Administration
60	39	NHW	SNBS	National Health & Welfare-Fitness and Amateur Sport
61	39	NHW	SNBS	National Health & Welfare-Health Care
62	39	NHW	SNBS	National Health & Welfare-Health Protection
63	39	NHW	SNBS	National Health & Welfare-Income Security and Social Assistance
64	39	NHW	SNBS	National Health & Welfare-Medical Services
65	40	NL	BN	National Library
66	41	NM	MN	National Museums of Canada
67	42	NRC	CNR	National Research Council-Engineering and Natural Science
68	42	NRC	CNR	National Research Council-Scholarships & Grants
69	42	NRC	CNR	National Research Council-Scientific and Technical Information
70	43	NR	RC	National Revenue-Taxation
71	44	PO	MP	Post Office
72	45	PCO	BCP	Privy Council
73	46	PA	AP	Public Archives
74	47	PSC	CFP	Public Service Commission
75	48	DPW	MTP	Public Works-Professional and Technical Services
76	49	DREE	EER	Regional Economic Expansion
77	50	SLSA	VMSL	St. Lawrence Seaway Authority
78	51	MSST	MEST	Science and Technology-Ministry of State for
79	52	ScC	CSc	Science Council of Canada
80	53	SofS	SE	Secretary of State-Arts and Culture
81	53	SofS	SE	Secretary of State-Bilingualism Development
82	53	SofS	SE	Secretary of State-Citizenship
83	53	SofS	SE	Secretary of State-Education Support
84	53	SofS	SE	Secretary of State-Policy Div.
85	53	SofS	SE	Secretary of State-Translation
86	54	SG	MSG	Solicitor General-Administration
87	55	SC	SC	Statistics Canada
88	56	DSS	ASC	Supply and Services-Supply
89	57	MOT	MDT	Transport-Air Transportation
90	57	MOT	MDT	Transport-Administration
91	57	MOT	MDT	Transport-Marine Transportation
92	57	MOT	MDT	Transport-Surface Transportation
93	57	MOT	MDT	Transport-TDA
94	58	TBS	SCT	Treasury Board-Central Administration of the Public Services Program
95	59	UIC	CAC	Unemployment Insurance Commission
96	60	MUA	MEAU	Urban Affairs, Ministry of State for
97	61	DVA	AAC	Veterans Affairs
98	35	DND	DN	National Defence-Defence Research

Tabulation Index

	Natural and Human Sciences	Natural Sciences	Human Sciences
By category, by activity	1	3	5
By department, by category	2	4	6