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FULL TIME EQUIVALENCY (FTE) TRACKING SYSTEM

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Full Time Equivalency (FTE) Tracking System  
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ABSTRACT

In fiscal year 1982 a new system--Full Time Equivalency (FTE)--went into effect for monitoring the size of the Federal work force based on actual hours worked rather than counts of employees on the rolls. To help management keep track of FTE usage, the U.S. Geological Survey's Water Resources Division (WRD) has developed an automated FTE information system which resides on the Survey's Itel (WCC) computer installation. The system, managed by the Statistical Analysis System (SAS) software package, provides standard reports showing FTE use to date at regional, cost center, and project levels. This document contains instructions for producing the reports either interactively through the WYLBUR time-sharing system or as batch jobs.

## CONTENTS

	<u>Page</u>
Abstract .....	1
Introduction .....	2
The WRD FTE tracking system: What it consists of .....	3
Hardware and software details .....	3
Macro programs .....	4
The DIPS merge .....	4
The FORMATS File .....	5
How to get FTE reports .....	7
Interactive retrieval .....	7
Interactive detailed report .....	10
Interactive report by project .....	11
Receiving your report .....	11
Submitting FTE reports as batch jobs .....	12
Batch summary report .....	13
Batch detailed report .....	13
Batch report by project .....	13
Reports based on organization code .....	13
About the timing of reports .....	14
References .....	15
Appendix .....	16
WRD FTE tracking system macro programs .....	16
Biweekly merging programs .....	31

## ILLUSTRATIONS

Figure 1. Format of the FORMATS file .....	6
Figure 2. Summary report of WRD FTE tracking system .....	8
Figure 3. Detailed report of WRD FTE tracking system .....	9
Figure 4. WRD FTE report by project .....	9

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## INTRODUCTION

On October 4, 1981, a new system for monitoring the size of the Federal work force went into effect. The system measures actual hours worked during the entire fiscal year, rather than numbers of employees on the rolls on a specified date. The efficient management of personnel ceilings under the new system clearly is more complicated than under the old, especially for an organization as large as the Water Resources Division (WRD) of the U.S. Geological Survey. This management need has led to the development of the WRD Full Time Equivalency (FTE) Tracking System, a group of computer programs which keep track of actual hours worked in each of several payroll categories, including full time, other than full time, career seasonal, and overtime. These data are maintained at the regional, cost center, and account or organization code levels and are updated after every pay period. At any time, standard reports can be produced showing figures for the most recent and previous pay periods, and for the entire fiscal year to date. This document is both a description of the programs which make up the WRD FTE Tracking System and a user's guide for obtaining reports on hours worked.

The WRD FTE Tracking System:  
What it consists of

At present, the WRD FTE Tracking System resides on the Survey's WCC computer at the Interior building in Washington and comprises:

- two WRD data bases—one organized by account number and one by organization code—each consisting of (A) two SAS data sets for storage of employee/payroll data, (B) two "IBM" sequential data sets for storage of personnel ceilings and the number of the current pay period, and (C) a SAS "formats" data set holding specific information about the organization (its name, division, region, and district code, etc.);
- a series of WYLBUR "execute" files to set into motion the initial loading, updating, and querying of the data bases;
- the computer programs to initiate, update, and restore the FTE data bases and to produce the system's reports;
- a library of cataloged procedures to execute the above programs;
- two computer tapes for each data base: one containing the raw data input to each biweekly update, the other containing a backup copy of the data base as it looked before each such update; these are used for recovery from an erroneous or damaged data base.

Hardware and Software Details

The following pages specifically describe the hardware (machine) and software (program) components of the FTE system. Readers who are not interested in such technical details should skim this section or skip ahead to page 7, "How to Get FTE Reports."

Hardware. The WRD/FTE system runs on the USGS Itel AS/5 computers currently located on the ground floor of the Department of Interior building in Washington, D.C. Reports are transmitted to the Reston subsystem via an Intertec SuperBrain microcomputer. The SuperBrain produces the biweekly summary reports on an Epson MX-80 matrix printer for Headquarters distribution.

Software. The entire FTE system is written in the languages of SAS<sup>1</sup> (Statistical Analysis System) and WYLBUR<sup>2</sup>. SAS has an extensive and versatile set of commands which are unique among computer languages. It has elements of data base management systems such as System 2000, of report generators such as EASYTRIEVE, and of high-level programming languages such as PL/I. In fact, its syntax and many of its words mimic those of PL/I.

## Macro Programs

The programs for updating the FTE data bases and for producing the standard reports are stored in a SAS "macro" library. This library is named VG4MISK.FTE.MACROLIB. SAS "macros" are simply programs consisting of SAS commands which can be invoked by supplying a single "macro name." Unlike programs written in high-level languages like FORTRAN and PL/I, SAS programs cannot be stored in "compiled" form. Instead, they are stored as sequences of "source" commands (commands in the programming language rather than in machine language) which must be compiled each time the programs are run. The slight inefficiencies and increased cost associated with this method of storing programs are more than offset by the ease in maintenance and comprehension by other programmers. These are the main macros, or programs, in the library:

INITIAL: initiates an FTE data base at the beginning of the fiscal year and loads the data for that portion of the first pay period in the current fiscal year;

UPDATER: updates an FTE data base for each pay period except the first;

SUMMARY: produces the biweekly summary report;

DETAIL1 and DETAIL2: produce the biweekly detailed report;

BYPROJ1 and BYPROJ2: produce the report of hours by 3-digit project serial number for a specified cost center

In addition, there are two lesser macros, or subroutines, used by one or more of the main macros; these are:

EMPTYTYPE: Examines the DIPS (Departmental Integrated Personnel System) personnel codes for each employee and, based on OPM's full-time equivalency guidelines<sup>3</sup>, assigns each into the full-time, other than full-time, or not-counted category.

TYPTABL: Uses the type code derived by EMPTYTYPE to place the employee's hours into an appropriate storage position in the FTE data base.

Appendix B contains the source listings of all these macro programs.

## The DIPS Merge

The updating of an FTE data base begins each pay period with the merging of payroll data (hours worked) from the biweekly T&A File with employee information from the DIPS Master Query File. Since this merge is done differently for the two WRD data bases, the SAS commands which direct it are stored not in the macro library but in separate data sets. The WRD biweekly merging programs are named VG4MISK.MERGEWRD and VG4MISK.MERGEORG. The SAS commands contained therein are shown in the appendix (pages 16-30).

## The FORMATS File

For each FTE data base, there must be a sequential data set on the computer containing specific information about that data base. At a minimum, this data set—the FORMATS file—must contain the following data:

1. The number code for the division (i.e., the leftmost digit of the account number; '4' for WRD).
  2. An abbreviated organization name to appear in report headings (e.g., 'WRD', 'ADMIN').
  3. A factor to compensate for the fact that the first pay period of the fiscal year is generally not a full pay period. This is given as a number representing the difference between the actual hours in pay period 1 and a full 80-hour pay period. For example, if pay period 1 contained only 3 work days, then this factor would be 80-24, or 56. This value will of course be the same for all data bases in a given fiscal year.
  4. A table translating region codes into labels (words or abbreviations) to appear in the reports. The region code is the second digit of the 9-digit account number or the leftmost two digits of the organization code.
  5. Another table translating cost center codes to words or abbreviations. The cost center code is the digits 3-4 of the account number or the third and fourth digits.
  6. A SAS "INPUT" statement defining the record structure of the file containing the merged DIPS Payroll and Employee data. (The two WRD data bases have slightly different input formats.)
  7. A "user exit" for special processing of certain payroll transactions. This consists of instructions to the computer coded in the SAS language. Such instructions are used, for example, to specify any departure from the usual levels of reporting—i.e., region and cost center.
- The actual format of the FORMATS file is shown in Figure 1.

# ORGANIZATION DEFINITIONS

division number (for WRD, '4')  
 division abbreviation ('W R D')  
 factor subtracted at beginning of FY (for FY82, 80 hours)  
 total hours in FY (for FY82, '2080')

## REMARKS TO APPEAR ABOVE DETAILED REPORT HEADINGS

SWITCH DENOTING WHETHER CAREER SEASONAL EMPLOYEES ARE TO BE COUNTED AS  
 FULL-TIME PERMANENT

## MACRO \_USERINP

(specifies format of records created in the DIPS merge; must be  
 consistent with output format of that step--see page 13)

## MACRO \_USERXIT

(user exit for special update processing)

## PROC FORMAT

(VALUE statements, or tables correlating DIPS and Payroll codes  
 with text to be substituted in FTE reports)

VALUE CCNAME (cost center codes)  
 VALUE REGNAME (region codes)  
 VALUE OPTION (type of appointment options)  
 VALUE DIVNAME (division code)

Figure 1. Format of the FORMATS file.



## How To Get FTE Reports

There are three basic WRD/FTE reports: the biweekly Summary Report (Figure 2), the Detailed Report by cost center or State (Figure 3), and the even more detailed report By Project for a given cost center (for the organization data base--by office for a given State, Figure 4). You can obtain any of the reports either interactively or by submitting a batch job to the WCC computer.

### Interactive Retrieval

To obtain an FTE report interactively requires (1) a computer terminal (one with a printer if you want hard copy), (2) to be registered as a WYLBUR user on the WCC computer, and (3) to have a WYLBUR library\*. Here is the procedure:

- (1) Call the appropriate WCC asynchronous line (842-0886 (commercial) or FTS 343-2735, 5267, or 5268 for 1200 baud, 842-1997 (commercial) or FTS 343-7100 for 300 baud).
- (2) Enter a carriage return and then "WYLBUR1" (followed by a return). When prompted, supply your WYLBUR user ID (seven characters) and keyword (normally three characters).
- (3) When you are logged on, WYLBUR will signal with a "?" ("COMMAND?", if you are in VERBOSE rather than TERSE mode; you can change modes by entering "SET TERSE" or "SET VERBOSE"). Enter

SET VOL CATLG

if your LOGON procedure hasn't already done so.

- (4) If you have obtained an FTE report interactively before, skip to (5). If this is your first time, enter:

EXEC FROM \$VG4MISK.FT#STARTOUT ON SYS216

This will cause a member named FTE to be stored in your WYLBUR library, so that in the future you have only to . . .

- (5) Enter:

EXEC FROM #FTE CLEAR

A "menu" will appear on your CRT screen, giving you the opportunity to choose between the account number data base and the organization code data base. for either of these choices, a second menu will appear:

W R D F T E R E P O R T S

---

\*To register as a WCC WYLBUR user, call the WCC User Liaison Office on 343-3128 (FTS or commercial). To create your WYLBUR library, sign on to WYLBUR and type:

EXEC FROM \$WYL.PUB.EXECS#LIBALLO

```

*****
* W R D B I W E E K L Y S U M M A R Y R E P O R T P.P. 16 F.Y. 82 *
*****
* REGION * F U L L - T I M E O T H E R T H A N F U L L - T I M E *
* * * * *
* * CEILING THIS AVERAGE PCT CEILING THIS AVERAGE PCT *
* * P.P. THROUGH P.P. THROUGH P.P. THROUGH AHEAD/ *
* * * * *
*****
* * * * *
* HQ 229 175.7 195.3 14.7 73 51.9 51.0 30.2 *
* * * * *
* RT 0 293.7 182.8 . 0 122.1 75.8 . *
* * * * *
* NR 649 645.1 678.6 -4.6 316 186.3 209.1 33.8 *
* * * * *
* SR 491 570.5 564.5 -15.0 236 221.0 211.9 10.2 *
* * * * *
* CR 884 750.3 814.7 7.8 406 218.6 240.4 40.8 *
* * * * *
* WR 555 499.8 548.2 1.2 287 165.8 184.4 35.7 *
* * * * *
* TOTAL 2808 2935.1 2984.0 -6.3 1318 965.7 972.6 26.2 *
*****

```

Figure 2. Summary report of WRD  
FTE tracking system.

WRD BIWEEKLY DETAILED REPORT BY PROJECT P.P. 16 F.Y. 82

\*\*\*\*\*

\* Due to the regional and cost center realignment involving the Office of  
 \* Research and Technical Coordination, which took place after FY 82 had begun,  
 \* RITC hours appear both under the new region 3 ("RT") and under their former  
 \* regions 0, 4, 5, 6, and 7.

\* Also, ceilings for RITC and Labs  
 \* have been arbitrarily prorated among the regions.

\* Reports based on organization code, rather than account, are also  
 \* available. Call the MIS Unit (FTS 928-a861) for details.

\*\*\*\*\*

PROJECT NO.	CEILING *****	LAST P.P.	PERMANENT THIS P.P.	AVERAGE THROUGH THIS PP	HOURS THIS P.P.	TOTAL HOURS THIS FY	PCT AHEAD/ BEHIND	CEILING *****	LAST P.P.	INTERMITTENT THIS P.P.	AVERAGE THROUGH THIS PP	HOURS THIS P.P.	TOTAL HOURS THIS FY	PCT AHEAD/ BEHIND
COST CENTER OPERATIONS REGION HQ														
324	0.0	0.0	0.0	0	0			0.0	0.0	0.0	0	0		
025	0.0	0.0	0.0	0	0			0.0	0.0	0.0	0	0		
053	0.0	0.0	0.0	0	0			0.0	0.0	0.0	0	0		
070	0.0	0.0	0.0	0	0			0.0	0.0	0.0	0	0		
111	0.8	0.8	0.7	50	832			0.0	0.0	0.0	0	0		
167			0.1		128					0.0		0		
174	0.1		0.0		7			0.0		0.0		0		
903	0.0		0.0		0			0.0		0.0		0		
904	0.0	0.5	0.0	54	960			0.0	0.0	0.0	0	0		
907	0.0	0.0	0.0	0	0			0.0	0.0	0.0	0	0		
908	0.0	0.0	0.0	0	0			0.0	0.0	0.0	0	0		
909	0.0	0.0	0.0	0	0			0.0	0.0	0.0	0	0		
910	1.1	1.1	1.4	92	1678			0.0	0.0	0.0	0	0		
911	0.9	0.9	0.7	74	822			0.0	0.0	0.0	0	24		
912	0.0	0.0	0.0	0	0			0.3	0.3	0.2	23	411		
950	2.0	2.9	1.6	220	2101			0.0	0.0	0.0	0	0		
ATOTAL HQ	5.7	6.5	5.4	520	6528			0.3	0.3	0.6	23	737		

Figure 3. Detailed report of WRD  
FTE tracking system.

WRD BIWEEKLY DETAILED REPORT P.P. 16 F.Y. 82

\*\*\*\*\*

\* Due to the regional and cost center realignment involving the Office of  
 \* Research and Technical Coordination, which took place after FY 82 had begun,  
 \* RITC hours appear both under the new region 3 ("RT") and under their former  
 \* regions 0, 4, 5, 6, and 7.

\* Also, ceilings for RITC and Labs  
 \* have been arbitrarily prorated among the regions.

\* Reports based on organization code, rather than account, are also  
 \* available. Call the MIS Unit (FTS 928-a861) for details.

\*\*\*\*\*

ORGANIZATION	FULL-TIME							OTHER THAN FULL-TIME						
	CEILING *****	LAST P.P.	THIS P.P.	AVERAGE THROUGH THIS PP	HOURS LEFT OR TO USE	MRS AHEAD SCHEDULE	PCT AHEAD/ BEHIND	CEILING *****	LAST P.P.	THIS P.P.	AVERAGE THROUGH THIS PP	HOURS LEFT OR TO USE	MRS AHEAD SCHEDULE	PCT AHEAD/ BEHIND
HOSTON	54	77.2	58.1	58.6	51720	-4860	-10.6	20	11.2	11.2	12.6	31626	4676	32.1
ARKANSAS	20			4.5	4770	1020	76.2	12			1.9	2740	770	64.9
COLORADO	80	85.4	100.9	101.1	11074	-676	-6.9	50	25.7	26.4	28.4	7470	8100	25.1
UTAH	74	24.2	24.0	24.4	37164	-296	-1.7	24	9.6	9.0	9.3	22598	3358	33.3
PAINT	42	47.4	45.2	45.2	7610	-1565	-6.1	24	17.1	17.3	15.7	36767	4347	24.0
LOUISIANA	40	3.0	3.2	27.1	89736	19016	43.4	23	0.0	3.0	9.4	11611	17531	45.6
MISSOURI	40	30.0	30.2	30.0	34470	-1470	-7.1	15	8.1	7.7	7.4	23711	4021	42.1
MONTANA	18	54.3	52.4	51.4	44420	-1320	-3.5	24	19.4	19.6	20.1	21449	2409	14.3
NEBRASKA	70	24.0	24.0	24.2	42100	1000	5.6	8	7.3	7.1	8.2	10746	1172	-20.3
Nev.	36	44.7	44.7	63.9	74937	-4243	-10.2	22	24.6	24.6	25.3	76452	5502	23.2
ND.	18	74.8	34.1	37.3	47048	-1652	-6.6	10	7.1	7.9	8.5	21240	6729	32.5
OKLAHOMA	20	72.7	32.5	31.8	34074	-2774	-12.6	14	7.7	7.8	8.9	24716	2096	-44.2
S.W.	74	7.4	32.8	25.2	3710	-2541	-13.6	10	5.3	5.2	5.2	17031	7431	49.7
TEXAS	100	117.0	127.2	111.5	137150	-4650	-6.2	30	22.9	22.5	22.5	62661	12161	40.9
UTAH	47	29.0	27.0	27.1	76745	-7165	-21.2	26	12.9	12.3	12.3	44441	9151	44.8
WYOMING	44	47.0	44.0	42.7	60750	912	2.9	17	10.5	10.4	11.6	37241	5921	32.0
RESEARCH	74			50.0	109510	31670	46.8	24			12.3	51475	12335	57.6
LABS	44	44.7	34.8	35.4	45759	-6802	-20.5	21	14.6	14.7	14.5	50417	8267	37.0
ATOTAL CR	894	771.1	764.8	856.1	1022361	20121	3.2	406	223.0	221.5	252.7	662510	110750	37.7

Figure 4. WRD FTE report by project.

Available reports are:

- (1) Detailed report for WRD by cost center
- (2) Summary report for WRD by region
- (3) Report for cost center by project

Enter the number of the report you want (see Figures 2 through 4 for examples of each). If you select item 2, the Summary Report, it will be displayed on your screen immediately. Otherwise, a second menu will appear, and you will be further prompted as shown below.

### Interactive Detailed Report (Item 1)

If you choose this report, you will first be asked to:

Please enter . .

- (1) For basic report (full time and other than FT) or . . .
- (2) To specify other categories of work

If you choose (1), you are given the choice of displaying the report on your screen or routing it to a printer (remote terminal). A word of caution: if your terminal has a standard 80-column screen rather than the wider 132-column screen of, for example the DatagraphiX 132B, the lines of this report will "wrap around" and be, for all practical purposes, unreadable.

If you choose option (2)--"to specify other categories of work"--you will be shown the eight work categories,

- |                         |                              |
|-------------------------|------------------------------|
| (1) full-time permanent | (5) part-time permanent      |
| (2) other than FTP      | (6) temporary (all)          |
| (3) overtime            | (7) intermittent             |
| (4) career seasonal     | (8) uncounted (exempt) hours |

and asked to select two of them. You'll be prompted for job class; enter the class or carriage return for the default class, B. The message "JOB \_\_\_\_\_ SUBMITTED" will appear on your screen, indicating that a job has been submitted to the computer to produce the report you specified. (nnnn is your four-digit job number, XXXXXXXX is your eight-character job name composed of your seven-character WYLBUR ID and a number supplied by WYLBUR.) Upon completion, the report will be routed back to your terminal. Depending on the size of the job queue, this may take from several minutes to several hours for a "class B" job. You can determine the status of your job by typing the WYLBUR command:

locate

Jobs awaiting execution are displayed in the following form:

JOB nnnn XXXXXXXX AW EXEC C=B POS=mm PRI=05

Where nnnn and XXXXXXXX have the meanings described above and C=B means "class B", mm is the position of your job in the queue for that class (i.e., POS=13 means there are 12 class B jobs ahead of yours in the queue), and PRI=05 is a standard priority indicator.

After your job has executed, typing the "locate" command will result in the message:

JOB nnnn XXXXXXXX AW FETCH

The section on "Receiving your report," below, explains what to do next.

### Interactive Report by Project (Item 3)

If you choose this report, which shows hours worked by project within a given cost center, you will first be given the same choice as for the Detailed Report, described above. Then you will be asked to enter the number of the cost center to be reported. (The cost center is the third and fourth digits of the account number. For the organization data base, read "state" instead; the State code is the third and fourth digits of the organization code.) After responding, you will receive the message "JOB nnnn XXXXXXXX SUBMITTED," as with the second option of the Detailed Report described above.

### Receiving Your Report

If you selected item (3), the report By Project, or the second option for the detailed report (item 1), a batch job will have been submitted to the computer to produce your report. You will know the job has run when you receive the message

JOB nnnn XXXXXXXX AW FETCH

after entering the WYLBUR "locate" command. At this point you can do any of the following:

- (1) fetch the report and display it on your CRT screen;
- (2) fetch the report and print it on the printer attached to your CRT terminal (if you have one);
- (3) fetch the report and store it on disk (computer storage) for later use;
- (4) route the report to a batch (RJE) terminal (such as a Harris or Data 100) for printing.

To fetch the report (bring it into your WYLBUR "active file"), enter  
fetch nnnn file 1

where nnnn is the four-digit job number displayed in response to your "locate" command. To display the report on your CRT or print it on your terminal's printer (if any), enter

list unn

(unn stands for "unnumbered"—that is, without the line numbers with which WYLBUR normally precedes its listings). Note that the report is 132 characters wide. If your terminal has a standard 80-character screen, each line will "wrap around"—that is, overflow into a second line—and the report's columnar format will be made difficult to read. If, on the other hand, you have a Datagraphix 132B or similar wide-screen CRT, the reports will be displayed intact.

Once you have fetched your report, you can store it on the mainframe computer in your WYLBUR library simply by entering

SAVE #somenam

where somename is a string of one to eight letters or numbers, the first of which must be a letter.

Examples of valid names are:

```
#SUMMARY
#DETAIL03
#REPT8201
#X99
```

Caution: Do not use #FTE for storing a report, since #FTE is the report handler previously stored in your library to enable you to get FTE reports. If you try to save your active file using a name already in use, WYLBUR will reply:

```
MEMBER name ALREADY IN LIB. REPLACE?
```

Unless you want to erase the current contents of the member "name," you should answer "NO" and select a different name. (The term "member" refers to individual data sets stored as part of a "library," or "partitioned data set.")

Later, when you want to look at the report you have stored, enter:

```
USE #name
```

where name is the name under which you saved the report earlier.

If you want a printed report but don't have a printer attached to your CRT terminal, you can route the report to the nearest RJE terminal and collect the printout there. (All WRD District offices have RJE terminals, as do some subdistrict offices.) Find out the terminal number, then enter:

```
ROUTE nnnn REMOTE ttt
```

where nnnn is the job number and ttt is the terminal number. After your report has printed, you will be able to identify by its first and last pages, which will contain your WYLBUR ID.

### Submitting FTE Reports as Batch Jobs

If you don't have access to an interactive terminal, you can obtain WRD FTE reports by submitting a card deck through a batch (RJE) terminal such as the Data 100 Model 70 or 78. The job streams for all three reports described above should be of the following form:

```
//XXXXXXXX JOB (999999999,H159),yourname,CLASS=y
//PROCLIB DD DSN=VG4MISK.PROCLIB,DISP=SHR
// DD DSN=SYS1.PPROCLIB,UNIT=3330-1,VOL=SER=MVSPPS,DISP=SHR
/*ROUTE PRINT RMTttt
// EXEC REPORTER
//REQUEST DD *
```

[report specifications go here]

```
//
```

XXXXXXXX is the job name, consisting of your seven-character WYLBUR ID and an eighth letter or numeral of your choice; 999999999 is your nine-digit account number; yourname is your last name, or the name to appear on the first and last pages of your printout; y is the job class (A, B, D, or F), and ttt is the number of the terminal to which the report is to be routed. The "report specifications" for each report are described below.

### Batch Summary Report

To get the Summary Report using a batch job, your report specifications should consist of the single card:

```
    _SUMMARY
```

The column position of the specification doesn't matter. "\_SUMMARY" is the name of the SAS macro which produces this report (see page 4).

### Batch Detailed Report

The specifications for the detailed report are:

```
    _DETAIL1
    _LEFT=m; RIGHT=n;
    _DETAIL2
```

Again, column positions are unimportant; m is the number of the work category to appear on the left side of the report; n, the category to appear on the right. The work categories and their numbers are given on page 10.

### Batch Report by Project

The specifications for the report by project are:

```
    _BYPROJ1
    _LEFT=m; RIGHT=n;
    _COSTCNTR=qq;
    _BYPROJ2
```

m and n stand for the left and right work categories, as described above; qq is the two-digit code for the cost center for which the report is to be produced. (The cost center code is the third and fourth digits of the nine-digit account number. If the cost center number is less than 10, you need not include the leading zero.)

### Reports Based on Organization Code

The above batch reports are all based on account number. The procedure for getting reports from the organization code data base is identical except for the following:

- (1) the card  

```
    // EXEC REPORTER is replaced by the card
    // EXEC ORGREPT
```
- (2) the cost center code ("COSTCNTR") in the report by project is replaced by the State code (i.e., digits 3 and 4 of the organization code)

There is one additional difference. The WRD FTE account number data base reflects only hours worked by those employees charged against WRD accounts (i.e., whose account numbers begin with "4"). Since employees exist who have WRD organization codes but whose work is charged against non-WRD accounts (and vice versa), the numbers of hours and equivalent full-time employees in the organization code data base are slightly higher than those in the account number data base.

### About the Timing of Reports

The information in all the reports described above is for the most recent pay period for which information is available. For a given pay period, the earliest you can expect the data to be available is the payday for that pay period (i.e., the second Tuesday after it ends). Typically, the T&A data are not accessible from the DIPS system until several days after payday. To find out what pay period is currently reported, sign on to WYLBUR and display the Summary Report.



## REFERENCES

<sup>1</sup>Helwig, Jane T., and Council, Kathryn A., editors, SAS User's Guide: 1979 Edition, SAS Institute, Inc. Cary, North Carolina.

<sup>2</sup>On-Line Business Systems, Inc., 1980. WYLBUR Reference Manual.

<sup>3</sup>Office of Personnel Management, OPM Federal Personnel Manual Letter 298-11, September 23, 1980: "Reporting Instructions for the Monthly Report of Full-Time Equivalent/Work-Year Civilian Employment (SF 113-G)."

## APPENDIX

## WRD/MIS FTE Tracking System Macro Programs

```

OPTIONS NOSOURCE MACROGEN ERRORS=100 LS=132;
MACRO _UPDATER
*
--0--  DISPLAY CONTENTS OF SAS DATA SETS
      ;
PROC CONTENTS DATA=DATA._ALL_ MAP NODS;
PROC CONTENTS DATA=ACCOUNTS._ALL_ MAP NODS;
*
--1--  Back up data base for past pay period
      ;
DATA TAPEDATA.PREVIOUS (GEN=3);
SET DATA.PREVIOUS (READ=XXX);
DATA TAPEDATA.CURRENT (GEN=3);
SET DATA.CURRENT;
DATA TAPEDATA.TOTALS (GEN=3);
SET DATA.TOTALS;
DATA TAPEDATA.ACCTPREV (GEN=3);
SET ACCOUNTS.PREVIOUS (READ=XXX);
DATA TAPEDATA.ACCTCURR (GEN=3);
SET ACCOUNTS.CURRENT;
DATA TAPEDATA.ACCTTOT (GEN=3);
SET ACCOUNTS.TOTALS;
*
--2--  COPY CURRENT DATA TO PREVIOUS
      ;
DATA DATA.PREVIOUS (READ=XXX);
SET DATA.CURRENT;
  RENAME THIS1=LAST1 THIS2=LAST2 THIS3=LAST3 THIS4=LAST4
        THIS5=LAST5 THIS6=LAST6 THIS7=LAST7 THIS8=LAST8;
PROC PRINT;  TITLE PREVIOUS P.P. DATA;
DATA ACCOUNTS.PREVIOUS (READ=XXX);
SET ACCOUNTS.CURRENT;
  RENAME THIS1=LAST1 THIS2=LAST2 THIS3=LAST3 THIS4=LAST4
        THIS5=LAST5 THIS6=LAST6 THIS7=LAST7 THIS8=LAST8;
*
*
--1--  READ DIPS DATA, DETERMINE FULL-TIME AND OTFT HOURS
      ;
DATA PASS1;
INFILE DIPS;
  USERINP
DROP TRANSACT;
IF DIV = _DIVNUM AND OBJECT = 10 AND TRANSACT = '8';
  USERXIT
PROC FREQ; TABLES OBJECT; WEIGHT HOURS;
DATA; SET PASS1;

```

```

IF SCHED = 'G';
PROC PRINT;
DATA TESTPP;
INFILE THISPP;
INPUT DIV LAST_PP LAST_FY;
DATA PASS2;
MERGE PASS1 TESTPP; BY DIV;
  IF THIS_PP = LAST_PP + 1 THEN
    ABORT 1;
  * U0001: ATTEMPT TO UPDATE WRONG PAY PERIOD;
  _EMPTYTYPE
*
--2-- TOTAL COUNTED HOURS BY ACCOUNT
;
PROC SORT; BY REG CC SER;
DATA ACCOUNTS.CURRENT;
SET PASS2; BY REG CC SER;
  ARRAY THIS(OPT) THIS1-THIS8;
  ARRAY ADJUST(OPT) ADJUST1-ADJUST8;
  KEEP DIV ORG1 ORG2 REG CC SER TYPE THIS1-THIS8 ADJUST1-ADJUST8;
  IF FIRST.REG OR FIRST.CC OR FIRST.SER THEN DO OVER THIS;
    THIS = 0;
    ADJUST = 0;
  END;
  IF PP = THIS_PP THEN DO;
    _TYPTABL
  END;
  ELSE IF PP THIS_PP & FY = LAST_FY THEN DO;
    IF TYPE = 'F' THEN ADJUST1 + HOURS;
    ELSE IF TYPE = 'O' THEN ADJUST2 + HOURS;
    ELSE IF TYPE = 'V' THEN ADJUST3 + HOURS;
    ELSE IF TYPE = 'S' THEN ADJUST4 + HOURS;
    ELSE IF TYPE = 'P' THEN ADJUST5 + HOURS;
    ELSE IF TYPE = 'T' THEN ADJUST6 + HOURS;
    ELSE IF TYPE = 'I' THEN ADJUST7 + HOURS;
    ELSE IF TYPE = 'U' THEN ADJUST8 + HOURS;
    ELSE ABORT 9;
  END;
  IF LAST.REG OR LAST.CC OR LAST.SER THEN OUTPUT;
*
--3-- UPDATE ACCOUNTS.TOTALS DATA SET
;
DATA NEWTOTAL;
UPDATE ACCOUNTS.TOTALS ACCOUNTS.CURRENT;
  BY REG CC SER;
  ARRAY THIS(OPT) THIS1-THIS8;
  ARRAY LAST(OPT) LAST1-LAST8;
  ARRAY TOTAL(OPT) TOTAL1-TOTAL8;
  ARRAY ADJUST(OPT) ADJUST1-ADJUST8;
  DO OVER TOTAL;
    TOTAL + THIS + ADJUST;
  END;

```

```

DATA ACCOUNTS.TOTALS (DROP = THIS1-THIS8 LAST1-LAST8);
SET NEWTOTAL;
*
--4-- TOTAL COUNTED HOURS BY ORGANIZATION
;
DATA DATA.CURRENT;
SET PASS2; BY REG CC;
  ARRAY THIS(OPT) THIS1-THIS8;
  ARRAY ADJUST(OPT) ADJUST1-ADJUST8;
  KEEP DIV ORG1 ORG2 REG CC SER TYPE THIS1-THIS8 ADJUST1-ADJUST8;
  IF FIRST.REG OR FIRST.CC THEN DO OVER THIS;
    THIS = 0;
    ADJUST = 0;
  END;
  IF PP = THIS_PP THEN DO;
    _TYPTABL_
  END;
  ELSE IF PP THIS_PP & FY = LAST_FY THEN DO;
    IF TYPE = 'F' THEN ADJUST1 + HOURS;
    ELSE IF TYPE = 'O' THEN ADJUST2 + HOURS;
    ELSE IF TYPE = 'V' THEN ADJUST3 + HOURS;
    ELSE IF TYPE = 'S' THEN ADJUST4 + HOURS;
    ELSE IF TYPE = 'P' THEN ADJUST5 + HOURS;
    ELSE IF TYPE = 'T' THEN ADJUST6 + HOURS;
    ELSE IF TYPE = 'I' THEN ADJUST7 + HOURS;
    ELSE IF TYPE = 'U' THEN ADJUST8 + HOURS;
    ELSE ABORT 9;
  END;
  IF LAST.REG OR LAST.CC THEN OUTPUT;
PROC PRINT;
  TITLE _DIVHEAD FTE DATA FOR _THISPP;
*
--5-- UPDATE TOTALS DATA SET
;
DATA NEWTOTL;
UPDATE DATA.TOTALS DATA.CURRENT;
  BY REG CC;
  ARRAY THIS(OPT) THIS1-THIS8;
  ARRAY TOTAL(OPT) TOTAL1-TOTAL8;
  ARRAY ADJUST(OPT) ADJUST1-ADJUST8;
  DO OVER TOTAL;
    TOTAL + THIS + ADJUST;
  END;
DATA DATA.TOTALS (DROP = THIS1-THIS8 LAST1-LAST8);
SET NEWTOTL;
PROC PRINT;
  TITLE NEW TOTALS DATA;
*
--6-- Increment Pay Period #
;
DATA _NULL_;
SET TESTPP;

```

```

FILE THISPP;
  IF LAST_PP = 26 THEN ERROR 'WE HAVE PASSED P.P. 26!!!';
  ELSE DO;
    LAST_PP + 1;
  END;
  PUT DIV LAST_PP LAST_FY;
%
MACRO _INITIAL
*
--0--  DISPLAY CONTENTS OF SAS DATA SETS
;
PROC CONTENTS DATA=DATA._ALL_ MAP NODS;
PROC CONTENTS DATA=ACCOUNTS._ALL_ MAP NODS;
*
--1--  READ DIPS DATA, DETERMINE FULL-TIME AND OTFT HOURS
;
DATA PASS1;
INFILE DIPS;
  _USERINP
DROP TRANSACT;
IF DIV = _DIVNUM AND OBJECT = 10 AND TRANSACT = '8';
  _USERXIT
PROC FREQ; TABLES OBJECT; WEIGHT HOURS;
DATA; SET PASS1;
IF SCHED = 'G';
PROC PRINT;
DATA TESTPP;
INFILE THISPP;
INPUT DIV LAST_PP LAST_FY;
DATA PASS2;
MERGE PASS1 TESTPP; BY DIV;
  IF THIS_PP = '02' THEN
    ABORT 1;
  * U0001: ATTEMPT TO UPDATE WRONG PAY PERIOD;
  IF PP = '02';
  _EMPTYE
*
--2--  TOTAL COUNTED HOURS BY ACCOUNT
;
PROC SORT; BY REG CC SER;
DATA ACCOUNTS.CURRENT;
SET PASS2; BY REG CC SER;
  ARRAY THIS(OPT) THIS1-THIS8;
  KEEP DIV ORG1 ORG2 REG CC SER TYPE THIS1-THIS8 ;
  IF FIRST.REG OR FIRST.CC OR FIRST.SER THEN DO OVER THIS;
    THIS = 0;
  END;
  _TYPTABL
  IF LAST.REG OR LAST.CC OR LAST.SER THEN OUTPUT;
PROC PRINT;
  TITLE _DIVHEAD FTE DATA FOR _THISPP BY ACCOUNT;
*
```

--3-- INITIALIZE ACCOUNTS.TOTALS & PREVIOUS DATA SETS

```

;
DATA ACCOUNTS.TOTALS (DROP = THIS1-THIS8 LAST1-LAST8)
  ACCOUNTS.PREVIOUS (DROP = THIS1-THIS8 TOTAL1-TOTAL8);
SET ACCOUNTS.CURRENT;
  ARRAY THIS(OPT) THIS1-THIS8;
  ARRAY LAST(OPT) LAST1-LAST8;
  ARRAY TOTAL(OPT) TOTAL1-TOTAL8;
  DO OVER TOTAL;
    TOTAL = THIS;
  END;
  OUTPUT ACCOUNTS.TOTALS;
  DO OVER LAST;
    LAST = 0;
  END;
  OUTPUT ACCOUNTS.PREVIOUS;

```

\*

--4-- TOTAL COUNTED HOURS BY ORGANIZATION

```

;
DATA DATA.CURRENT;
SET PASS2; BY REG CC;
  ARRAY THIS(OPT) THIS1-THIS8;
  KEEP DIV ORG1 ORG2 REG CC TYPE THIS1-THIS8 ;
  IF FIRST.REG OR FIRST.CC THEN DO OVER THIS;
    THIS = 0;
  END;
  _TYPTABL
  IF LAST.REG OR LAST.CC THEN OUTPUT;
PROC PRINT;
  TITLE _DIVHEAD FTE DATA FOR _THISPP;

```

\*

--5-- INITIALIZE TOTALS AND PREVIOUS DATA SETS

```

;
DATA DATA.TOTALS (DROP = THIS1-THIS8 LAST1-LAST8)
  DATA.PREVIOUS (DROP = THIS1-THIS8 TOTAL1-TOTAL8);
SET DATA.CURRENT;
  ARRAY THIS(OPT) THIS1-THIS8;
  ARRAY TOTAL(OPT) TOTAL1-TOTAL8;
  ARRAY LAST(OPT) LAST1-LAST8;
  DO OVER TOTAL;
    TOTAL = THIS;
  END;
  OUTPUT DATA.TOTALS;
  DO OVER LAST;
    LAST = 0;
  END;
  OUTPUT DATA.PREVIOUS;
DATA;
SET DATA.TOTALS;
PROC PRINT;
  TITLE TOTALS DATA;
DATA;

```

```

SET DATA.PREVIOUS (READ=XXX);
PROC PRINT;
    TITLE  PREVIOUS DATA;
DATA;
SET DATA.CURRENT;
PROC PRINT;
    TITLE  CURRENT DATA;
%
MACRO __DETAIL1
*
THIS MODULE PRODUCES THE BIWEEKLY DETAILED EMPLOYMENT REPORT
BASED ON THE MAIN WCC DATA BASE;
*
--1--  GET NUMBER OF "THIS PAY PERIOD"
    ;
DATA THISPP;
INFILE THISPP;
INPUT DIV LAST_PP LAST_FY;
*
--2--  COMPUTE F.T.E. HOURS THROUGH THIS PAY PERIOD
    ;
    FACTOR = __FACTOR;
    * NOTE: "__FACTOR" SHOULD BE CHANGED AT START OF NEW FISCAL
        YEAR TO COMPENSATE FOR PARTIAL PAY PERIOD 01;
    ELAPSED = LAST_PP*80 - FACTOR;
*
--3--  INPUT DATA FOR F.T.E. CEILINGS
    ;
DATA CEILINGS;
INFILE CEILINGS;
    ARRAY CEILN(OPT) CEILN1-CEILN2;
    INPUT REG CC CEILN1-CEILN2;
DATA MERGE1;
MERGE CEILINGS DATA.PREVIOUS (READ=XXX) DATA.CURRENT DATA.TOTALS;  BY REG CC;
    DIV = __DIVNUM;
*
--4--  CREATE FINAL MERGED DATA SET FOR REPORT PRODUCTION
    ;
DATA REPORT1;
MERGE THISPP MERGE1;  BY DIV;
*
--5--  GET USER OPTIONS.  AVAILABLE OPTIONS ARE:
        (B)--TYPE OF HOURS (DEFAULT IS FULLTIME, OTFT),
            ANY 2 MAY BE SELECTED FROM
                1 = FULLTIME
                2 = OTHER THAN FULLTIME
                . . .
    ;
    * NOTE: DEFAULT OPTIONS-- ;
    LEFT = 1;  RIGHT = 2;
%
MACRO __DETAIL2

```

```

*
--7-- PRODUCE DETAILED REPORT BY ORGANIZATION (COST CENTER)
;
DATA _NULL_;
SET REPORT1;
  BY DIV REG CC;
  FILE PRINT HEADER=HEADING NOTITLES LINESIZE=132;
  ARRAY THIS(OPT) THIS1-THIS8;
  ARRAY LAST(OPT) LAST1-LAST8;
  ARRAY TOTAL(OPT) TOTAL1-TOTAL8;
  ARRAY CEILN(OPT) CEILN1-CEILN8;
  ARRAY COL COL1-COL14;
  ARRAY SUB SUB1-SUB14;
  ARRAY TOT TOT1-TOT14;
  IF FIRST.REG THEN DO;
    IF FIRST.DIV THEN PUT _PAGE_;
    DO OVER SUB;
      SUB = 0;
    END;
  END;
  OPT = LEFT;
  COL1 = CEILN;
  COL2 = LAST/80;
  COL3 = THIS/80;
  COL4 = TOTAL/ELAPSED;
  COL5 = CEILN* FYHOURS - TOTAL;
  COL6 = CEILN*ELAPSED - TOTAL;
  COL7 = (1 - COL4/COL1) * 100;
  OPT = RIGHT;
  COL8 = CEILN;
  COL9 = LAST/80;
  COL10 = THIS/80;
  COL11 = TOTAL/ELAPSED;
  COL12 = CEILN* FYHOURS - TOTAL;
  COL13 = CEILN*ELAPSED - TOTAL;
  COL14 = (1 - COL11/COL8) * 100;
  SUB1+COL1; SUB2+COL2; SUB3+COL3; SUB4+COL4; SUB5+COL5; SUB6+COL6;
  SUB8+COL8; SUB9+COL9; SUB10+COL10; SUB11+COL11; SUB12+COL12; SUB13+COL13;
  TOT1+COL1; TOT2+COL2; TOT3+COL3; TOT4+COL4; TOT5+COL5; TOT6+COL6;
  TOT8+COL8; TOT9+COL9; TOT10+COL10; TOT11+COL11; TOT12+COL12; TOT13+COL13;
  PUT CC CCNAME. @;
  PUT (COL1-COL7) (8. 8.1 8.1 8.1 9. 9. 8.1) ' ' @;
  PUT (COL8-COL14) (8. 8.1 8.1 8.1 9. 9. 8.1);
  IF LAST.REG THEN DO;
    SUB7 = (1 - SUB4/SUB1) * 100;
    SUB14 = (1 - SUB11/SUB8) * 100;
    PUT / ' *TOTAL ' REG REGNAME. @;
    PUT (SUB1-SUB7) (8. 8.1 8.1 8.1 9. 9. 8.1) ' ' @;
    PUT (SUB8-SUB14) (8. 8.1 8.1 8.1 9. 9. 8.1);
  END;
  IF LAST.DIV THEN DO;
    TOT7 = (1 - TOT4/TOT1) * 100;

```



```

TOT14 = (1 - TOT11/TOT8) * 100;
PUT // 132*'=';
PUT / '**TOTAL ' DIV DIVNAME. @ ;
PUT (TOT1-TOT7) (7. 8.1 8.1 8.1 9. 9. 8.1) ' ' @;
PUT (TOT8-TOT14) (7. 8.1 8.1 8.1 9. 9. 8.1);
END;
RETURN;
HEADING:
  PUT @30 _DIVHEAD ' BI WEEKLY DETAILED REPORT'
  ' P.P.' LAST_PP ' F.Y. 8' LAST_FY;
_REMARKS
  PUT / 132*'-';
  PUT / 'ORGANIZATION ' @25 LEFT OPTION. @90 RIGHT OPTION. ;
  PUT / @14
  'CEILING LAST THIS AVERAGE HOURS HRS AHEAD PCT' @;
  PUT @77
  'CEILING LAST THIS AVERAGE HOURS HRS AHEAD PCT' ;
  PUT @14
  '***** P.P. P.P. THROUGH LEFT OR BEHIND AHEAD/' @;
  PUT @77
  '***** P.P. P.P. THROUGH LEFT OR BEHIND AHEAD/' ;
  PUT @14
  ' THIS PP TO USE SCHEDULE BEHIND' @;
  PUT @77
  ' THIS PP TO USE SCHEDULE BEHIND' ;
  PUT 132*'-';
  PUT / ;
  RETURN;
%
MACRO _SUMMARY
*
THIS MODULE PRODUCES THE BIWEEKLY SUMMARY EMPLOYMENT REPORT
BASED ON THE MAIN WCC DATA BASE;
*
--1-- GET NUMBER OF "THIS PAY PERIOD"
;
DATA THISPP;
INFILE THISPP;
INPUT DIV LAST_PP LAST_FY;
*
--2-- COMPUTE F.T.E. HOURS THROUGH THIS PAY PERIOD
;
FACTOR = _FACTOR;
* NOTE: "FACTOR" SHOULD BE CHANGED AT START OF NEW FISCAL
YEAR TO COMPENSATE FOR PARTIAL PAY PERIOD 01;
ELAPSED = LAST_PP*80 - FACTOR;
*
--3-- INPUT DATA FOR F.T.E. CEILINGS
;
DATA CEILINGS;
INFILE CEILINGS;
ARRAY CEILN(OPT) CEILN1-CEILN2;

```

```

INPUT REG CC CEILN1-CEILN2;
DATA MERGE1;
MERGE CEILINGS DATA.PREVIOUS (READ=XXX) DATA.CURRENT DATA.TOTALS; BY REG CC;
; DIV = _DIVNUM;
*
--4-- CREATE FINAL MERGED DATA SET FOR REPORT PRODUCTION
;
DATA REPORT1;
MERGE THISPP MERGE1; BY DIV;
*
--5-- GET USER OPTIONS. AVAILABLE OPTIONS ARE:
      (B)—TYPE OF HOURS (DEFAULT IS FULLTIME, OTFT),
          ANY 2 MAY BE SELECTED FROM
              1 = FULLTIME
              2 = OTHER THAN FULLTIME
              . . .
;
* NOTE: DEFAULT VALUES-- ;
; LEFT = 1; RIGHT = 2;
PROC PRINT;
*
--6-- PRODUCE SUMMARY REPORT BY REGION
;
DATA NULL;
SET REPORT1;
BY DIV REG;
FILE PRINT HEADER=HEADING NOTITLES LINESIZE=80;
ARRAY THIS(OPT) THIS1-THIS8;
ARRAY LAST(OPT) LAST1-LAST8;
ARRAY TOTAL(OPT) TOTAL1-TOTAL8;
ARRAY CEILN(OPT) CEILN1-CEILN2;
ARRAY COL COL1-COL8;
ARRAY SUB SUB1-SUB8;
ARRAY TOT TOT1-TOT8;
IF FIRST.REG THEN DO;
    DO OVER SUB;
        SUB = 0;
    END;
END;
OPT = 1;
COL1 = CEILN;
COL2 = THIS/80;
COL3 = TOTAL/ELAPSED;
COL4 = (1 - COL3/COL1) * 100;
OPT = 2;
COL5 = CEILN;
COL6 = THIS/80;
COL7 = TOTAL/ELAPSED;
COL8 = (1 - COL7 /COL5) * 100;
SUB1+COL1; SUB2+COL2; SUB3+COL3; SUB5+COL5; SUB6+COL6; SUB7+COL7;
TOT1+COL1; TOT2+COL2; TOT3+COL3; TOT5+COL5; TOT6+COL6; TOT7+COL7;
IF LAST.REG THEN DO;

```

```

SUB4 = (1 - SUB3/SUB1) * 100;
SUB8 = (1 - SUB7 /SUB5) * 100;
PUT '*' @10 '*' @79 '*';
PUT '*' ' REG REGNAME. @10 '*' @ ;
PUT @12 (SUB1-SUB8) (6. 8.1 8.1 8.1 12. 8.1 8.1 8.1) ' *';
PUT '*' @10 '*' @79 '*';
END;
IF LAST.DIV THEN DO;
  PUT '*' @10 '*' @79 '*';
  TOT4 = (1 - TOT3/TCT1) * 100;
  TOT8 = (1 - TOT7 /TOT5) * 100;
  PUT '*' TOTAL '*' @12 (TOT1-TOT8) (6. 8.1 8.1 8.1 12. 8.1 8.1 8.1) ' *';
  PUT '*' @10 '*' @79 '*';
  PUT 79***';
END;
RETURN;
HEADING:
  PUT 79***' / '*' @79 '*';
  PUT '*' @07 _DIVHEAD ' B I W E E K L Y S U M M A R Y R E P O R T '
    ' P.P. ' LAST_PP ' F.Y. 8' LAST_FY @79 '*';
  PUT '*' @79 '*';
  PUT 79***';
  PUT '*' @10 '*' @79 '*';
  PUT '*' REGION '*' @12 LEFT OPTION. @42 RIGHT OPTION. @79 '*';
  PUT '*' @10 '*' @79 '*';
  PUT '*' @10 '*' @12
    'CEILING THIS AVERAGE PCT' @;
  PUT @49
    'CEILING THIS AVERAGE PCT' @79 '*';
  PUT '*' @10 '*' @12
    ' P.P. THROUGH AHEAD/' @;
  PUT @49
    ' P.P. THROUGH AHEAD/' @79 '*';
  PUT '*' @10 '*' @12
    ' THIS PP BEHIND' @;
  PUT @49
    ' THIS PP BEHIND' @79 '*';
  PUT 79***';
  PUT '*' @10 '*' @79 '*';
RETURN;
%
MACRO _BYPROJ1
*
THIS MODULE PRODUCES THE BIWEEKLY DETAILED EMPLOYMENT REPORT
BY PROJECT (ACCOUNT);
*
--1-- GET NUMBER OF "THIS PAY PERIOD"
;
DATA THISPP;
DNFILE THISPP;
INPUT DIV LAST_PP LAST_FY;
*
```

```

--2-- COMPUTE F.T.E. HOURS THROUGH THIS PAY PERIOD
      ;
      FACTOR = _FACTOR;
      * NOTE: "FACTOR" SHOULD BE CHANGED AT START OF NEW FISCAL
            YEAR TO COMPENSATE FOR PARTIAL PAY PERIOD 01;
      ELAPSED = LAST_PP*80 - FACTOR;
*
--3-- INPUT DATA FOR F.T.E. CEILINGS
      ;
      DATA CEILINGS;
      INFILE CEILINGS;
      ARRAY CEILN(OPT) CEILN1-CEILN2;
      INPUT REG CC CEILN1-CEILN2;
      DATA MERGE1;
      MERGE ACCOUNTS.PREVIOUS (READ=XXX) ACCOUNTS.CURRENT ACCOUNTS.TOTALS;
      BY REG CC SER;
      DATA MERGE2;
      MERGE CEILINGS MERGE1; BY REG CC;
      DIV = _DIVNUM;
*
--4-- CREATE FINAL MERGED DATA SET FOR REPORT PRODUCTION
      ;
      DATA REPORT1;
      MERGE THISPP MERGE2; BY DIV;
*
--5-- GET USER OPTIONS. AVAILABLE OPTIONS ARE:
      (A)--COST CENTER (SUPPLY 2-DIGIT CODE)
      (B)--TYPE OF HOURS (DEFAULT IS FULLTIME, OTFT),
            ANY 2 MAY BE SELECTED FROM
            1 = FULLTIME
            2 = OTHER THAN FULLTIME
            . . .
      ;
%
MACRO _BYPROJ2
*
--7-- PRODUCE DETAILED REPORT BY PROJECT (ACCOUNT NUMBER)
      ;
      DATA _NULL_;
      SET REPORT1;
      BY DIV REG CC SER;
      FILE PRINT HEADER=HEADING NOTITLES LINESIZE=132;
      ARRAY THIS(OPT) THIS1-THIS8;
      ARRAY LAST(OPT) LAST1-LAST8;
      ARRAY TOTAL(OPT) TOTAL1-TOTAL8;
      ARRAY CEILN(OPT) CEILN1-CEILN8;
      ARRAY COL COL1-COL14;
      ARRAY SUB SUB1-SUB14;
      ARRAY TOT TOT1-TOT14;
      RETAIN SUB1-SUB14;
      IF CC = COSTCNTR THEN DO;
      IF FIRST.CC THEN DO;

```

```

DO OVER SUB;
    SUB = 0;
END;
PUT / 'COST CENTER ' CC CCNAME. ' REGION ' REG REGNAME. ;
OPT = LEFT; PUT / @11 CEILN 8. @ ;
SUB1 = CEILN;
OPT = RIGHT; PUT @74 CEILN 8. ;
SUB8 = CEILN;
TOT1 + SUB1; TOT8 + SUB8;
END;
OPT = LEFT;
COL2 = LAST/80;
COL3 = THIS/80;
COL4 = TOTAL/ELAPSED;
COL5 = THIS;
COL6 = TOTAL;
COL7 = (1 - COL4/COL1) * 100;
OPT = RIGHT;
COL9 = LAST/80;
COL10 = THIS/80;
COL11 = TOTAL/ELAPSED;
COL12 = THIS;
COL13 = TOTAL;
COL14 = (1 - COL11/COL8) * 100;
SUB2+COL2; SUB3+COL3; SUB4+COL4; SUB5+COL5; SUB6+COL6;
SUB9+COL9; SUB10+COL10; SUB11+COL11; SUB12+COL12; SUB13+COL13;
TOT2+COL2; TOT3+COL3; TOT4+COL4; TOT5+COL5; TOT6+COL6;
TOT9+COL9; TOT10+COL10; TOT11+COL11; TOT12+COL12; TOT13+COL13;
PUT @6 SER Z3. ' ' @ ;
PUT (COL2-COL6) (15.1 8.1 8.1 9. 9. ) ' ' @;
PUT (COL9-COL13) (16.1 8.1 8.1 8. 9. );
IF LAST.CC THEN DO;
    SUB7 = (1 - SUB4/SUB1) * 100;
    SUB14 = (1 - SUB11/SUB8) * 100;
    PUT / ' *TOTAL ' REG REGNAME. @ ;
    PUT (SUB1-SUB7) (8. 8.1 8.1 8.1 9. 9. 8.1) ' ' @;
    PUT (SUB8-SUB14) (8. 8.1 8.1 8.1 9. 9. 8.1);
IF REG = 7 THEN DO;
    TOT7 = (1 - TOT4/TOT1) * 100;
    TOT14 = (1 - TOT11/TOT8) * 100;
    PUT // 132*'=';
    PUT / '**TOTAL ' DIV DIVNAME. @ ;
    PUT (TOT1-TOT7) (7. 8.1 8.1 8.1 9. 9. 8.1) ' ' @;
    PUT (TOT8-TOT14) (8. 8.1 8.1 8.1 9. 9. 8.1);
END;
END;
END;
RETURN;
HEADING:
    PUT @20 _DIVHEAD ' B I W E E K L Y D E T A I L E D R E P O R T '
    ' B Y _ P R O J E C T P.P. ' LAST_PP ' F.Y. 8' LAST_FY;
_REMARKS

```

```

PUT / 132*'-';
PUT / 'PROJECT NO. ' @25 LEFT OPTION. @90 RIGHT OPTION. ;
PUT / @14
'CEILING LAST THIS AVERAGE HOURS TOTAL PCT' @;
PUT @77
'CEILING LAST THIS AVERAGE HOURS TOTAL PCT' ;
PUT @14
'***** P.P. P.P. THROUGH THIS HOURS AHEAD/' @;
PUT @77
'***** P.P. P.P. THROUGH THIS HOURS AHEAD/' ;
PUT @14
' THIS PP P.P. THIS FY BEHIND' @;
PUT @77
' THIS PP P.P. THIS FY BEHIND' ;
PUT 132*'-';
PUT / ;
RETURN;

```

%

MACRO \_WCC2MIC

\*

THIS MODULE PLACES DIVISION FTE DATA IN OS SEQUENTIAL RECORDS  
WITH FIXED LENGTHS AND FIELDS (E.G., FOR TRANSMISSION TO RESTON  
MICROPROCESSOR)

\*

--1-- GET NUMBER OF "THIS PAY PERIOD"

;

DATA THISPP;

INFILE THISPP;

INPUT DIV LAST\_PP LAST\_FY;

\*

--2-- COMPUTE F.T.E. HOURS THROUGH THIS PAY PERIOD

;

FACTOR = \_FACTOR;

\* NOTE: "FACTOR" SHOULD BE CHANGED AT START OF NEW FISCAL  
YEAR TO COMPENSATE FOR PARTIAL PAY PERIOD 01;

ELAPSED = LAST\_PP\*80 - FACTOR;

\*

--3-- INPUT DATA FOR F.T.E. CEILINGS

;

DATA CEILINGS;

INFILE CEILINGS;

ARRAY CEILN(OPT) CEILN1-CEILN2;

INPUT REG CC CEILN1-CEILN2;

DATA MERGE1;

MERGE CEILINGS DATA.PREVIOUS (READ=KSR) DATA.CURRENT DATA.TOTALS; BY REG CC;

; DIV = \_DIVNUM;

\*

--4-- CREATE OS DATA SET FOR TRANSMISSION TO ANOTHER PROCESSOR

;

DATA \_NULL\_;

MERGE THISPP MERGE1; BY DIV;

FILE TRANSMIT;

```

PUT REG 1. CC 3. LAST_PP 3. ELAPSED 5.
(CEILN1-CEILN8) (4. 4. 4. 4. 4. 4. 4. 4.)
(LAST1-LAST8) (9.2 9.2 9.2 9.2 9.2 9.2 9.2 9.2)
(THIS1-THIS8) (9.2 9.2 9.2 9.2 9.2 9.2 9.2 9.2)
(TOTAL1-TOTAL8) (10.2 10.2 10.2 10.2 10.2 10.2 10.2 10.2);

```

```
%
```

```
MACRO _EMPTYTYPE
```

```
* -----THIS MACRO USED BY _INITIAL AND _UPDATER-----;
```

```
* DIVIDE PAYROLL TRANSACTIONS INTO APPROPRIATE CLASSES ACCORDING TO
  TYPE OF APPOINTMENT AND OBJECT CLASS
```

```

;
* TYPE CODES:      F = FULL-TIME
                   O = OTHER THAN FULL-TIME
                   V = OVERTIME
                   S = CAREER SEASONAL
                   P = PERMANENT PART-TIME
                   T = TEMPORARY (FULL- OR PART-TIME)
                   I = INTERMITTENT
                   U = UNCOUNTED REGULAR HOURS

```

```

;
IF 1 OBJECT 4 OR 7 OBJECT 10 THEN DELETE;
TOTALHRS + HOURS;
IF OBJECT=10 THEN TYPE = 'V';
ELSE IF SPEC_PRG = '54'   SPEC_PRG = '55'   SPEC_PRG='57'   SPEC_PRG='63'
    PAY_PLAN='ZZ'   SPEC_EMP='9'   '2' =COUNTED = '8'
    THEN TYPE = 'U';
ELSE IF SCHED='F' AND ('1' =TEN_GRP '3'   '4' =TEN_GRP '8') THEN DO;
    TYPE = 'F';
    IF POS_TEN='T' AND (TYPE_APP='1'   TYPE_APP='2') THEN DO;
        TYPE = 'S';
        OUTPUT;
        TYPE = _CARSEAS;
    END;
    ELSE IF OBJECT = 1 THEN ERROR 'INCONSISTENT TYPE & OBJECT CLASS';
END;
ELSE DO;
    IF SCHED='P' AND ('1' =TEN_GRP '3'   '4' =TEN_GRP '8') THEN DO;
        TYPE = 'P';
        OUTPUT;
    END;
    ELSE IF (SCHED='F'   SCHED='P') & ('0' =TEN_GRP '1'   '3' =TEN_GRP '4')
        THEN DO;
        TYPE = 'T';
        OUTPUT;
    END;
    ELSE IF SCHED='I' THEN DO;
        TYPE = 'I';
        OUTPUT;
    END;
    ELSE IF SCHED='G' THEN DO;
        TYPE = 'S';
        OUTPUT;

```

```

        TYPE = _CARSEAS;
    END;
    ELSE DO;
        TYPE = 'U';
        ERROR 'UNCOUNTED';
    END;
    IF TYPE = 'U' AND TYPE = 'F' THEN TYPE = 'O';
END;
OUTPUT;
IF LAST.DIV THEN PUT 'TOTAL HOURS = ' TOTALHRS;
PROC FREQ; TABLES TYPE; WEIGHT HOURS;
%
MACRO _TYPTABL
    IF TYPE = 'F' THEN THIS1 + HOURS;
    ELSE IF TYPE = 'O' THEN THIS2 + HOURS;
    ELSE IF TYPE = 'V' THEN THIS3 + HOURS;
    ELSE IF TYPE = 'S' THEN THIS4 + HOURS;
    ELSE IF TYPE = 'P' THEN THIS5 + HOURS;
    ELSE IF TYPE = 'T' THEN THIS6 + HOURS;
    ELSE IF TYPE = 'I' THEN THIS7 + HOURS;
    ELSE IF TYPE = 'U' THEN THIS8 + HOURS;
    ELSE ABORT 9;
    * U0009: ERROR IN PROGRAM LOGIC;
%

```



## MIS Biweekly Merging Programs

(1) Merging program for account number data base

```

DATA TA;
INFILE PAYROLL;
INPUT @1 THIS_PP 2. BUREAU $2. SSN $9.
    @14 TRANSACT 1. ORG1 $2. ORG2 $2. @59 SCHEDULE $1. @60 POSITION $1.
    @61 PP 2. @63 FY 1. @66 DIV 1. @67 REG 1. @68 CC 2. @70 SER 3.
    @75 OBJECT 2. @79 HOURS PD4.2 ;
IF DIV=4 OR '40' =ORG1 '50';
PROC SORT; BY SSN;
DATA; SET;
IF TRANSACT = 7;
PROC SORT; BY TRANSACT ORG1 ORG2;
PROC PRINT; BY TRANSACT;
TITLE NONSTANDARD PAYROLL TRANSACTIONS BY TRANSACTION CODE;
DATA; SET TA;
IF DIV = 4;
PROC SORT; BY DIV REG CC SER;
PROC PRINT; BY DIV;
TITLE WRD EMPLOYEES DETAILED TO OTHER DIVISIONS;
DATA EMPLOYEE;
INFILE MASTER;
INPUT @3 BUREAU $2. SSN $9. @792 SPEC_EMP $1. @842 COUNTED $1.
    @1437 PAY_PLAN $2. @1471 RETIRED $1. @1635 POS_TEN $1.
    @1669 TYPE_APP $1. @1696 TEN_GRP $2. @1700 SCHED $1.
    @1736 SPEC_PRG $2. ;
PROC SORT; BY SSN;
* MERGE PAYROLL (T&A) FILE WITH DIPS MASTER FILE ;
DATA NULL;
MERGE TA EMPLOYEE; BY SSN;
FILE DIPS;
IF HOURS = . ;
IF THIS_PP = 01 THEN THIS_PP = 27; IF PP = 01 THEN PP = 27;
PUT SSN $9. THIS_PP 2. TRANSACT 1. SCHEDULE $1. POSITION $1.
    PAY_PLAN $2. RETIRED $1. POS_TEN $1.
    TYPE_APP $1. TEN_GRP $2. SCHED $1. SPEC_EMP $1.
    COUNTED $1. SPEC_PRG $2. ORG1 $2. ORG2 $2.
    PP 2. FY 1. DIV 1. REG 1. CC 2. SER 3.
    OBJECT 2. HOURS PD4.2 ;

```

(2) Merging program for organization code data base

```

DATA TA;
INFILE PAYROLL;
INPUT @1 THIS_PP 2. BUREAU $2. SSN $9. @14 TRANSACT 1.
    ORG1 2. ORG2 2. ORG3 4. @59 SCHEDULE $1. @60 POSITION $1.
    @61 PP 2. @63 FY 1. @66 DIV 1. @67 REG 1. @68 CC 2. @70 SER 3.
    @75 OBJECT 2. @79 HOURS PD4.2 ;
IF DIV=4 OR 40 =ORG1 50;

```

```

PROC SORT; BY SSN;
DATA; SET;
IF TRANSACT = 7;
PROC SORT; BY TRANSACT ORG1 ORG2;
PROC PRINT; BY TRANSACT;
TITLE NONSTANDARD PAYROLL TRANSACTIONS BY TRANSACTION CODE;
DATA; SET TA;
IF DIV = 4 AND REG = 0;
PROC FREQ; TABLES SCHEDULE * POSITION; WEIGHT HOURS;
DATA; SET TA;
IF DIV=4 AND (ORG1 40 OR ORG1|=50);
PROC PRINT;
TITLE WRD ACCOUNT NUMBER AND NON-WRD ORGANIZATION CODE;
DATA; SET TA;
IF DIV =4 AND (40 =ORG1 50);
PROC PRINT;
TITLE WRD ORGANIZATION CODE AND NON-WRD ACCOUNT NUMBER;
DATA EMPLOYEE;
INFILE MASTER;
INPUT @3 BUREAU $2. SSN $9. @792 SPEC_EMP $1.
      @842 COUNTED $1. @1395 NAME $20.
      @1437 PAY_PLAN $2. @1471 RETIRED $1. @1475 GRADE 2.
      @1627 OCC_CODE $5. @1635 POS_TEN $1.
      @1669 TYPE_APP $1. @1696 TEN_GRP $2. @1700 SCHED $1. @1736 SPEC_PRG $2.
      ; * SORT, THEN MERGE ;

```