A RAND NOTE

Computerized Sample Selection Procedures for the Survey of Military Applicants

Jeffrey B. Garfinkle, Bruce R. Orvis

September 1986
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Prepared for
The Office of the Assistant Secretary of Defense/
Force Management and Personnel
PREFACE

This Note describes the sample selection procedures used in the 1983 Survey of Military Applicants. The survey complements the Enlistment Bonus Test by providing information pertinent to the implementation of the Test programs. In addition, the survey helps distinguish the characteristics of enlistees from those of nonenlistees, and provides information on the appeal of alternative enlistment options. This research was sponsored by the Office of the Assistant Secretary of Defense (Force Management and Personnel) under the auspices of RAND's National Defense Research Institute, a Federally Funded Research and Development Center sponsored by the Office of the Secretary of Defense. It was conducted by the "Coordination of Applicant Survey with Youth Attitude Tracking Study" project, part of RAND's Defense Manpower Research Center.

The computerized sample selection procedures developed in 1983 improved substantially on the procedures used in the initial Applicant Survey (1981). Computerization reduced the lag time between application and survey interview, helped to increase the completed interview rate, and essentially eliminated the need for surveying respondents at basic training. Future applicant surveys will employ computerized sample selection. This Note describes the procedures developed at RAND and provides the documentation required for their use in future surveys.
SUMMARY

During the past few years, Congress and the military services have considered a variety of options to increase enlistments among high-quality youth, and help fill critical occupational specialties. In 1981, the Secretary of Defense was authorized to carry out an Enlistment Bonus Test program to compare the effects of alternative cash bonus options. The 1983 Survey of Military Applicants was undertaken jointly by RAND and the Defense Manpower Data Center to complement the Bonus Test results and collect data useful in analyzing enlistments among military applicants. The survey provides information on the implementation of the Test programs, on the factors that distinguish applicants who enlist from those who do not enlist, and on the appeal of various hypothetical enlistment options. This Note describes the sample selection process for the survey and provides the computer programs used to draw the sample.

Sample selection involved the following general steps. Records of Armed Forces Vocational Apptitude Battery (ASVAB) examinations were obtained for each week in April 1983 from the Military Entrance Processing Station (MEPS) Reporting System (MRS). These records are maintained by the Military Enlistment Processing Command (MEPCOM). During the same period, telephone numbers were collected from ASVAB examinees and were computerized. The MRS records were used to draw a stratified random sample of applicants (ASVAB examinees) during each of three weeks: 4-10 April, 11-17 April, and 18-24 April. This sample of applicants was then matched with the telephone information file. The individuals who could be matched between the two files formed the sample of potential interviewees. This sample was delivered to Amrigon Inc., a private survey company under contract to the Defense Manpower Data Center. Amrigon conducted the 40-minute survey using its computer-assisted telephone interviewing system.

Using the MRS records, potential interviewees were followed up weekly during the survey period (21 April to 22 June) to determine whether they had enlisted and, if so, the date and location of their
basic training assignments. This information was used to help interview applicants before they left for active duty and, if this proved impossible, to schedule interviews at basic training.

Although generally similar to the sampling procedures used for the 1981 Applicant Survey, the 1983 procedures contained major improvements. The most notable change was the computerization of telephone number information. This made it possible to match telephone numbers to the weekly screened applicant samples by computer, whereas in 1981 the filing of telephone number information and the matching process were both done manually.

As a result of these innovations, the match rate was increased from about 78 percent in 1981 to 92 percent in 1983. Also, the average time between the ASVAB test and survey interview was reduced from more than six weeks in 1981 to about four weeks. This helped to increase the survey response rate from 81 to 91 percent and to decrease the proportion of applicants who had to be interviewed at basic training, a difficult procedure. The percentage of applicants who left for active duty before they could be interviewed fell from 13 percent in 1981 to 2 percent in 1983.
ACKNOWLEDGMENTS

This study was made possible by the sponsorship of the Office of Accession Policy and the Defense Manpower Data Center. In particular, we were assisted in many ways by Dr. W. Steven Sellman, Director, Office of Accession Policy, and Dr. Zahava Doering, Chief, Survey and Market Analysis Division, Defense Manpower Data Center (DMDC). We are also grateful to DMDC staff members David Boesel and John Richards, who conducted the survey with us, and Robert Brandewie and Leslie Willis, for their advice and support.

We would like to express our appreciation to the Military Enlistment Processing Command, which provided the data for constructing and monitoring the sample of military applicants. We were aided in particular by Walter Knutson, who arranged for cooperation from the Military Entrance Processing Stations, and by Kenneth Clifton, who provided weekly computer tapes of the MEPS Reporting System transactions. Our thanks also go to Ronald Smith, Richard Smith, Anthony Lockhart, and the interviewers at Amigon, Inc. for their perseverance and outstanding effort. Finally, at RAND, we are grateful to Ellie Rosen for her helpful review and to Marilyn Yokota for her assistance in preparing this document.
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TABLE

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I. OVERVIEW OF SAMPLE SELECTION PROGRAMS

This section provides a general description of each step in the sample selection process. Section II provides programming details, including naming conventions and listings of major and supplemental programs. The formats for the data records described in Section II are provided in the Appendix.

During the period 4-24 April 1983, stratified random samples of military applicants were selected each week from the persons taking the Armed Forces Vocational Aptitude Battery (ASVAB). The Monday to Sunday testing week was chosen to match the Military Enlistment Processing Command's (MEPCOM) normal data processing schedule for the "690-10" file (i.e., the full Military Entrance Processing Station (MEPS) Reporting System (MRS) file). Although most transactions are recorded in the MRS within 24 hours, in some instances it may take a few days for the transaction to be entered. For this reason, two weeks of data were used to draw the sample for each testing week: the sample representing 4-10 April was selected from the MRS "increments" for 4-10 April and 11-17 April; the sample representing 11-17 April from the 11-17 April and 18-24 April increments; and the sample representing 18-24 April from the 18-24 April and 25-30 April increments.¹

Step 1: Screen the MRS 690-10 Records. The first step in the sample selection process was to combine the two MRS increments covering the transactions for the week of interest (e.g., combine the increments for 4-10 April and 11-17 April to cover transactions during 4-10 April). The applicants represented in this combined data set were then screened to determine if they met the following sample selection eligibility criteria:

¹ The last increment ended 30 April instead of 1 May because of special procedures used at the end of each month.
1. Applicant took an initial written test (production ASVAB) during the week of interest;
2. Test was taken for an active-duty service;
3. Test was taken at a MEPS in the continental U.S.;
4. Applicant has no prior military service;
5. Applicant is male;
6. Applicant may be eligible to enlist (i.e., his Armed Forces Qualification Test (AFQT) classification is not Category V);
7. Years of education data are not missing on applicant's MRS record; and
8. Applicant did not appear in prior week's sample (based on his Social Security Number).

A file of indicator flags was created for the rejected cases so the distribution of the reasons for rejection could be evaluated.

The following discussion explains our use of each of the screening criteria. Non-prior service, first test applicants for active-duty service were used because we were interested in the effect of enlistment bonuses and educational benefits on first time active-duty enlistment decisions. Production tests were used because institutional tests (e.g., at high schools) represent only a small portion of the ASVABs among enlistees and are administered routinely in certain cases; thus, persons taking them may not be seriously interested in joining the military, and may differ in other ways as well from the majority of applicants. Males were used exclusively because females are ineligible for the jobs offering special enlistment bonuses and represent only a small proportion of enlistees. Continental U.S. locations were used because they represent almost all testing sites and because the persons testing there are much easier to reach by telephone than the small minority testing overseas. AFQT Category V applicants were excluded because they are ineligible to enlist in any service. We screened out any isolated cases of persons who had missing data on education level (a sample stratification variable). Finally, as a precaution against potential problems arising from the use of each MRS increment in drawing the samples for two successive weeks, we screened out applicants in the overlapping increment who had been candidates for the prior week's sample.
Step 2: Remove Multiple Cases. It is not uncommon for an applicant to have more than one transaction in a given week. Thus, even in the screened data set of MEPCOM records, an individual (identified by Social Security Number) can appear more than once. This step identifies these multiple records and retains only the most recent one (i.e., the record that has the most non-blank transaction fields). This record contains the most complete information on an individual, because the transaction history fields in a MEPCOM record preserve prior contact information.

Step 3: Classify Cases By Enlistment Bonus Test Program and Applicant Quality Level. To permit the desired analyses to be made with the appropriate level of statistical precision, the sample was stratified according to the enlistment bonus program available at the applicant's MEPS and the applicant's quality (i.e., a combination of his high school graduation status and AFQT score). This required that each screened applicant be assigned to one of the six cells shown in Fig. 1. The distribution of applicants among the cells was computed and used in the next step.

Step 4: Randomly Select Cases. Each week, a specified number of applicants was randomly selected from each cell. The size of the cell sample was based on the number of completed interviews desired for the cell (N), our estimate of the survey response rate (R), and our estimate of the proportion of screened applicants for whom telephone numbers were obtained (T). The formula used to determine the required number of cases for a cell (C) was C = N/RT. Initial estimates for R and T were based on experiences with the 1981 Applicant Survey. The estimates were refined as the 1983 survey progressed and new data became available.

Step 5: Process Individual Data Forms. Since applicants' telephone numbers are not maintained on the MRS record, a special "Individual Data Form" (IDF) was designed to provide this information. All applicants testing in April completed this short form when they took the ASVAB. The IDFs were mailed to the Defense Manpower Data Center (DMDC) on a daily basis by the Test Control Officer at each MEPS. In contrast to 1981, when the IDFs were sorted and filed by hand, the IDFs received each day during the 1983 survey were transported to a data
processing firm under contract to DMDC, where the information was transcribed onto a computer tape. The completed tape was delivered to DMDC the following day, where it was logged in and forwarded to RAND for use in selecting the applicant sample.

The Individual Data Form records for each day were concatenated into a single file, including all IDF records received to date. Each week this file was explored to detect any systematic errors. Each IDF record was assigned a unique number so that it could easily be identified when matched to the file of MRS records.

<table>
<thead>
<tr>
<th>Applicant quality level</th>
<th>Bonus program at applicant’s MEPS(^a)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$5000 for four-year enlistment (Program A)</td>
<td>$8000 for four-year enlistment (Program B)</td>
</tr>
<tr>
<td>High(^b)</td>
<td>HA Cell</td>
<td>HB Cell</td>
</tr>
<tr>
<td>Low</td>
<td>LA Cell</td>
<td>LB Cell</td>
</tr>
</tbody>
</table>

Fig. 1—Stratification cells

\(^a\)Limited to enlistments in designated occupational specialties.

\(^b\)High quality refers to high school graduates or seniors scoring in AFQT categories I-IIIA. High school seniors were treated as high school graduates, since nearly all attendees in April complete their terms.
Step 6: Match Screened MRS Records to IDF Records. The file of screened MRS records sampled for a given week was then matched with the IDF information.² The MRS records were passed against all IDF records keypunched on or after the first day of the given testing week. A series of computer programs was used to generate candidate matches based on a variety of criteria. At each matching step, a list of matches was printed and was verified by hand. MRS records that were not matched on any one step were passed to the next step for matching on a different set of criteria.

The matching process proceeded in the following order.

Run 1 - Match on (1) MEPS; (2) the first four letters of the last name and the first letter of the first name; and (3) birthdate.

Run 2 - Match on (1) MEPS and (2) the first four letters of the last name and the first letter of the first name.

Run 3 - Match on (1) MEPS and (2) birthdate.

Run 4 - Match on (1) the first four letters of the last name and the first letter of the first name and (2) birthdate.

Run 5 - Match on (1) birthdate and (2) the first two letters of the last name.

Table 1 summarizes the matching process. The multiple run, computerized matching procedure replaced the hand matching of MEPS and last name which was used in 1981. It reduced the lag between ASVAB test and interview from six to four weeks, and helped increase the survey response rate from 81 to 91 percent.

² Any unmatched MRS records from the preceding week's sample were also passed against the IDF file, to capture IDF information that took an abnormally long time to be keypunched.
Table 1
CRITERIA FOR MATCHING MRS AND IDF RECORDS

<table>
<thead>
<tr>
<th>Matching Criteria Used</th>
<th>Matching Run Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MEPS</td>
<td>X</td>
</tr>
<tr>
<td>First four letters of last name and first letter of first name</td>
<td>X</td>
</tr>
<tr>
<td>Birthdate</td>
<td>X</td>
</tr>
<tr>
<td>First two letters of last name</td>
<td></td>
</tr>
</tbody>
</table>

The first run matched about 85 percent of the MRS and IDF records. Because it required matching on three criteria, the matches were virtually error free. The matches generated by runs 2 through 5 required careful hand verification, however. The total match rate after run 5 exceeded 92 percent, compared to about 80 percent in 1981. Initially, a sixth run matching only the first four letters of the last name and first letter of the first name was used. It was dropped because it resulted in a large number of mismatches and few, if any, additional matches.

Step 7: Create a File of Sample Members. The final set of hand-verified matches was again screened using the criteria in Step 1, to detect any invalid cases that might have been missed. In rare instances, applicants indicated they were females on the IDF records; these applicants were removed if their names on the IDF and MRS records clearly indicated that the MRS sex value had been miscoded. Applicants who had no telephone number listed on the IDF were also removed. Such cases were rare, amounting to about 1 percent of the sample.
Each valid case was assigned a unique identification number. Each week, a machine-readable file (ASCII format) and an abbreviated listing of valid survey cases were sent to the survey contractor (Amigon). In addition, we generated and sent to Amigon a priority list of cases who were scheduled to report for active duty, using information on the MRS file. This list provided the identification number of the enlistee, his active duty date, and his basic training base (if available). The information was used to attempt to interview applicants before they left for active duty and, if that proved impossible, to schedule interviews at basic training installations. Together with the automation of the matching process (Step 6), this helped to reduce the percentage of sample members leaving for active duty before being interviewed from 13 percent in 1981 to 2 percent in 1983.

**Step 8: Update Active-Duty Date and Basic Training Information.** Updated information on expected active-duty date and training base for sample cases was provided weekly throughout the survey period. This allowed Amigon to assign priorities to interviews and, when necessary, to provide basic training locations for non-interviewed applicants to DMDC, so these persons could be scheduled for interviews.
II. COMPUTER PROGRAMS USED IN SAMPLE SELECTION

This section provides listings of the programs that were used to generate the sample for period 3 (18-24 April). Every program and data file used in the sample selection process was given a unique 17 character name corresponding to the following design:

\[ Snnn.dddd.Pp.tttt, \]

where

- \( nn \) = step to which this file refers;
- \( a \) = character value that denotes a file within the step;
- \( dddd \) = character name of the step;
- \( p \) = time period to which this file refers,
  - 1 = 04-04-83 through 04-10-83,
  - 2 = 04-11-83 through 04-17-83,
  - 3 = 04-18-83 through 04-24-83,
  - 4 = 04-25-83 through 04-29-83; and
- \( tttt \) = type of file,
  - SORC = program source code,
  - DATA = output data file from a step,
  - SAS = SAS data library.

The data processing steps have the following names (Snn - dddd):

- S01 - SCRN - screen MRS 690-10 file;
- S02 - MULT - remove multiple cases;
- S03 - CELL - classify cases by bonus test program and applicant quality level;
- S04 - CHOS - randomly select cases;
- S05 - RIDF - process Individual Data Forms;
- S06 - MTCH - match screened MRS records to IDPs;
- S07 - WRIT - create a file of sample members; and
- S08 - UPDT - update active-duty date and basic training information.
SELECT MRS SAMPLE (STEPS 1-4)

This subsection presents the programs used to select the MRS sample. Figure 2 summarizes Steps 1-2. Figure 3 summarizes Steps 3-4.

Fig. 2—Select MRS sample (Steps 1-2)
Fig. 3—Select MRS sample (Steps 3-4)
STEP 1 - SCREEN THE MRS 690-10 RECORDS

Part A - Write Valid Cases to a Raw File
S01A: PROC OPTIONS(MAIN);

/*******************************/
/*
/* PROGRAM: S01A.SCRN.P3.SORC */
/* LANGUAGE: PL/I */
/* PURPOSE: THIS PROGRAM SCREENS AND WRITES */
/* VALID CASES FROM THE RAW DATA FILE. */
/* THE CRITERIA ARE: */
/* ACTIVE DUTY SERVICE */
/* MEPS IN THE CONTINENTAL U.S. */
/* NO PRIOR MILITARY SERVICE */
/* MALE */
/* AFQT # CAT 5 */
/* INITIAL WRITTEN EXAM DURING */
/* THE PERIOD */
/* YEARS OF EDUCATION FIELD */
/* NOT BLANK */
/* SSN IS NOT IN THE */
/* PREVIOUS SAMPLE */
/* THE OUTPUT RECORD OF VALID CASES HAS AN */
/* ADDITIONAL 35 CHARACTERS ADDED TO THE */
/* END OF THE ORIGINAL 690: 24 FOR THE */
/* TRANSACTION FIELD THAT HAS A WRITTEN */
/* TEST DURING THE PERIOD AND 11 FOR LATER */
/* USE. */
/* THE OUTPUT RECORD FOR REJECTED CASES */
/* CONSISTS OF THE SOCIAL SECURITY NUMBER */
/* AND A SERIES OF 0/1 FLAGS THAT IDENTIFY */
/* THE REASON(S) A RECORD WAS REJECTED. */
/* INPUT: */
/* REC690.P3 (MRS DATA FOR WEEK OF P3) */
/* REC690.P4 (MRS DATA FOR WEEK AFTER P3) */
/* DATEIN (PERIOD NUMBER, STARTING */
/* DATE, ENDING DATE) */
/* OUTPUT: */
/* S01A.SCRN.P3.DAT1 (VALID CASES) */
/* S01A.SCRN.P3.DAT2 (REJECTED CASES) */
/* LOGIC: */
/* INITIALIZE DATA STRUCTURES, A LIST OF */
/* VALID MEPS CODES, A LIST OF SSN'S USED */
/* TO DRAW THE PREVIOUS SAMPLE AND THAT ARE */
/* IN THE INPUT DATA, AND OTHER INTERNAL */
/* VARIABLES AND ON-UNITS. */
/* OPEN FILES, READ DATEIN DATA. */
/* FOR EACH INPUT MRS RECORD: */
/* INITIALIZE FLAGS FOR REJECTED CASES. */
/* SCREEN THE RECORD FOR EACH OF THE */
/* SELECTION CRITERIA. */
/* IF THE RECORD MEETS ALL OF THE */
/* SCREENING CRITERIA, WRITE THE ENTIRE */
/* RECORD TO UNIT OUT1, */
/* OTHERWISE, WRITE A SET OF INDICATOR */
/* FLAGS TO UNIT OUT2. */
/* PRINT SUMMARY COUNTS AND CLOSE FILES. */
/*******************************/
DECLARE PERIOD            CHAR(001),
  BEGIN_DATE         CHAR(008),
  END_DATE           CHAR(008);

DECLARE IN
  OUT1      FILE INPUT RECORD SEQUENTIAL,
  OUT2      FILE OUTPUT RECORD SEQUENTIAL,
  DATEIN      FILE INPUT STREAM,
  SYSPRINT        FILE OUTPUT STREAM PRINT;

DECLARE THERE_IS_DATA
  BIT(1),
  YES        BIT(1) INIT('1'B),
  NO          BIT(1) INIT('0'B);

DECLARE END_OF_SEARCH
  CHAR(001),
  FIND_SSN  CHAR(001),
  TRUE      CHAR(001) INIT('1'),
  FALSE     CHAR(001) INIT('0');

DECLARE BLANKS
  CHAR(008) INIT(' '),
  BLANK2    CHAR(002) INIT(' ');

DECLARE INPUT_COUNT      FIXED DEC(5),
  OUTPUT_COUNT       FIXED DEC(5),
  INVALID_COUNT      FIXED DEC(5),
  I                   FIXED BIN(15),
  INTEREST           FIXED BIN(15);

DECLARE CONTINENTAL_MEPS(66)    CHAR(002)
  INIT('01', '36', '37', '20', '02',
       '21', '70', '03', '04', '71',
       '22', '54', '55', '56', '57',
       '23', '38', '39', '58', '59',
       '40', '60', '05', '24', '72',
       '06', '41', '61', '42', '25',
       '43', '26', '44', '74', '27',
       '07', '45', '62', '63', '28',
       '29', '08', '09', '46', '75',
       '47', '64', '10', '76', '11',
       '12', '77', '31', '32', '66',
       '78', '48', '67', '79', '49',
       '65', '80', '13', '14', '15',
       '17');

DECLARE DUP_SSN(522)      CHAR(009)
  INIT(      );

(The SSNs for the 522 applicants in the first MRS increment for this sample period who were candidates for the prior week's sample appear here. They have been deleted for privacy reasons.)
DECLARE 1 REC_690,
  2 S0_CA_AB  CHAR(009), /* SOCIAL SECURITY NUMBER */
  2 FILL01  CHAR(046),
  2 PM_SV_AA  CHAR(002), /* PRIOR MILITARY SERVICE */
  2 FILL02  CHAR(012),
  2 SE_XA_AA  CHAR(001), /* SEX */
  2 FILL03  CHAR(025),
  2 YE_NQ_AA  CHAR(002), /* YEARS OF EDUCATION */
  2 FILL04  CHAR(022),
  2 PE_CD_UA  CHAR(002), /* MENTAL CATEGORY (AFQT) */
  2 FILL05  CHAR(143),
  2 TRANSACTION_HISTORY(10),
    3 T.FILL01  CHAR(001), /* MENTAL CODE */
    3 MN_CD_UA  CHAR(001), /* MENTAL CODE */
    3 T.FILL02  CHAR(003), /* DATE OF TRANSACTION */
    3 DA_FA_UD  CHAR(008), /* DATE OF TRANSACTION */
    3 T.FILL03  CHAR(004), /* MEPS CODE */
    3 AA_FE_TR  CHAR(002), /* MEPS CODE */
    3 SR_VC_TR  CHAR(003), /* SERVICE PROCESSED FOR */
    3 T.FILL04  CHAR(002), /* SERVICE PROCESSED FOR */
  2 FILL06  CHAR(186);
DECLARE 1 REC_725,
  2 SO_CA_AB      CHAR(009), /* SOCIAL SECURITY NUMBER */
  2 FILL01       CHAR(046),
  2 PM_SV_AA     CHAR(002), /* PRIOR MILITARY SERVICE */
  2 FILL02       CHAR(012),
  2 SE_XA_AA     CHAR(001), /* SEX */
  2 FILL03       CHAR(025),
  2 YE_NQ_AA     CHAR(002), /* YEARS OF EDUCATION */
  2 FILL04       CHAR(022),
  2 PE_CD_UA     CHAR(002), /* MENTAL CATEGORY (AFQT) */
  2 FILL05       CHAR(143),
  2 TRANSACTION_HISTORY(10),
    3 T_FILL01     CHAR(001),
    3 MN_CD_UA     CHAR(001), /* MENTAL CODE */
    3 T_FILL02     CHAR(003),
    3 DA_FA_UD     CHAR(008), /* DATE OF TRANSACTION */
    3 T_FILL03     CHAR(004),
    3 AA_FE_TR     CHAR(002), /* MEPS CODE */
    3 SR_VC_TR     CHAR(003), /* SERVICE PROCESSED FOR */
    3 T_FILL04     CHAR(002),
  2 FILL08       CHAR(186),
  2 TRANSACTION_OF_INTEREST(1),
    3 C_FILL01     CHAR(001),
    3 C_MN_CD_UA   CHAR(001), /* MENTAL CODE */
    3 C_FILL02     CHAR(003),
    3 C_DA_FA_UD   CHAR(008), /* DATE OF TRANSACTION */
    3 C_FILL03     CHAR(004),
    3 C_AA_FE_TR   CHAR(002), /* MEPS CODE */
    3 C_SR_VC_TR   CHAR(003), /* SERVICE PROCESSED FOR */
    3 C.FILL04     CHAR(002),
  2 FILL09       CHAR(011) INIT(' ');

DECLARE 1 REC_INVALID,
  2 SO_CA_AB      CHAR(009), /* SOCIAL SECURITY NUMBER */
  2 VALID_SERVICE CHAR(001),
  2 VALID_MEPS    CHAR(001),
  2 VALID_PRIOR   CHAR(001),
  2 VALID SEX     CHAR(001),
  2 VALID YEARS   CHAR(001),
  2 VALID_AFQT    CHAR(001),
  2 VALID_MENTAL  CHAR(001),
  2 VALID_SSN     CHAR(001);
%PAGE;

/**************************************************************************
/**                        I N I T I A L I Z A T I O N                        */
/**************************************************************************

OUTPUT_COUNT = 0;
INVALID_COUNT = 0;
THERE_IS_DATA = YES;

OPEN FILE (IN),
    FILE (OUT1),
    FILE (OUT2),
    FILE (DATEIN),
    FILE (SYSPRINT);

GET FILE(DATEIN) EDIT (PERIOD, BEGIN_DATE, END_DATE)
    (A(1),X(1),A(8),X(1),A(8));
ON ERROR SNAP BEGIN;
     ON ERROR SYSTEM;
     PUT SKIP LIST
       ((50)'*'||' DEBUG START '||(50)'*');
     PUT SKIP DATA;
     PUT SKIP LIST
       ((50)'*'||' DEBUG END '||(50)'*');
END;

ON ENDFILE(IN) THERE_IS_DATA=NO;

ON ENDPAGE(SYSPRINT) BEGIN;
     PUT EDIT
       ('1983 APPLICANT SURVEY')
       (SKIP(5),COL(28),A)
       ('PERIOD','PERIOD',':')
       (SKIP(2),COL(20),A,A,A)
       (BEGIN_DATE,'THROUGH ',END_DATE)
       (A,A,A)
       ('STEP 1A INIT - INITIAL SCREENING')
       (SKIP(2),COL(20),A);
     PUT SKIP(2) LIST (' ');
END;
%PAGE;
/*********************************************************************************/
/** MAIN PROCESSING */
/*********************************************************************************/

SIGNAL ENDPAGE(SYSPRINT);

READ FILE (IN) INTO (REC_690);
INPUT_COUNT = 1;

DO WHILE(THERE_IS_DATA=YES);

    /* INITIALIZE FLAGS FOR EACH RECORD */
    VALID_SERVICE = FALSE;
    VALID_MEPS = FALSE;
    VALID_PRIOR = FALSE;
    VALID_SEX = FALSE;
    VALID_YEARS = FALSE;
    VALID_AFQT = FALSE;
    VALID_MENTAL = FALSE;
    VALID_SSN = FALSE;
    END_OF_SEARCH = FALSE;
    FIND_SSN = FALSE;
/* SCREEN FOR NO PRIOR MILITARY SERVICE ('NN') */
IF REC_690.PM_SV_AA='NN'
THEN VALID_PRIOR = TRUE;

/* SCREEN FOR MALES ('M') */
IF REC_690.SE_XA_AA='M'
THEN VALID SEX = TRUE;

/* SCREEN FOR YEARS OF EDUCATION FIELD NOT BLANK */
IF REC_690.YE_NQ_AA \= BLANK2 [*]
THEN VALID YEARS = TRUE;

/* SCREEN FOR AFQT MENTAL CATEGORY NOT EQUAL TO '5' */
IF REC_690.PE_CD_UA='1' | REC_690.PE_CD_UA='2' |
  REC_690.PE_CD_UA='3A' | REC_690.PE_CD_UA='3B' |
  REC_690.PE_CD_UA='4A' | REC_690.PE_CD_UA='4B' |
  REC_690.PE_CD_UA='4C'
THEN VALID_AFQT = TRUE;

/* SCREEN FOR SSN NOT IN THE PREVIOUS SAMPLE */
DO 1 = 1 TO 522 WHILE (FIND_SSN = FALSE);
   IF REC_690.SO_CA_AB = DUP_SSN(I)
      THEN FIND_SSN = TRUE;
END;

IF FIND_SSN = FALSE
THEN VALID_SSN = TRUE;

[*] "\=" means "not equal to."
%PAGE;

/* SCREEN FOR INITIAL WRITTEN EXAM DURING THE PERIOD */
DO I = 1 TO 10 WHILE (END_OF_SEARCH = FALSE);
  IF REC_690.DA_FA_UD(I) = BLANK8
    THEN END_OF_SEARCH = TRUE;
  ELSE IF REC_690.DA_FA_UD(I) >= BEGIN_DATE &
    REC_690.DA_FA_UD(I) <= END_DATE &
    REC_690.MN_CD_UA(I) = '1'
    THEN DO;
      VALID_MENTAL = TRUE;
      END_OF_SEARCH = TRUE;
      INTEREST = I;
      END;
END;

/* SCREEN FOR ACTIVE DUTY SERVICE IN THE TRANSACTION OF INTEREST ('DAR', 'DNR', 'DFR', 'DMR') */
IF (REC_690.SR_VC_TR(INTEREST) = 'DAR' |
    REC_690.SR_VC_TR(INTEREST) = 'DNR' |
    REC_690.SR_VC_TR(INTEREST) = 'DFR' |
    REC_690.SR_VC_TR(INTEREST) = 'DMR')
THEN VALID_SERVICE = TRUE;

/* SCREEN FOR MEPS IN CONTINENTAL U.S. IN THE TRANSACTION OF INTEREST */
DO I = 1 TO 66 WHILE (VALID_MEPS=FALSE);
  IF REC_690.AA_FE_TR(INTEREST) = CONTINENTAL_MEPS(I)
    THEN VALID_MEPS = TRUE;
END;
/* WRITE ENTIRE RECORD OF SELECTED CASES TO OUT1 */
/* WRITE AN INDICATOR FOR THE REJECTED CASES TO OUT2 */
IF VALID_SERVICE = TRUE & VALID_MEPS = TRUE &
  VALID_PRIOR = TRUE & VALID_SEX = TRUE &
  VALID_YEARS = TRUE & VALID_AFQT = TRUE &
  VALID_MENTAL = TRUE & VALID_SSN = TRUE
THEN DO;
  REC_725 = REC_690, BY NAME;
  TRANSACTION_OF_INTEREST =
    REC_690.TRANSACTION_HISTORY(INTEREST);
  WRITE FILE(OUT1) FROM (REC_725);
  OUTPUT_COUNT = OUTPUT_COUNT + 1;
END;
ELSE DO;
  REC_INVALID.SO_CA_AB = REC_690.SO_CA_AB;
  WRITE FILE(OUT2) FROM (REC_INVALID);
  INVALID_COUNT = INVALID_COUNT + 1;
END;

READ FILE (IN) INTO (REC_690);
IF THERE_IS_DATA = YES
  THEN INPUT_COUNT = INPUT_COUNT + 1;

END;

CALL FINISH;
%PAGE;
/**************************************************************************/
/*                       F I N I S H                                    */
/**************************************************************************/

FINISH: PROC;

PUT EDIT ('SUMMARY COUNTS:')
          (SKIP(5),COL(5),A)
          ('RECORDS READ     = ',INPUT_COUNT)
          (SKIP(2),COL(2),A,F(7))
          ('INVALID RECORDS = ',INVALID_COUNT)
          (SKIP(2),COL(2),A,F(7))
          ('RECORDS WRITTEN  = ',OUTPUT_COUNT)
          (SKIP(2),COL(2),A,F(7));

CLOSE FILE (IN),
           FILE (OUT1),
           FILE (OUT2),
           FILE (DATEIN),
           FILE (SYSPRINT);

RETURN;

END FINISH;

END S01A;
//GO.IN   DD DSN=G.G1157.AB230.REC690.P3,DISP=SHR
//       DD DSN=G.G1157.AB230.REC690.P4,DISP=SHR
//GO.OUT1 DD DSN=G.G1157.AB230.S01A.SCRN.P3.DAT1,DISP=(NEW,CATLG),
//       DCB=(RECFM=FB,LRECL=725,BLKSIZ=18850),
//       UNIT=User,VOL=SER=temp11,
//       SPACE=(TRK,(50,50),RLSE)
//GO.OUT2 DD DSN=G.G1157.AB230.S01A.SCRN.P3.DAT2,DISP=(NEW,CATLG),
//       DCB=(RECFM=FB,LRECL=17,BLKSIZ=3893),
//       UNIT=User,VOL=SER=temp11,
//       SPACE=(TRK,(50,50),RLSE)
//GO.DATEIN DD *
 3 19830418 19830424
STEP 1 - SCREEN THE MRS 690-10 RECORDS

Part B - Sort the Screened File by Social Security Number
***************
/*
/* PROGRAM:    S01B.SCRN.P3.SORC
/* LANGUAGE:   IBM SORT/MERGE
/* PURPOSE:    SORT THE VALID SCREENED CASES BY SSN
/*
/* INPUT:      S01A.SCRN.P3.DAT1
/*
/* OUTPUT:     S01B.SCRN.P3.DATA
/* LOGIC:      SORT THE FILE BASED ON COLUMNS 1 THROUGH 9
/*
***************

SORT EXEC SORTD
//SORTIN DD DSN=G.G1157.AB23O.S01A.SCRN.P3.DAT1,DISP=SHR
//SORTOUT DD DSN=G.G1157.AB230.S01B.SCRN.P3.DATA,DISP=(NEW,CATLG),
//           UNIT=USER,Vol=SER=TEMP11,
//           DCB=(RECFM=PB,LRECL=725,BLKSIZE=18850),
//           SPACE=(CYL,(25,25),RLE)
//SYSIN DD *
  SORT FIELDS=(1,9,CH,A)
/*
//
STEP 2 - REMOVE MULTIPLE CASES

Part A - Write Unique Records to a Raw File
S02A: PROC OPTIONS(MAIN);

/*****************************/
/*
/* PROGRAM: S02A.MULT.P3.SORC */
/* LANGUAGE: PL/I */
/* PURPOSE: THIS PROGRAMS CHECKS THE SORTED */
/* SCREENED FILE FOR RECORDS WITH */
/* IDENTICAL SSN'S AND WRITES A NEW FILE */
/* CONSISTING ONLY OF UNIQUE RECORDS. */
/* THE RECORD WITH THE MOST NON-BLANK */
/* TRANSACTION DATE FIELDS IS RETAINED, */
/* BUT ALL RECORDS WITH MATCHING SSN'S */
/* ARE PRINTED. */
/*
/* INPUT: S01B.SCRN.P3.DATA (FILE OF SORTED */
/* SCREENED RECORDS) */
/* DATEIN (PERIOD NUMBER, */
/* STARTING DATE, */
/* ENDING DATE) */
/*
/* OUTPUT: S02A.MULT.P3.DATA (FILE OF UNIQUE, */
/* SORTED SCREENED */
/* RECORDS) */
/*
/* LOGIC: INITIALIZE DATA STRUCTURES, INTERNAL */
/* VARIABLES AND ON-UNITS. */
/* OPEN FILES AND READ DATEIN DATA. */
/* FOR THE ENTIRE INPUT FILE: */
/* READ A RECORD INTO MEMORY AREA */
/* "FIRST." */
/* READ THE NEXT RECORD INTO MEMORY AREA */
/* "NEXT." */
/* IF THE SSN'S ARE DIFFERENT, */
/* WRITE THE FIRST RECORD TO UNIT OUT1,*/
/* STORE THE SECOND RECORD IN AREA */
/* "FIRST," */
/* OTHERWISE, */
/* PRINT BOTH RECORDS, */
/* FIND THE RECORD WITH THE MOST */
/* NON-BLANK TRANSACTION FIELDS AND */
/* STORE IT IN AREA "FIRST." */
/*
/* PRINT SUMMARY COUNTS AND CLOSE FILES. */
/*****************************/
DECLARE PERIOD CHAR(001),
BEGIN_DATE CHAR(008),
END_DATE CHAR(008);

DECLARE IN OUT
DATEIN FILE INPUT RECORD SEQUENTIAL,
SYSPRINT FILE OUTPUT RECORD SEQUENTIAL,

DECLARE THERE IS DATA MULTIPLES_FLAG
BLANK_DATE_FIRST BIT(1),
BLANK_DATE_NEXT BIT(1),
YES BIT(1) INIT('1'B),
NO BIT(1) INIT('0'B);

DECLARE BLANK8 CHAR(008) INIT(' '),

DECLARE INPUT_COUNT FIXED DEC(5),
OUTPUT_COUNT FIXED DEC(5),
MULTIPLES_COUNT FIXED BIN(15),
TRANSACTION_COUNT_FIRST FIXED BIN(15),
TRANSACTION_COUNT_NEXT FIXED BIN(15),
I FIXED BIN(15);

DECLARE ENDFILE BUITLIN,
ENDPAGE BUITLIN;
DECLARE 1 FIRST,
  2 SO_CA_AB    CHAR(009), /*!< SOCIAL SECURITY NUMBER */
  2 FILL01      CHAR(255),
  2 TRANSACTION_HISTOY(10),
    3 T_FILL01   CHAR(005),
    3 DA_FA_UD   CHAR(008), /*!< DATE OF TRANSACTION */
    3 T_FILL02   CHAR(011),
  2 FILL07      CHAR(221);

DECLARE 1 NEXT,
  2 SO_CA_AB    CHAR(009), /*!< SOCIAL SECURITY NUMBER */
  2 FILL01      CHAR(255),
  2 TRANSACTION_HISTOY(10),
    3 T_FILL01   CHAR(005),
    3 DA_FA_UD   CHAR(008), /*!< DATE OF TRANSACTION */
    3 T_FILL02   CHAR(011),
  2 FILL07      CHAR(221);
%PAGE;
/*******************INITIALIZATION***************************/
/*
INITIALIZATION
*/
/*******************INITIALIZATION***************************/

OUTPUT_COUNT = 0;
MULTIPLES_COUNT = 0;
MULTIPLES_FLAG = NO;
THERE_IS_DATA = YES;

OPEN FILE (IN),
   FILE (OUT),
   FILE (DATEIN),
   FILE (SYSPRINT);

GET FILE(DATEIN) EDIT (PERIOD, BEGIN_DATE, END_DATE)
   (A(1),X(1),A(8),X(1),A(8));
%PAGE;

ON UNITS

ON ERROR SNAP BEGIN;
    ON ERROR SYSTEM;
    PUT SKIP LIST
        (((50)'*'|' DEBUG START ' || (50)'*'));
    PUT SKIP DATA;
    PUT SKIP LIST
        (((50)'*'|' DEBUG END ' || (50)'*'));
END;

ON ENDFILE(IN) THERE IS DATA=NO;

ON ENDPAGE(SYSPRINT) BEGIN;
    PUT EDIT
        ('1983 APPLICANT SURVEY')
        (SKIP(5),COL(28),A)
        ('PERIOD','PERIOD':'')
        (SKIP(2),COL(20),A,A,A)
        (BEGIN_DATE,'THROUGH',END_DATE)
        (A,A,A)
        ('STEP 2A MULT - REMOVE MULTIPLE SSN'S')
        (SKIP(2),COL(20),A);
    PUT SKIP(2) LIST (' ');
END;
%PAGE;
/*****************************/
/*           MAIN PROCESSING        */
/*****************************/

SIGNAL ENDPAGE(SYSPRINT);

READ FILE (IN) INTO (FIRST);
INPUT_COUNT = 1;

DO WHILE(THERE_IS_DATA=YES);

READ FILE (IN) INTO (NEXT);
IF THERE_IS_DATA = YES
   THEN DO;
      INPUT_COUNT = INPUT_COUNT + 1;
      IF (FIRST.SO_CA_AB <= NEXT.SO_CA_AB)
         THEN DO;
            WRITE FILE (OUT) FROM (FIRST);
            OUTPUT_COUNT = OUTPUT_COUNT + 1;
            FIRST = NEXT;
            MULTIPLES_FLAG = NO;
         END;
      ELSE CALL MULTIPLES;
   END;

END;

WRITE FILE (OUT) FROM (FIRST);
OUTPUT_COUNT = OUTPUT_COUNT + 1;

CALL FINISH;
MULTIPLES: PROC;

/* HEADER */
IF MULTIPLES_FLAG = NO THEN DO;
    PUT SKIP LIST (' ***** RECORDS WITH IDENTICAL SSN''S ***** ');
    PUT SKIP EDIT (FIRST) (A);
    PUT SKIP EDIT (NEXT) (A);
    END;
ELSE IF THERE_IS_DATA = YES THEN DO;
    PUT SKIP EDIT (NEXT) (A);
    END;

/* CHOOSE THE RECORD WITH THE GREATER NUMBER OF NON-BLANK TRANSACTION DATE FIELDS */
TRANSACTION_COUNT_FIRST = 0;
TRANSACTION_COUNT_NEXT = 0;

BLANK_DATE_FIRST = NO;
BLANK_DATE_NEXT = NO;

DO I = 1 TO 10 WHILE (BLANK_DATE_FIRST=NO & BLANK_DATE_NEXT=NO);
    IF FIRST.DA_FA_UD(I) \= BLANK8
        THEN TRANSACTION_COUNT_FIRST = TRANSACTION_COUNT_FIRST + 1;
    ELSE BLANK_DATE_FIRST = YES;

    IF NEXT.DA_FA_UD(I) \= BLANK8
        THEN TRANSACTION_COUNT_NEXT = TRANSACTION_COUNT_NEXT + 1;
    ELSE BLANK_DATE_NEXT = YES;
END;

IF TRANSACTION_COUNT_FIRST < TRANSACTION_COUNT_NEXT THEN FIRST = NEXT;

/* INCREMENT COUNTER AND SET FLAG */
MULTIPLES_COUNT = MULTIPLES_COUNT + 1;
MULTIPLES_FLAG = YES;
RETURN;
END MULTIPLES;
%PAGE;
/**** ................................................................*******/
/* FINISH */
/**** ................................................................*******/

FINISH: PROC;

IF MULTIPLES_COUNT > 0 THEN SIGNAL ENDPAGE(SYSPRINT);

PUT EDIT ('SUMMARY COUNTS:')
   (SKIP(5),COL(5),A)
   ('RECORDS READ = ',INPUT_COUNT)
   (SKIP(2),COL(2),A,F(7))
   ('MULTIPLES = ',MULTIPLES_COUNT)
   (SKIP(2),COL(2),A,F(7))
   ('RECORDS WRITTEN = ',OUTPUT_COUNT)
   (SKIP(2),COL(2),A,F(7));

CLOSE FILE (IN),
   FILE (OUT),
   FILE (DATEIN),
   FILE (SYSPRINT);

RETURN;

END FINISH;

END S02A;
//GO.IN DD DSN=G.G1157.AB230.S01B.SCRN.P3.DATA,DISP=SHR
//GO.OUT DD DSN=G.G1157.AB230.S02A.MULT.P3.DATA,DISP=(NEW,CATLG),
//    UNIT=USER,Vol=SER=TEMP11,
//    DCB=(RECFM=FB,LRECL=725,BLKSIZE=18850),
//    SPACE=(CYL,(25,25),RLSE)
//GO.DATEIN DD *
3 19830418 19830424
STEP 3 - CLASSIFY CASES BY BONUS TEST PROGRAM AND APPLICANT QUALITY LEVEL

Part A - Write Raw Record with Cell Values Added
S03A: PROC OPTIONS(MAIN);

/********************
/*
/* PROGRAM:         S03A.CELL.P3.SORC
/* LANGUAGE:        PL/I
/* PURPOSE:         THIS PROGRAMS ASSIGNS CANDIDATE RECORDS
/* TO ONE OF SIX CELLS:
/*                  QUALITY: HIGH, LOW
/*                  BONUS TEST: A, B OR C.
/*
/* IN OUTPUT RECORD FROM THIS PROGRAM
/* COL 715 INDICATES THE QUALITY (H,L)
/* AND COL 716 INDICATES THE BONUS TEST
/* CELL (A,B,C).
/*
/* INPUT:           S02A.MULT.P3.DATA (FILE OF UNIQUE
/*                  SORTED SCREENED
/*                  RECORDS)
/*                  DATEIN (PERIOD NUMBER,
/*                  STARTING DATE,
/*                  ENDING DATE)
/*
/* OUTPUT:          S03A.CELL.P3.DATA (INPUT FILE WITH CELL
/*                  DATA ADDED)
/*
/* LOGIC:           INITIALIZE DATA STRUCTURES, INTERNAL
/*                  VARIABLES, AND ON-UNITS.
/*
/* OPEN FILES AND READ DATEIN DATA.
/*
/* FOR EACH RECORD IN THE FILE:
/* DETERMINE QUALITY CELL.
/* DETERMINE BONUS CELL.
/* INSERT INFORMATION IN THE DATA
/* STRUCTURE.
/* WRITE THE RECORD.
/*
/* PRINT SUMMARY COUNTS AND CLOSE FILES.
/********************
DECLARE PERIOD
    BEGIN_DATE
    END_DATE
    FILE INPUT RECORD SEQUENTIAL,
    FILE OUTPUT RECORD SEQUENTIAL,
    FILE INPUT STREAM,
    FILE OUTPUT STREAM PRINT;

DECLARE IN
    OUT
    DATEIN
    SYSPRINT
    FILE INPUT RECORD SEQUENTIAL,
    FILE OUTPUT RECORD SEQUENTIAL,
    FILE INPUT STREAM,
    FILE OUTPUT STREAM PRINT;

DECLARE THERE IS DATA
    YES
    NO
    BIT(1),
    BIT(1) INIT('1'B),
    BIT(1) INIT('0'B);

DECLARE INPUT_COUNT
    OUTPUT_COUNT
    CELL_COUNT(2,3)
    FIXED BIN(15),
    FIXED BIN(15),
    FIXED BIN(15);

DECLARE CELL
    CHAR(002);

DECLARE ENDFILE
    ENDPAGE
    BUILTIN,
    BUILTIN,
    BUILTIN;

DECLARE SUM
    BUILTIN;

DECLARE V A R I A B L E S
    CHAR(001),
    CHAR(008),
    CHAR(008);
DECLARE 1 REC_725,
  2 FILL01  CHAR(018),
  2 AA_FE_UA  CHAR(002), /* MEPS CODE */
  2 FILL02  CHAR(075),
  2 YE_NQ_AA  CHAR(002), /* YEARS OF EDUCATION */
  2 ED_UC_AA  CHAR(001), /* EDUCATION CERTIFICATE */
  2 FILL03  CHAR(021),
  2 PE_CD_UA  CHAR(002), /* MENTAL CATEGORY (AFQT) */
  2 FILL04  CHAR(593),
  2 QUALITY_CELL  CHAR(001), /* VALUES H OR L */
  2 BONUS_CELL  CHAR(001), /* VALUES A, B, OR C */
  2 FILL05  CHAR(009);
%PAGE;

/**************************************************************************
 */
INITIALIZATION
/**************************************************************************

OUTPUT_COUNT = 0;
CELL_COUNT = 0;
THERE_IS_DATA = YES;

OPEN FILE (IN),
    FILE (OUT),
    FILE (DATEIN),
    FILE (SYSPRINT);

GET FILE(DATEIN) EDIT (PERIOD, BEGIN_DATE, END_DATE)
    (A(1),X(1),A(8),X(1),A(8));
ON ERROR SNAP BEGIN;
    ON ERROR SYSTEM;
    PUT SKIP LIST
        ((50)'*'||' DEBUG START'||(50)'*');
    PUT SKIP DATA;
    PUT SKIP LIST
        ((50)'*'||' DEBUG END'||(50)'*');
END;

ON ENDFILE(IN) THERE_IS_DATA=NO;

ON ENDPAGE(SYSPRINT) BEGIN;
    PUT EDIT
        ('1983 APPLICANT SURVEY')
        (SKIP(5),COL(28),A)
        ('PERIOD ',PERIOD,':')
        (SKIP(2),COL(20),A,A,A)
        (BEGIN_DATE,' THROUGH ',END_DATE)
        (A,A,A)
        ('STEP 3A CELL - ASSIGN RECORDS TO CELL')
        (SKIP(2),COL(20),A);
    PUT SKIP(2) LIST (' ');
END;
%PAGE;

/**************************************************************
 /* MAIN PROCESSING */
/**************************************************************

SIGNAL ENDPAGE (SYSPRINT);

READ FILE (IN) INTO (REC_725);
INPUT_COUNT = 1;

DO WHILE(THERE_IS_DATA=YES);

/* DETERMINE QUALITY INDICATOR, */
/* H = HIGH QUALITY, HIGH-SCHOOL GRADUATE AND AFQT 1-3A */
/* L = LOW QUALITY, OTHER */
IF ( (YE_NO_AA > '12') |
    (YE_NO_AA = '12' & (ED_UC_AA = '2' | ED_UC_AA = '6')) |
    (YE_NO_AA = '11' & ED_UC_AA = 'S') ) &
    (PE_CD_UA = '1' | PE_CD_UA = '2' | PE_CD_UA = '3A')
THEN QUALITY_CELL = 'H';
ELSE QUALITY_CELL = 'L';

/* DETERMINE BONUS CELL */
/* A = $5000/4YRS (CONTROL CELL) */
/* B = $8000/4YRS */
/* C = $8000/4YRS + $4000/3YRS */
IF AA_FE_UA = '02' | AA_FE_UA = '70'
    AA_FE_UA = '71' | AA_FE_UA = '54'
    AA_FE_UA = '55' | AA_FE_UA = '38'
    AA_FE_UA = '27' | AA_FE_UA = '09'
    AA_FE_UA = '78' | AA_FE_UA = '13'
THEN BONUS_CELL = 'B';
ELSE IF AA_FE_UA = '56' | AA_FE_UA = '72'
    AA_FE_UA = '06' | AA_FE_UA = '42'
    AA_FE_UA = '43' | AA_FE_UA = '45'
    AA_FE_UA = '75' | AA_FE_UA = '32'
    AA_FE_UA = '48' | AA_FE_UA = '15'
THEN BONUS_CELL = 'C';
ELSE BONUS_CELL = 'A';

/* WRITE DATA AND INCREMENT CELL COUNT */
WRITE FILE(OUT) FROM (REC_725);
OUTPUT_COUNT = OUTPUT_COUNT + 1;

CELL = QUALITY_CELL || BONUS_CELL;
IF CELL = 'HA' THEN CELL_COUNT(1,1) = CELL_COUNT(1,1) + 1;
ELSE IF CELL = 'HB' THEN CELL_COUNT(1,2) = CELL_COUNT(1,2) + 1;
ELSE IF CELL = 'HC' THEN CELL_COUNT(1,3) = CELL_COUNT(1,3) + 1;
ELSE IF CELL = 'LA' THEN CELL_COUNT(2,1) = CELL_COUNT(2,1) + 1;
ELSE IF CELL = 'LB' THEN CELL_COUNT(2,2) = CELL_COUNT(2,2) + 1;
ELSE IF CELL = 'LC' THEN CELL_COUNT(2,3) = CELL_COUNT(2,3) + 1;
%PAGE;

/* READ NEW RECORD */
READ FILE (IN) INTO (REC_725);
IF THERE IS DATA = YES THEN INPUT_COUNT = INPUT_COUNT + 1;

END;

CALL FINISH;
%PAGE;
/*  
**  FINISH  
*/
/*  
**  FINISH: PROC;
*/

PUT EDIT ('SUMMARY COUNTS: ')
  (SKIP(5),COL(5),A)
  ('RECORDS READ = ',INPUT_COUNT)
  (SKIP(2),COL(2),A,F(7))
  ('RECORDS WRITTEN = ',OUTPUT_COUNT)
  (SKIP(2),COL(2),A,F(7));

/* PRINT TABLE OF CELL COUNTS */
PUT EDIT ('BONUS', 'A B C TOTAL')
  (SKIP(5),COL(22),A,SKIP(1),COL(17),A)
  ('HIGH ',CELL_COUNT(1,1),CELL_COUNT(1,2),
   CELL_COUNT(1,3),SUM(CELL_COUNT(1,*)))
  (SKIP(1),COL(8),A,3 F(7),F(8))
  ('QUAL')
  (SKIP(1),COL(2),A)
  ('LOW ',CELL_COUNT(2,1),CELL_COUNT(2,2),
   CELL_COUNT(2,3),SUM(CELL_COUNT(2,*)))
  (SKIP(1),COL(8),A,3 F(7),F(8))
  ('TOTAL',SUM(CELL_COUNT(*,1)),SUM(CELL_COUNT(*,2)),
   SUM(CELL_COUNT(*,3)),SUM(CELL_COUNT(*,*)))
  (SKIP(2),COL(8),A,3 F(7),F(8));

CLOSE FILE (IN),
   FILE (OUT),
   FILE (DATEIN),
   FILE (SYSPRINT);

RETURN;

END FINISH;

END S03A;
//GO.IN DD DSN=G.G1157.AB230.S02A.MULT.P3.DATA,DISP=SHR
//GO.OUT DD DSN=G.G1157.AB230.S03A.CELL.P3.DATA,DISP=(NEW,CATLG),
//    UNIT=USER, VOL=SER=TEMP11,
//    DCB=(RECFM=FB, LRECL=725, BLKSIZE=18850),
//    SPACE=(CYL,(20,20),RLSE)
//GO.DATEIN DD *
1 19830404 19830410
STEP 3 - CLASSIFY CASES BY BONUS TEST PROGRAM AND APPLICANT QUALITY LEVEL

Part B - Sort the Records by Cell Value
//******************************************************
//** PROGRAM:    S03B.CELL.P3.SORC                      */
//** LANGUAGE:   IBM SORT/MERGE                       */
//** PURPOSE:    SORT THE CANDIDATE RECORDS           */
//**            BY CELL VALUE                        */
//** INPUT:      S03A.CELL.P3.DATA (FILE WITH CELL DATA) */
//** OUTPUT:     S03B.CELL.P3.DATA (FILE SORTED BY CELL DATA) */
//** LGCIC:      SORT THE FILE BASED ON COLUMNS 715-716 */
//******************************************************
//SORT EXEC SORTD
//SORTIN   DD DSN=G.G1157.AB230.S03A.CELL.P3.DATA,DISP=SHR
//SORTOUT  DD DSN=G.G1157.AB230.S03B.CELL.P3.DATA,DISP=(NEW,CATLG),
//          UNIT=USER,VOL=SER=TEMP11,
//          DCB RECFS=FB,LRECL=725,BLKSIZE=18850,
//          SPACE=(TRK,(50,50),RLSE)
//SYSIN DD *
SORT FIELDS=(715,2,CH,A)
/*
STEP 4 - RANDOMLY SELECT CASES

Part A - Write Selected Cases to a Raw File
USE LIBL AND LKLBDSN OPTIONS TO IMPLEMENT IMSL
S04ACELL EXEC PLICLG,RECG=750K,
LIBL='SYS1.IMSL.SP',LKLBDSN='SYS1.FORTLIB'
PLI.SYSIN DD *
S04A.CHOS.P3.SORC */
S04A: PROC OPTIONS(MAIN);

**************************************************************************************************
/**
/** PROGRAM: S04A.CHOS.P3.SORC */
/** LANGUAGE: PL/I AND THE IMSL SUBROUTINE LIBRARY */
/** PURPOSE: THIS PROGRAMS RANDOMLY CHOSES (VIA */
/** IMSL) EXACT SIZED, STRATIFIED SAMPLES */
/** BASED ON INPUT PARAMETERS FOR EACH OF */
/** THE 6 QUALITY/BONUS-TEST CELLS. */
/**
/** THE INPUT PARAMETERS FOR THIS PROGRAM */
/** CONSIST OF: */
/**
/** A) A PERIOD AND DATE RECORD */
/**
/** B) 6 RECORDS, EACH OF WHICH HAS */
/** A CELL CODE, THE NUMBER OF */
/** RECORDS IN THAT CELL, AND THE */
/** NUMBER TO BE CHOSEN */
/**
/** INPUT: S03B.CELL.P3.DATA (FILE SORTED BY CELL */
/** DATA) */
/** PARAMIN (PERIOD NUMBER, */
/** STARTING DATE, */
/** ENDING DATE, */
/** SELECTION CRITERIA) */
/**
/** OUTPUT: S04A.CHOS.P3.DATA (FILE OF RANDOMLY */
/** SELECTED RECORDS) */
/**
/** LOGIC: INITIALIZE DATA STRUCTURES, INTERNAL */
/** VARIABLES, AND ON-UNITS. */
/**
/** OPEN FILES AND READ DATE DATA FROM */
/** PARAMIN. */
/**
/** FOR EACH OF THE 6 CELL RECORDS IN */
/** PARAMIN: */
/** READ A CELL RECORD. */
/** READ THE APPROPRIATE NUMBER OF INPUT */
/** RECORDS AND RANDOMLY CHOOSE AND */
/** WRITE AN EXACT SIZE SAMPLE. */
/**
/** PRINT SUMMARY COUNTS AND CLOSE FILES. */
**************************************************************************************************
DECLARE PERIOD
   BEGIN_DATE
   END_DATE
   CELL_CHOICE
   N_AVAILABLE
   N_needed
DECLARE IN
   OUT
   PARAMIN
   SYSPRINT
DECLARE DSEED
  GGUBFS
DECLARE N_CHOSEN
   TOTAL_AVAILABLE
   TOTAL_CHOSEN
   PERCENT_CHOSEN
   I
   J
   K
   N
DECLARE ENDPAGE
DECLARE 1 REC 725,
    2 FILL01       CHAR(714),
    2 CELL         CHAR(002),
    2 FILL02       CHAR(009);
%PAGE;
/***********************************************************************/
/* INITIALIZATION */
/***********************************************************************/

TOTAL_AVAILABLE = 0;
TOTAL_CHOSEN    = 0;

OPEN FILE (IN),
    FILE (OUT),
    FILE (PARAMIN),
    FILE (SYSPRINT);

GET FILE(PARAMIN) EDIT (PERIOD, BEGIN_DATE, END_DATE)
    (A(1),X(1),A(8),X(1),A(8));
ON ERROR SNAP BEGIN;
    ON ERROR SYSTEM;
    PUT SKIP LIST
        ((50)'*') || ' DEBUG START ' || (50)'*');
    PUT SKIP DATA;
    PUT SKIP LIST
        ((50)'*') || ' DEBUG END ' || (50)'*');
END;

ON ENDPAGE(SYSPRINT) BEGIN;
    PUT EDIT
        ('1983 APPLICANT SURVEY')
        (SKIP(5), COL(28), A)
        ('PERIOD ', PERIOD ': ')
        (SKIP(2), COL(20), A, A, A)
        (BEGIN_DATE, ' THROUGH ', END_DATE)
            (A, A, A)
        ('STEP 4A CHOS - RANDOMLY CHOOSE RECORDS')
        (SKIP(2), COL(20), A)
        ('CELL AVAILABLE CHosen %')
        (SKIP(5), COL(2), A);
    PUT SKIP(2) LIST (' ');
END;
**MAIN PROCESSING**

SIGNAL ENDPAGE (SYSPRINT);

/* EXACT SIZE RANDOM SAMPLE OF EACH OF 6 CELLS */
DO I = 1 TO 6;
    GET FILE(PARAMIN) EDIT (CELL_CHOOSE, NAVAILABLE, NNEEDED)
        (SKIP(1),A(2),X(1),F(4),X(1),F(4));
    TOTAL_AVAILABLE = TOTAL_AVAILABLE + N_AVAILABLE;
    N = N_AVAILABLE;
    K = N_NEEDED;
    N_CHOSEN = 0;
    DO J = 1 TO N_AVAILABLE;
        READ FILE (IN) INTO (REC_725);
        IF CELL ^= CELL_CHOOSE THEN SIGNAL ERROR;
        /* GGBDFS IS AN IMSL SUBROUTINE */
        RANDOM = GGBDFS(DSEED);
        IF RANDOM < K/N THEN DO;
            TOTAL_CHOSEN = TOTAL_CHOSEN + 1;
            N_CHOSEN = N_CHOSEN + 1;
            WRITE FILE (OUT) FROM (REC_725);
            K = K - 1;
        END;
    END;
    N = N - 1;
END;

PERCENT_CHOSEN = 100.0 * (N_CHOSEN/N_AVAILABLE);

PUT EDIT (CELL_CHOOSE, NAVAILABLE, N_CHOSEN, PERCENT_CHOSEN)
    (SKIP(1),COL(2),A,COL(8),F(9),F(8),F(4));
END;
PERCENT_CHOSEN = 100.0 * (TOTAL_CHOSEN/TOTAL_AVAILABLE);
PUT EDIT ('TOTAL', TOTAL_AVAILABLE, TOTAL_CHOSEN, PERCENT_CHOSEN)
(SKIP(2),COL(2),A,COL(8),F(9),F(8),F(4));
END S04A;

/* NEED FT06 TO PROVIDE FOR IMSL ERROR MESSAGES */
GO.FT06F001 DD SYSOUT=A
GO.IN DD DSN=G.G1157.AB230.S03B.CELL.P3.DAT,DISP=SHR
GO.OUT DD DSN=G.G1157.AB230.S04A.CHOS.P3.DAT,DISP=(NEW,CATLG),
UNIT=USER,UNIT=SER=TEMP11,
DCB=(RECFM=FB,LRECL=725,BKSIZE=18850),
SPACE=(TRK,(25,25),RLSE)
GO.PARAMIN DD *
3 19830418 19830424
HA 2099 0676
HB 0426 0338
HC 0421 0338
LA 4822 0676
LB 0984 0338
LC 0994 0338
STEP 4 - RANDOMLY SELECT CASES

Part X - Explore Output from the Cell Assignment
/S04EXPL EXEC SAS 
//IN1 DD DSN=G.G1157.AB230.S04A.CHOS.P3.DATA,DISP=SHR 
//SYSIN DD *

**************************************************************************
/* PROGRAM: S04.CHOS.P3.SORC */
/* LANGUAGE: SAS */
/* PURPOSE: EXPLORE OUTPUT FROM CELL ASSIGNMENT */
/* INPUT: S04A.CHOS.P3.SORC (SELECTED MRS RECORDS) */
/* */
/* OUTPUT: TABLES, LIST */
/* */
/* LOGIC: READ RAW DATA INTO A SAS FILE. */
/* */
/* RECODE UNPRINTABLE CHARACTERS. */
/* */
/* PRINT FREQUENCIES ON SELECTED VARIABLES. */
**************************************************************************
PAGE;
DATA CELL;
  INFILE IN1;

INPUT @001 SO_CA_AB $CHAR9.
     @021 NA_RG_UA $CHAR27.
     @048 DA_FA_UC $CHAR8.
     @056 PM_SV_AA $CHAR2.
     @058 ST_CO-UA $CHAR5.
     @063 ZP_CO-UA $CHAR5.
     @070 SE_XA_AA $CHAR1.
     @086 DA_FA UB $CHAR8.
     @096 YEARCERT $CHAR3.
     @106 RE_ID-UA $CHAR1.
     @120 PE_CD-UA $CHAR2.
     @186 DA_FA_UX $CHAR8.
     @194 DA_FA_UY $CHAR8.
     @233 TM_EN-UA $CHAR1.
     @256 TR_TC-UA $CHAR6.
     @505 DA_FA_UJ $CHAR8.
     @692 MN_CD-UA $CHAR1.
     @696 DA_FA_UD $CHAR8.
     @698 DA_FA_UD $CHAR8.
     @708 AA_FE_TR $CHAR2.
     @710 SR_VC_TR $CHAR3.
     @715 CELL_ $CHAR2.;

LABEL SO_CA_AB = SOCIAL SECURITY NUMBER
  NA_RG_UA = NAME
  DA_FA_UC = DATE OF ACTION
  PM_SV_AA = PRIOR MILITARY SERVICE
  ST_CO-UA = STATE AND COUNTY CODE
  ZP_CO-UA = ZIP CODE
  SE_XA_AA = SEX
  DA_FA_UB = DATE OF BIRTH
  YEARCERT = EDUCATION YEARS AND CERTIFICATE
  RE_ID-UA = RECORD TYPE
  PE_CD-UA = MENTAL CATEGORY
  DA_FA_UX = DATE OF ENLISTMENT
  DA_FA_UY = ACTIVE DUTY SERVICE DATE
  TM_EN-UA = TERM OF ENLISTMENT
  TR_TC-UA = TRANSFER TO CODE
  DA_FA_UJ = PROJECTED ACTIVE DUTY DATE
  MN_CD-UA = MENTAL CODE OF INTEREST
  DA_FA_UD = DATE OF ACTION OF INTEREST
  AA_FE_TR = MEPS CODE OF INTEREST
  SR_VC_TR = SERVICE PROCESSED FOR OF INTEREST
  CELL_ = QUALITY-BONUS CELL;

/* RECODE UNPRINTABLE CHARACTERS */
IF PE_CD-UA < '1' THEN PE_CD-UA = ' '; 

PROC FREQ; TABLES SO_CA_AB PM_SV_AA SE_XA_AA YEARCERT#PE_CD-UA
          MN_CD-UA DA_FA_UD SR_VC_TR AA_FE_TR CELL;
TITLE1 S041.CELL.P3.SORC;
TITLE2 EXPLORE RANDOMLY SELECTED SAMPLE;
PROCESS INDIVIDUAL DATA FORMS (STEP 5)

This subsection presents the program used to consolidate the IDF records prior to matching them with the MRS records. Figure 4 summarizes the consolidation process.

![Diagram showing the consolidation process]

**Fig. 4—Consolidate IDF records (Step 5)**
STEP 5 - PROCESS INDIVIDUAL DATA FORMS

Part A - Add This Week's Forms to Those Received Earlier
//S05ARIDF EXEC SAS
//IN1 DD DSN=G.G1157.AB230.IDF0428,DISP=SHR
//IN2 DD DSN=G.G1157.AB230.IDF0429,DISP=SHR
//IN3 DD DSN=G.G1157.AB230.IDF0502,DISP=SHR
//IN4 DD DSN=G.G1157.AB230.IDF0503,DISP=SHR
//IN5 DD DSN=G.G1157.AB230.IDF0504,DISP=SHR
//IN6 DD DSN=G.G1157.AB230.S05A.RIDF.P2.SAS,DISP=SHR
//OUT DD DSN=G.G1157.AB230.S05A.RIDF.P3.SAS,DISP=(NEW,CATLG),
// UNIT=USER, VOL=SER=TEMP11,
// SPACE=(TRK,(50,50),RLSE)
//SYSSIN DD *

******************************************************************************
/**
/* PROGRAM: S05A.RIDF.P3.SORC
/* LANGUAGE: SAS
/* PURPOSE: COMBINE IDF FILES AND EVALUATE COLLECTION RATES ACROSS PERIODS
/* INPUT: S05A.RIDF.P2.SAS(Iaaiibb)
/* ID.FILES
/* OUTPUT: S05A.RIDF.P3.SAS(IxxIyy)
/* TABLES
/* LOGIC: READ EACH OF THE RAW IDF FILES FOR THIS PERIOD INTO SAS DATA SETS, AND DEFINE A FLAG WHICH INDICATES THE DAY THE FORMS WERE COLLECTED.
/* CONCATENATE THESE FILES WITH THE SAS IDF FILE FROM THE PREVIOUS PERIOD (WHICH CONTAINS IDF RECORDS STARTING AT PERIOD 1).
/* WRITE THIS NEW FILE AS A SAS DATA SET.
/* EXPLORE.
******************************************************************************

NOTE: The MRS increments were received at Rand on the Wednesday following a particular testing week. Recently received IDF files were concatenated on the same day. Thus, such concatenations consolidated the raw IDF records received on the five work days beginning with Thursday of the week covered by the increment and ending with the following Wednesday. Because two increments were used per test period, only IDFs arriving after receipt of the first MRS increment needed to be concatenated when the sample was drawn (here, IDFs received on 4/28-5/4 for the test period 4/18-4/24).
DATA IDFO429;
INFILE IN2;
INPUT     LAST     $CHAR14.
           FIRST    $CHAR09.
           MIDDLE   $CHAR01.
           ADDRESS  $CHAR23.
           CITY     $CHAR14.
           STATE    $CHAR14.
           SEX      $CHAR01.
           MONTH    $CHAR09.
           DAY      $CHAR02.
           YEAR     $CHAR02.
           H_PHONE  $CHAR10.
           O_PHONE  $CHAR10.
           INITALS  $CHAR03.
           MEPS     $CHAR02.
           TESTDATE $CHAR03.;

SOURCE = '0429 ';

DATA IDFO502;
INFILE IN3;
INPUT     LAST     $CHAR14.
           FIRST    $CHAR09.
           MIDDLE   $CHAR01.
           ADDRESS  $CHAR23.
           CITY     $CHAR14.
           STATE    $CHAR14.
           SEX      $CHAR01.
           MONTH    $CHAR09.
           DAY      $CHAR02.
           YEAR     $CHAR02.
           H_PHONE  $CHAR10.
           O_PHONE  $CHAR10.
           INITALS  $CHAR03.
           MEPS     $CHAR02.
           TESTDATE $CHAR03.;

SOURCE = '0502 ';

DATA IDFO503;
INFILE IN4;
INPUT LAST $CHAR14.
FIRST $CHAR09.
MIDDLE $CHAR01.
ADDRESS $CHAR23.
CITY $CHAR14.
STATE $CHAR14.
SEX $CHAR01.
MONTH $CHAR09.
DAY $CHAR02.
YEAR $CHAR02.
H_PHONE $CHAR10.
O_PHONE $CHAR10.
INITIALS $CHAR03.
MEPS $CHAR02.
TESTDATE $CHAR03.;
SOURCE = '0503 ';

DATA IDFO504;
INFILE IN5;
INPUT LAST $CHAR14.
FIRST $CHAR09.
MIDDLE $CHAR01.
ADDRESS $CHAR23.
CITY $CHAR14.
STATE $CHAR14.
SEX $CHAR01.
MONTH $CHAR09.
DAY $CHAR02.
YEAR $CHAR02.
H_PHONE $CHAR10.
O_PHONE $CHAR10.
INITIALS $CHAR03.
MEPS $CHAR02.
TESTDATE $CHAR03.;
SOURCE = '0504 ';

DATA OUT.105104;
SET IN6.104127 IDFO428 IDFO429 IDFO502 IDFO503 IDFO504;

PROC FREQ; TABLES (SOURCE MEPS)*TESTDATE MEPS*SOURCE;
TITLE1 SO5A.RIDF.P3.SORC;
TITLE2 EXPLORE CURRENT SET OF IDF FILES;
MATCH SCREENED MRS RECORDS TO IDF RECORDS (STEP 6)

This subsection presents the programs used to match the screened MRS and IDF records. Figure 5 summarizes the matching process.

Fig. 5—Match MRS and IDF records (Step 6)
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part A - Create SAS File of MRS Data
/* Program: S06A.MTCH.P3.SORC
 * Language: SAS
 * Purpose: CREATE SAS FILE OF MRS DATA TO
 *          BE USED IN MATCHING TO THE IDF FILE
 *          AND TO BE DELIVERED TO AMRIGON
 * Input: S04A.CHOS.P2.DATA (RANDOM SAMPLE FROM
 *          THE PREVIOUS PERIOD)
 *         S04A.CHOS.P3.DATA (RANDOM SAMPLE FROM
 *          THIS PERIOD)
 * Output: S06A.MTCH.P3.SAS(R69PASS0) (SAS FILE OF
 *          CANDIDATE MRS RECORDS)
 * Logic: CREATE A SAS FILE OF MRS RECORDS FROM
 *        THE PREVIOUS PERIOD THAT WERE NOT
 *        MATCHED. DEFINE AN INDICATOR FLAG THAT
 *        IDENTIFIES THIS GROUP.
 *        CREATE A SAS FILE OF MRS RECORDS FROM
 *        THIS PERIOD AND DEFINE AN APPROPRIATE
 *        INDICATOR FLAG.
 *        CONCATENATE THE TWO FILES AND DEFINE
 *        VARIABLES THAT WILL BE USED IN MATCHING.
 *        WRITE THIS FILE.
 *        EXPLORE.
 */
PAGE;
/* READ CASES FROM PERIOD 2 THAT WERE NOT MATCHED */

DATA P2;

INFILE IN1;

INPUT @001 SO_CA_AB $CHAR9.
@021 NA_RG_UA $CHAR27.
@048 DA_FA_UC $CHAR8.
@056 PM_SV_AA $CHAR2.
@058 ST_CO_UA $CHAR5.
@058 STFIPS ?? 2.
@063 ZP_CO_UA $CHAR5.
@070 SE_XA_AA $CHAR1.
@086 DA_FA UB $CHAR8.
@086 +2 B_YEAR  2.
B_MONTH  2.
B_DAY    2.
@096 YEARCERT $CHAR3.
@106 RE_ID_UA $CHAR1.
@120 PE_CD_UA $CHAR2.
@186 DA_FA UX $CHAR8.
@194 DA_FA_UY $CHAR8.
@233 TM_EN_UA $CHAR1.
@256 TR_TC UA $CHAR6.
@505 DA_FA_UJ $CHAR8.
@692 MN_CD_UA $CHAR1.
@696 DA_FA UD $CHAR8.
@708 AA_FE_TR $CHAR2.
@710 SR_VC TR $CHAR3.
@715 CELL $CHAR2.;

/* MATCHING PERIOD FLAG */
WEEK = '4';

/* SELECT BY SSN */
IF
SO_CA_AB = /* LIST OF SSN'S DELETED HERE */
.
.
.
;
PAGE;

DATA P3;
INFILE IN2;

INPUT  @001   SO_CA_AB $CHAR9.
       @021   NA_RG_UA $CHAR27.
       @048   DA_FA_UC $CHAR8.
       @056   PM_SV_A4 $CHAR2.
       @058   ST_CO_UA $CHAR5.
       @058   STFIPS ?? 2.
       @063   ZP_CO_UA $CHAR5.
       @070   SE_XA_AA $CHAR1.
       @086   DA_FA UB $CHAR8.
       @086 +2  B_YEAR 2.
              B_MONTH 2.
              B_DAY 2.
       @096   YEARCERT $CHAR3.
       @106   RE_ID_UA $CHAR1.
       @120   PE_CD_UA $CHAR2.
       @186   DA_FA UX $CHAR8.
       @194   DA_FA_UY $CHAR8.
       @233   TM_EN_UA $CHAR1.
       @256   TR_TC_UA $CHAR6.
       @505   DA_FA_UJ $CHAR8.
       @692   MN_CD_UA $CHAR1.
       @696   DA_FA UD $CHAR8.
       @708   AA FE TR $CHAR2.
       @710   SR VC TR $CHAR3.
       @715   CELL $CHAR2.;

/*/ MATCHING PERIOD FLAG */
/*/  1 = ORIGINAL  0404-0410 */
/*/  2 = RESIDUAL  0404-0410 */
/*/  3 = ORIGINAL  0411-0417 */
/*/  4 = RESIDUAL  0411-0417 */
/*/  5, 6 = ORIGINAL  0418-0424 */
/*/  7 = STILL RESIDUAL  0404-0410 */
/*/  8 = STILL RESIDUAL  0411-0417 */
/*/  9 = RESIDUAL  0418-0424 */
/*/ */
/*/ RANDOMLY ASSIGN VALUE OF WEEK FOR USE IN DETERMINING */
/*/ SURVEY QUESTION ORDER */
IF UNIFORM(0) <= .5
THEN WEEK = '5';
ELSE WEEK = '6';
PAGE;
DATA OUT.R69PASS0 DROP = B YEAR  B MONTH  B DAY  STFIPS
   FIRST690 LAST690 FIRSBLNK);
   SET P1 P3;
   LABEL SO_C A B = SOCIAL SECURITY NUMBER
    NA RG-UA = NAME
    DA FA UC = DATE OF ACTION
    PM SV AA = PRIOR MILITARY SERVICE
    ST CO UA = STATE AND COUNTY CODE
    ZP CO UA = ZIP CODE
    SE XA AA = SEX
    DA FA UB = DATE OF BIRTH
    YEARCERT = EDUCATION YEARS AND CERTIFICATE
    RE ID UA = RECORD TYPE
    PE CD UA = MENTAL CATEGORY
    DA FA UX = DATE OF ENLISTMENT
    DA FA UY = ACTIVE DUTY SERVICE DATE
    TM EN UA = TERM OF ENLISTMENT
    TR TC UA = TRANSFER TO CODE
    DA FA UJ = PROJECTED ACTIVE DUTY DATE
    MN CD UA = MENTAL CODE OF INTEREST
    DA FA UD = DATE OF ACTION OF INTEREST
    AA FE TR = MEPS CODE OF INTEREST
    SR VC TR = SERVICE PROCESSED FOR OF INTEREST
    Q CELL = QUALITY-BONUS CELL;

   /* EXTRACT MEPS DATA */
   MEPS690 = AA FE TR;

   /* EXTRACT FIRST AND LAST NAME DATA */
   LENGTH LAST690 $ 4
      FIRST690 $ 1;
   FIRSBLNK = INDEX(NA RG-UA, ' ');
   IF FIRSBLNK >= 5
      THEN LAST690 = SUBSTR(NA RG-UA, 1, 4);
   ELSE LAST690 = SUBSTR(NA RG-UA, 1, FIRSBLNK-1);
   FIRST690 = SUBSTR(NA RG-UA, FIRSBLNK+1, 1);
   NAME690 = LAST690 || ' ' || FIRST690;

   /* BIRTH DATE DATA */
   BIRTH690 = MDY(B MONTH, B DAY, B YEAR);
   FORMAT BIRTH690 DATE7. ;

   /* TEST DATE DATA */
   TEST690 = SUBSTR(DA FA UD, 6, 3);

   /* RECODE STATE FIPS TO STATE NAME */
   STATE690 = FIPSTATE(STFIPS);
/* OUTPUT */
* PROC SORT BY SO_CA_AB;
* PROC PRINT;
PROC FREQ; TABLES WEEK;
TITLE1 S06A.MTCH.P3.SORC;
TITLE2 CREATE SAS FILE OF REC-690 MATCHING AND DELIVER VARIABLES;
* TITLE3 LIST SORTED BY SO_CA_AB;

PROC CONTENTS NOSOURCE;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part B - Create SAS File of IDF Data
//S06BMTCH EXEC SAS
//IN  DD DSN=G.G1157.AB230.S05A.RIDF.P3.SAS,DISP=SHR
//OUT DD DSN=G.G1157.AB230.S06B.MTCH.P3.SAS,DISP=(NEW,CATLG),
//       UNIT=USER, VOL=SER=TEMP11,
//       SPACE=(TRK,(40,40),RLSE)
//SYSSIN DD *

/*********************************************************
/* PROGRAM: S06B.MTCH.P3.SORC */
/* LANGUAGE: SAS */
/* PURPOSE: CREATE SAS FILE OF IDF DATA TO */
/* BE USED IN MATCHING TO THE MRS FILE */
/* */
/* INPUT: S05A.RIDF.P3.DATA(105104) (ALL IDF */
/* RECORDS) */
/* OUTPUT: S06B.MTCH.P3.SAS(IDFPASSO) (RECENT IDF */
/* RECORDS WITH NEW */
/* VARIABLES) */
/* */
/* LOGIC: SELECT IDF RECORDS FROM THIS PERIOD AND */
/* DEFINE VARIABLES THAT WILL BE USED IN */
/* MATCHING. */
/* */
/* WRITE THE FILE. */
/* */
/* EXPLORE. */
/***********************************************************/
PAGE;
DATA OUT.IDFPASSO; SET IN.IO5104;
/* KEEP ONLY IDPS FROM THIS PERIOD */
IF SOURCE >= '0418';
/* RENAME MEPS VARIABLE */
RENAME MEPS = MEPSIDF;

/* EXTRACT FIRST AND LAST NAME DATA */
NAMEIDF = SUBSTR(LAST,1,4) || ' ' || SUBSTR(FIRST,1,1);

/* BIRTH DATE DATA */
MONTH3 = SUBSTR(MONTH,1,3);

IF MONTH3 = 'JAN'
THEN MM = 1;
ELSE IF MONTH3 = 'FEB'
THEN MM = 2;
ELSE IF MONTH3 = 'MAR'
THEN MM = 3;
ELSE IF MONTH3 = 'APR'
THEN MM = 4;
ELSE IF MONTH3 = 'MAY'
THEN MM = 5;
ELSE IF MONTH3 = 'JUN'
THEN MM = 6;
ELSE IF MONTH3 = 'JUL'
THEN MM = 7;
ELSE IF MONTH3 = 'AUG'
THEN MM = 8;
ELSE IF MONTH3 = 'SEP'
THEN MM = 9;
ELSE IF MONTH3 = 'OCT'
THEN MM = 10;
ELSE IF MONTH3 = 'NOV'
THEN MM = 11;
ELSE IF MONTH3 = 'DEC'
THEN MM = 12;
ELSE MM = .;

IF DAY>= '1' AND DAY <= '31'
THEN DD = INPUT(DAY,2.);
ELSE DD = .;

IF YEAR>'0'
THEN YY = INPUT(YEAR,2.);
ELSE YY = .;

IF MM <= . AND DD <= . AND YY <= .
THEN BIRTHIDF = MDY(MM,DD,YY);
ELSE BIRTHIDF = .;
FORMAT BIRTHIDF DATE7.;

DROP MONTH3 MM DD YY;
/* DEFINE REFERENCE ID */
IDF_ID = _N_;

/* OUTPUT */
PROC PRINT DATA=OUT.IDFPASS0(OBS=100);
TITLE1 S06B.MTCH.P3.SORC;
TITLE2 CREATE SAS FILE OF IDF MATCHING VARIABLES;
TITLE3 LIST OF FIRST 100 CASES;

PROC CONTENTS NOSOURCE;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part C - Match by MEPS, Name, Birthdate
PROCEDURE: S06C.MTCH.P3.SORC
LANGUAGE: SAS
PURPOSE: PASS 1 - MERGE MRS AND IDF BY MEPS, NAME, BIRTH
INPUT: S06A.MTCH.P3.SAS(R69PASS0) (MRS RECORDS)
       S06B.MTCH.P3.SAS(IDFPASS0) (IDF RECORDS)
OUTPUT: S06C.MTCH.P3.SAS(MTCPASS1) (MATCHES)
         S06C.MTCH.P3.SAS(R69PASS1) (NON-MATCHES)
LOGIC: SORT THE MRS FILE BY THE MATCHING CRITERIA. DEFINE NEW VARIABLES TO HOLD THE MATCHING CRITERIA. LIST MRS RECORDS WITH IDENTICAL MATCHING CRITERIA.
         SORT THE IDF FILE BY THE MATCHING CRITERIA. DEFINE NEW VARIABLES TO HOLD THE MATCHING CRITERIA.
         MERGE MRS AND IDF RECORDS:
         WRITE MATCHES TO A FILE.
         WRITE NON-MATCHES AND THE RESIDUAL RECORDS FROM THE PREVIOUS PERIOD (WHETHER THEY MATCHED HERE OR NOT) TO ANOTHER FILE.
         PRINT MATCHED RECORDS WITH IDENTICAL MATCHING CRITERIA.
PAGE;
PROC SORT DATA=IN1.R69PASS0 OUT=R69;
BY MEPS690 NAME690 BIRTH690;

DATA R69; SET R69; BY MEPS690 NAME690 BIRTH690;
MEPS = MEPS690;
NAME = NAME690;
BIRTH = BIRTH690;
IF FIRST.BIRTH690 \leq 1 OR LAST.BIRTH690 \leq 1 THEN DO;
   FILE PRINT HEADER = H LINESLEFT=LL;
      IF LL<8 THEN PUT _PAGE_;
      PUT _ALL_;
      RETURN;
      H: PUT / @10 'MRS CASES WITH IDENTICAL MATCHING CRITERIA'//;
      RETURN;
   END;

PROC SORT DATA=IN2.IDFPASS0 OUT=IDF;
BY MEPSIDF NAMEIDF BIRTHIDF;

DATA IDF; SET IDF; BY MEPSIDF NAMEIDF BIRTHIDF;
MEPS = MEPSIDF;
NAME = NAMEIDF;
BIRTH = BIRTHIDF;
/* DON'T LIST IDF CASES WITH IDENTICAL CRITERIA. */

DATA OUT.MTCPASS1(DROP = MEPS NAME BIRTH);
   OUT.R69PASS1(DROP = MEPS NAME BIRTH);
MERGE R69(IN=INR69) IDF(IN=INIDF);
BY MEPS NAME BIRTH;

IF INR69 = 1 AND INIDF = 1 THEN OUTPUT OUT.MTCPASS1;
IF (INR69 = 1 AND INIDF = 0) OR WEEK = '4' THEN OUTPUT OUT.R69PASS1;

DATA MTC; SET OUT.MTCPASS1; BY MEPS690 NAME690 BIRTH690;
IF FIRST.BIRTH690 \leq 1 OR LAST.BIRTH690 \leq 1 THEN DO;
   FILE PRINT HEADER = H LINESLEFT=LL;
      IF LL<8 THEN PUT _PAGE_;
      PUT _ALL_;
      RETURN;
      H: PUT / @10 'MATCHED CASES WITH IDENTICAL MATCHING CRITERIA'//;
      RETURN;
   END;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part XI - Explore Matched Records from Step 6C
PROC SORT DATA=IN.MTCPASS1 OUT=PASS1;
BY WEEK MEPS690 NAME690 BIRTH690;

PROC PRINT; BY WEEK; PAGEBY WEEK;
VAR SO_CA AB NA_RG_UA LAST FIRST MIDDLE BIRTH690 BIRTHIDF MEPS690 MEPSIDF TEST690 TESTDATE ADDRESS CITY STATE STATE690 ZIP_C0_UA SEX IDF_ID;
TITLE1 S061.EXPL.P3.SORC;
TITLE2 PASS 1 MATCHES;
TITLE3 MEPS, NAME, BIRTH;

DATA PROBLEM; SET PASS1;
FIRSBLINK = INDEX(NA_RG_UA,' ',);
IF FIRSBLINK <= 6
THEN LAST6 = SUBSTR(NA_RG_UA,1,FIRSBLINK-1);
ELSE LAST6 = SUBSTR(NA_RG_UA,1,6);
IF LAST6 \= SUBSTR(LAST,1,6) |
BIRTH690 \= BIRTHIDF |
MEPS690 \= MEPSIDF;

PROC PRINT; BY WEEK; PAGEBY WEEK;
VAR SO_CA AB NA_RG_UA LAST FIRST MIDDLE BIRTH690 BIRTHIDF MEPS690 MEPSIDF TEST690 TESTDATE ADDRESS CITY STATE STATE690 ZIP_C0_UA SEX IDF_ID;
TITLE4 MATCHES WITH POSSIBLE PROBLEMS;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part D - Match by MEPS, Name
/* PROGRAM: S06D.MTCH.P3.SORC */
/* LANGUAGE: SAS */
/* PURPOSE: PASS 2 - MERGE MRS AND IDF BY MEPS, NAME */
/* */
/* INPUT: S06C.MTCH.P3.SAS(R69PASS1) (NON-MATCHES *) */
/* FROM PASS 1) */
/* S06B.MTCH.P3.SAS(IDFPASS0) (IDF RECORDS) */
/* */
/* OUTPUT: S06D.MTCH.P3.SAS(MTCPASS2) (MATCHES) */
/* S06D.MTCH.P3.SAS(R69PASS2) (NON-MATCHES *) */
/* FROM PASS 1) */
/* */
/* LOGIC: SIMILAR TO S06C.MTCH.P3.SORC */
/* */
/* NON-MATCHES FROM PASS 1 ARE OUTPUT AS */
/* NON-MATCH FILE, REGARDLESS OF MATCHING */
/* OUTCOME IN PASS 2. THIS ENABLES FALSE */
/* POSITIVES TO BE MATCHED IN SUBSEQUENT */
/* PASSES. */

TITLE1 S06D.MTCH.P3.SORC;
TITLE2 MERGE MRS AND IDF BY;
TITLE3 MEPS, NAME;
PROC SORT DATA=IN1.R69PASS1 OUT=R69;
   BY MEPS690 NAME690;

DATA R69; SET R69; BY MEPS690 NAME690;
MEPS = MEPS690;
NAME = NAME690;
IF FIRST.NAME690 ^= 1 OR LAST.NAME690 ^= 1 THEN DO;
   FILE PRINT HEADER = H LINESLEFT=LL;
   IF LL<8 THEN PUT _PAGE_
   PUT ALL /;
   RETURN;
   H: PUT / @10 'MRS CASES WITH IDENTICAL MATCHING CRITERIA' //;
   RETURN;
   END;

PROC SORT DATA=IN2.IDFPASS0 OUT=IDF;
   BY MEPSIDF NAMEIDF;

DATA IDF; SET IDF; BY MEPSIDF NAMEIDF;
MEPS = MEPSIDF;
NAME = NAMEIDF;
/* DON'T LIST IDFS WITH IDENTICAL MATCHING CRITERIA. */

DATA OUT.MTCPASS2 DROP = MEPS NAME;
   OUT.R69PASS2 DROP = MEPS NAME;
MERGE R69(IN=INR69) IDF(IN=INIDF);
   BY MEPS NAME;
IF INR69 = 1 AND INIDF = 1 THEN OUTPUT OUT.MTCPASS2;
IF INR69 = 1 THEN OUTPUT OUT.R69PASS2;

DATA MTC; SET OUT.MTCPASS2; BY MEPS690 NAME690;
IF FIRST.NAME690 ^= 1 OR LAST.NAME690 ^= 1 THEN DO;
   FILE PRINT HEADER = H LINESLEFT=LL;
   IF LL<8 THEN PUT _PAGE_
   PUT ALL /;
   RETURN;
   H: PUT / @10 'MATCHED CASES WITH IDENTICAL MATCHING CRITERIA' //;
   RETURN;
   END;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part X2 - Explore Matched Records from Step 6D
//S06DEXPL EXEC SAS
//IN DD DSN=G.G1157.AB230.S06D.MTCH.P3.SAS,DISP=SHR
//SYSIN DD *

 PROC SORT DATA=IN.MTCPASS2 OUT=PASS2;
   BY WEEK MEPS690 NAME690 BIRTH690;
 PROC PRINT; BY WEEK; PAGEBY WEEK;
 VAR SO_CA AB NA RG UA LAST FIRST MIDDLE BIRTH690 BIRTHIDF
   MEPS690 MEPSIDF TEST690 TESTDATE ADDRESS CITY STATE
   STATE690 ZP_CO_UA SEX IDF_ID;
 TITLE1 S062.EXPL.P3.SORC;
 TITLE2 PASS 2 MATCHES;
 TITLE3 MEPS, NAME;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part E - Match by MEPS, Birthdate
TITLE1 S06E.MTCH.P3.SORC;
TITLE2 MERGE MRS AND IDF BY;
TITLE3 MEPS, BIRTH;
PAGE;
PROC SORT DATA=IN1.R69PASS2 OUT=R69;
    BY MEPS690 BIRTH690;
DATA R69; SET R69; BY MEPS690 BIRTH690;
    MEPS = MEPS690;
    BIRTH = BIRTH690;
    IF FIRST.BIRTH690 <= 1 OR LAST.BIRTH690 <= 1
    THEN DO;
        FILE PRINT HEADER = H LINESLEFT=LL;
        IF LI<8 THEN PUT _PAGE_
            H: PUT / @10 'MRS CASES WITH IDENTICAL MATCHING CRITERIA';;
    END;
PROC SORT DATA=IN2.IDFPASSO OUT=IDF;
    BY MEPSIDF BIRTHIDF;
DATA IDF; SET IDF; BY MEPSIDF BIRTHIDF;
    MEPS = MEPSIDF;
    BIRTH = BIRTHIDF;
    /* DONT LIST IDF CASES WITH IDENTICAL CRITERIA */
DATA OUT.MTCPASS3(DROP = MEPS BIRTH)
    OUT.R69PASS3(DROP = MEPS BIRTH);
MERGE R69(IN=INR69) IDF(IN=INIDF);
    BY MEPS BIRTH;
    IF INR69 = 1 AND INIDF = 1
    THEN OUTPUT OUT.MTCPASS3;
    IF INR69 = 1
    THEN OUTPUT OUT.R69PASS3;
DATA MTC; SET OUT.MTCPASS3; BY MEPS690 BIRTH690;
    IF FIRST.BIRTH690 <= 1 OR LAST.BIRTH690 <= 1
    THEN DO;
        FILE PRINT HEADER = H LINESLEFT=LL;
        IF LI<8 THEN PUT _PAGE_
            H: PUT / @10 'MATCHED CASES WITH IDENTICAL MATCHING CRITERIA';;
    END;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part X3 - Explore Matched Records from Step 6E
PROC SORT DATA=IN.MTCPASS3 OUT=PASS3;
   BY WEEK MEPS690 BIRTH690 NAME690;

PROC PRINT; BY WEEK; PAGE BY WEEK;
VAR SO CA AB NA RG UA LAST FIRST MIDDLE BIRTH690 BIRTHIDF
   MEPS690 MEPSIDF TEST690 TESTDATE ADDRESS CITY STATE
   STATE690 2P CO UA SEX IDF_ID;
TITLE1 S063.EXPL.P3.SORC;
TITLE2 PASS 3 MATCHES;
TITLE3 MEPS, BIRTH;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part F - Match by Name, Birthday
/\S06FMTCH EXEC SAS
/\IN1 DD DSN=G.G1157.AB230.S06E.MTCH.P3.SAS,DISP=SHR
/\IN2 DD DSN=G.G1157.AB230.S06B.MTCH.P3.SAS,DISP=SHR
/\OUT DD DSN=G.G1157.AB230.S06F.MTCH.P3.SAS,DISP=(NEW,CATLG),
/\ UNIT=USER,VOL=SER=TEMP11,
/\ SPACE=(TRK,(50,50),RLSE)
/\SYSIN DD *
/\**********************************************************************************/
/\* PROGRAM: S06F.MTCH.P3.SORC *
/\* LANGUAGE: SAS *
/\* PURPOSE: PASS 4 - MERGE MRS AND IDF BY NAME, BIRTH *
/\* *
/\* *
/\* INPUT: S06E.MTCH.P3.SAS(R69PASS3) (NON-MATCHES *) *
/\* FROM PASS 1) *
/\* S06B.MTCH.P3.SAS(IDFPASS0) (IDF RECORDS) *
/\* *
/\* OUTPUT: S06F.MTCH.P3.SAS(MTCPASS4) (MATCHES) *
/\* S06F.MTCH.P3.SAS(R69PASS4) (NON-MATCHES *) *
/\* FROM PASS 1) *
/\* *
/\* LOGIC: SIMILAR TO S06D.MTCH.P3.SORC *
/\**********************************************************************************/

TITLE1 S06F.MTCH.P3.SORC;
TITLE2 MERGE MRS AND IDF BY;
TITLE3 NAME, BIRTH;
PAGE;
PROC SORT DATA=IN1.R69PASS3 OUT=R69;
BY NAME690 BIRTH690;
DATA R69; SET R69; BY NAME690 BIRTH690;
NAME = NAME690;
BIRTH = BIRTH690;
IF FIRST.BIRTH690 <= 1 OR LAST.BIRTH690 <= 1 THEN DO;
   FILE PRINT HEADER = H LINESLEFT=LL;
   IF LL<8 THEN PUT _PAGE_;
   PUT _ALL_;
   RETURN;
   H: PUT / @10 'MRS CASES WITH IDENTICAL MATCHING CRITERIA'//;
   RETURN;
END;
PROC SORT DATA=IN2.IDFPASSO OUT=IDF;
BY NAMEIDF BIRTHIDF;
DATA IDF; SET IDF; BY NAMEIDF BIRTHIDF;
NAME = NAMEIDF;
BIRTH = BIRTHIDF;
/* DONT LIST IDF CASES WITH IDENTICAL CRITERIA */
DATA OUT.MTCPASS4(DROP = NAME BIRTH) OUT.R69PASS4(DROP = NAME BIRTH);
MERGE R69(IN=INR69) IDF(IN=INIDF);
BY NAME BIRTH;
IF INR69 = 1 AND INIDF = 1 THEN OUTPUT OUT.MTCPASS4;
IF INR69 = 1 THEN OUTPUT OUT.R69PASS4;
DATA MTC; SET OUT.MTCPASS4; BY NAME690 BIRTH690;
IF FIRST.BIRTH690 <= 1 OR LAST.BIRTH690 <= 1 THEN DO;
   FILE PRINT HEADER = H LINESLEFT=LL;
   IF LL<8 THEN PUT _PAGE_;
   PUT _ALL_;
   RETURN;
   H: PUT / @10 'MATCHED CASES WITH IDENTICAL MATCHING CRITERIA'//;
   RETURN;
END;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part X4 - Explore Matched Records from Step 6F
//S06FEXPL EXEC SAS
//IN  DD DSN=G.G1157.AB230.S06F.MTCH.P3.SAS,DISP=SHR
//SYSIN DD *

/*****************************/
/*
*/
/* PROGRAM: S064.EXPL.P3.SORC */
/* LANGUAGE: SAS */
/* PURPOSE: LIST MRS AND IDF RECORDS THAT */
/* MATCHED ON */
/* PASS 4 - NAME, BIRTH */
/* */
/* INPUT: S06F.MTCH.P3.SAS(MTCPASS4) (MATCHES */
/* FROM PASS 4) */
/* OUTPUT: LIST */
/* */
/* LOGIC: SIMILAR TO S062.EXPL.P3.SORC */
/*****************************/

PROC SORT DATA=IN.MTCPASS4 OUT=PASS4;
   BY WEEK NAME690 BIRTH690 MEPS690;

PROC PRINT; BY WEEK; PAGE BY WEEK;
VAR SO_CA AB NA RG UA LAST FIRST MIDDLE BIRTH690 BIRTHIDF
   MEPS690 MEPSIDF TEST690 TESTDATE ADDRESS CITY STATE
   STATE690 2P CO UA SEX IDF_ID;
TITLE1 S064.EXPL.P3.SORC;
TITLE2 PASS 4 MATCHES;
TITLE3 NAME, BIRTH;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part H - Match by Birthday, First 2 Letters of Last Name [1]

[1] This part of Step 6 is called "H" because an intermediate step ("G" - match on name) was used in earlier periods and skipped after it proved to be unproductive.
/* S06HMTCHEXEC SAS */
/* IN1 DD DSN=G.GI1157.AB230.S06F.MTCH.P3.SAS,DISP=SHR */
/* IN2 DD DSN=G.GI1157.AB230.S06B.MTCH.P3.SAS,DISP=SHR */
/* OUT DD DSN=G.GI1157.AB230.S06H.MTCH.P3.SAS,DISP=(NEW,CATLG), */
/* UNIT=USER, VOL=SER=TEMP11, */
/* SPACE=(TRK,(50,50),RLSE) */
/* SYSIN DD */

/*****************************/
/*
/* PROGRAM: S06H.MTCH.P3.SORC */
/* LANGUAGE: SAS */
/* PURPOSE: PASS 6 - MERGE MRS AND IDF BY */
/* BIRTH, 2 LETTERS OF NAME */
/* */
/* INPUT: S06F.MTCH.P3.SAS(R69PASS4) (NON-MATCHES */
/* FROM PASS 1) */
/* S06B.MTCH.P3.SAS(IDFPASS0) (IDF RECORDS) */
/* */
/* OUTPUT: S06H.MTCH.P3.SAS(MTCPASS6) (MATCHES) */
/* S06H.MTCH.P3.SAS(R69PASS6) (NON-MATCHES */
/* FROM PASS 1) */
/* */
/* LOGIC: SIMILAR TO S06D.MTCH.P3.SORC */
/*****************************/

TITLE1 S06H.MTCH.P3.SORC;
TITLE2 MERGE MRS AND IDF BY:
TITLE3 BIRTH, 2 LETTERS OF NAME;
PAGE;
PROC SORT DATA=IN1.R69PASS4 OUT=R69;
BY BIRTH690 NAME690;

DATA R69; SET R69;
NAME2 = SUBSTR(NAME690,1,2);
BIRTH = BIRTH690;

DATA R69; SET R69; BY BIRTH NAME2;
IF FIRST.NAME2 <= 1 OR LAST.NAME2 <= 1
THEN DO;
    FILE PRINT HEADER = H LINESLEFT=LL;
    IF LL<8 THEN PUT _PAGE_;
    PUT ALL /;
    RETURN;
    H: PUT / @10 'MRS CASES WITH IDENTICAL MATCHING CRITERIA' //;
    RETURN;
END;

PROC SORT DATA=IN2.IDFPASS0 OUT=IDF;
BY BIRTHIDF NAMEIDF;

DATA IDF; SET IDF;
NAME2 = SUBSTR(NAMEIDF,1,2);
BIRTH = BIRTHIDF;
/* DON'T LIST IDF CASES WITH IDENTICAL CRITERIA. */

DATA OUT.MTCPASS6(DROP = NAME2 BIRTH)
    OUT.R69PASS6(DROP = NAME2 BIRTH);
MERGE R69(IN=INR69) IDF(IN=INIDF);
BY BIRTH NAME2;

IF INR69 = 1 AND INIDF = 1
THEN OUTPUT OUT.MTCPASS6;
IF INR69 = 1
THEN OUTPUT OUT.R69PASS6;

DATA MTC; SET OUT.MTCPASS6; BY BIRTH690 NAME690;
IF FIRST.NAME690 <= 1 OR LAST.NAME690 <= 1
THEN DO;
    FILE PRINT HEADER = H LINESLEFT=LL;
    IF LL<8 THEN PUT _PAGE_;
    PUT ALL /;
    RETURN;
    H: PUT / @10 'MATCHED CASES WITH IDENTICAL MATCHING CRITERIA' //;
    RETURN;
END;
STEP 6 - MATCH SCREENED MRS RECORDS TO IDF RECORDS

Part X6 - Explore Matched Records from Step 6H
PROC SORT DATA=IN.MTCPASS6 OUT=PASS6;
   BY WEEK BIRTH690 NAME690 MEPS690;

PROC PRINT; BY WEEK; PAGEBY WEEK;
VAR SO_CA AB NA RG UA LAST FIRST MIDDLE BIRTH690 BIRTHIDF
   MEPS690 MEPSIDF TEST690 TESTDATE ADDRESS CITY STATE
   STATE690 ZIP CO UA SEX IDF_ID;
TITLE1 S066.EXPL.P3.SORC;
TITLE2 PASS 6 MATCHES;
TITLE3 BIRTH, 2 LETTERS OF NAME;
CREATE A FILE OF SAMPLE MEMBERS (STEP 7)

This subsection presents the programs used to create a file of survey sample members from the matched MRS-IDF records. The process is summarized in Fig. 6.

Fig. 6—Create a file of sample members (Step 7)
STEP 7 - CREATE A FILE OF SAMPLE MEMBERS

Part A - Create and Explore SAS File of Matched Cases
//S07AWRIT EXEC SAS
//IN1 DD DSN=G.G1157.AB230.S06C.MTCH.P3.SAS,DISP=SHR
//IN2 DD DSN=G.G1157.AB230.S06D.MTCH.P3.SAS,DISP=SHR
//IN3 DD DSN=G.G1157.AB230.S06E.MTCH.P3.SAS,DISP=SHR
//IN4 DD DSN=G.G1157.AB230.S06F.MTCH.P3.SAS,DISP=SHR
//IN6 DD DSN=G.G1157.AB230.S07A.WRIT.P3.SAS,DISP=(NEW,CATLG),
//       UNIT=USER,Vol=SER=USER50,
//       SPACE=(TRK,(30,30),RLSE)
//SYSIN DD *

/*******************************************************************************
/ /*
/ /* PROGRAM: S07A.WRIT.P3.SORC
/ /* LANGUAGE: SAS
/ /* PURPOSE: CREATE AND EXPLORE DATA FOR SURVEY CONTRACTOR
/ /*
/ /* INPUT: S06x.MTCH.P3.SAS(MTCPASSy) (FILES OF MATCHES)
/ /*
/ /* OUTPUT: S07A.WRIT.P3.SAS(AMRIGON) (SAS FILE OF RECORDS FOR SURVEY CONTRACTOR)
/ /*
/ /* LOGIC: FOR EACH OF THE MATCH FILES,
/ /* CREATE A SAS FILE OF VALID RECORDS AND DEFINE AN INDICATOR FLAG.
/ /* CONCATENATE THE FILES AND DEFINE NEW VARIABLES FOR USE BY SURVEY CONTRACTOR.
/ /* EXPLORE.
/*******************************************************************************

NOTE: Cases not matched (i.e., cases not on the output file who were sample candidates from this period's MRS file) should be identified later and included again as MRS candidates for the next sampling period.
PAGE;
DATA PASS1; SET IN1.MTCPASS1;
IF IDF_ID =

    /* AFTBREWING THE RESULTS OF STEP 6 BY HAND, */
    /* DELETE DUPLICATE MATCHES */
THEN DELETE;
PASS = 1;

PAGE;
DATA PASS2; SET IN2.MTCPASS2;
IF IDF_ID =

    /* AFTBREWING THE RESULTS OF STEP 6 BY HAND, */
    /* DELETE DUPLICATE MATCHES */
THEN DELETE;
PASS = 2;

PAGE;
DATA PASS3; SET IN3.MTCPASS3;
IF IDF_ID =

    /* AFTBREWING THE RESULTS OF STEP 6 BY HAND, */
    /* KEEP ONLY UNIQUE MATCHES */
; 
PASS = 3;

PAGE;
DATA PASS4; SET IN4.MTCPASS4;
IF IDF_ID =

    /* AFTBREWING THE RESULTS OF STEP 6 BY HAND, */
    /* KEEP ONLY UNIQUE MATCHES */
; 
PASS = 4;

PAGE;
DATA PASS6; SET IN6.MTCPASS6;
IF IDF_ID =

    /* AFTBREWING THE RESULTS OF STEP 6 BY HAND, */
    /* KEEP ONLY UNIQUE MATCHES */
; 
PASS = 6;
PAGE;
DATA OUT.AMRIGON; SET PASS1 PASS2 PASS3 PASS4 PASS6;

/* DERIVE VARIABLES FOR THE RAW FILE */

/* BIRTH DATE */
OUTMOUTH = LEFT(PUT(BIRTH690,WORDDATE9.));
OUTDAY = PUT(BIRTH690,DDMMYY2.);
OUTYEAR = PUT(BIRTH690,YYMDD2.);

/* SERVICE */
IF SR_VC_TR = 'DAR' THEN OUTSERV = '1';
IF SR_VC_TR = 'DNR' THEN OUTSERV = '2';
IF SR_VC_TR = 'DFR' THEN OUTSERV = '3';
IF SR_VC_TR = 'DMR' THEN OUTSERV = '4';

/* DATE ENLIST/ACTIVE */
IF RE_ID_UA = '2' | RE_ID_UA = '4'
THEN OUTDATE = DA_FA_UA;
ELSE IF RE_ID_UA = '3'
THEN OUTDATE = DA_FA_UY;
ELSE OUTDATE = ' 

/* BASE SHIPPED TO */
IF RE_ID_UA = '3' THEN OUTBASE = TR_TC_UA;
ELSE OUTBASE = ' 

/* QUALITY-BONUS CELL */
IF CELL = 'HA'
THEN OUTCELL = '1';
ELSE IF CELL = 'HB'
THEN OUTCELL = '2';
ELSE IF CELL = 'HC'
THEN OUTCELL = '3';
ELSE IF CELL = 'LA'
THEN OUTCELL = '4';
ELSE IF CELL = 'LB'
THEN OUTCELL = '5';
ELSE IF CELL = 'LC'
THEN OUTCELL = '6';

/* CHECK FOR NO PHONE */
IF SUBSTR(H_PHONE,4,1) = '' & SUBSTR(O_PHONE,4,1) = ''
THEN PHONE = 'NO PHONE';
ELSE PHONE = 'YES PHONE';
PAGE;
PROC PRINT;
VAR PASS SO_CA_AB IDF_ID WEEK LAST FIRST MIDDLE NA_RG_UA
H_PHONE O_PHONE SEX DA_FA_UB MEPS690;
TITLE1 S07A.WRIT.P3.SORC;
TITLE2 CREATE AND EXPLORE AMRIGON DATA;

PROC FREQ; TABLES SO_CA_AB NA_RG_UA OUTFOR PERSON OUTDATE OUTBASE
CELL*OUTCELL
SR_VC_TR*OUTSERV SE_XA_AA*SEX
(OUTDATE OUTBASE)*RE_ID_UA
PM_SV_AA NN_CD_UA PASS
/NOROW NOCOL NOPERCENT;

PROC CONTENTS NOSOURCE;
STEP 7 - CREATE A FILE OF SAMPLE MEMBERS

Part B - Write Modified SAS and Raw Output Files
//S07BWRIT EXEC SAS
//IN  DD DSN=G.G1157.AB230.S07A.WRIT.P3.SAS,DISP=SHR
//OUT1 DD DSN=G.G1157.AB230.S07B.WRIT.P3.SAS,DISP=(NEW,CATLG),
//     UNIT=USER,Vol=SER=USER50,
//     SPACE=(TRK,(20,20),RLSE)
//OUT2 DD DSN=G.G1157.AB230.S07B.WRIT.P3.DATA,DISP=(NEW,CATLG),
//     DCB=(RECFM=FB,LRECL=152,BLKSIZE=1520),
//     UNIT=USER,Vol=SER=USER50,
//     SPACE=(TRK,(20,20),RLSE)
//SYSSIN DD *

/* ****************************************/
/* /
/* PROGRAM:  S07B.WRIT.P3.SORC
/* LANGUAGE:  SAS
/* PURPOSE:   WRITE RAW DATA FILE FOR SURVEY
/* CONTRACTOR
/* INPUT:     S07A.WRIT.P3.SAS(AMRIGON) (SAS FILE FOR *
/*          SURVEY
/*          CONTRACTOR)
/* OUTPUT:    S07B.WRIT.P3.SAS (FINAL) (MODIFIED SAS *
/*          FILE) *
/*          S07B.WRIT.P3.DATA (CORRESPONDING *
/*          RAW FILE)
/* LOGIC:     DELETE RECORDS WITHOUT PHONE NUMBERS OR *
/*            WITH DATA INDICATING THE RESPONDENT IS *
/*            FEMALE.
/* ASSIGN A UNIQUE ID NUMBER TO EACH *
/* RECORD.
/* WRITE A SAS FILE FOR RAND USE.
/* WRITE A CORRESPONDING RAW FILE TO SEND *
/* TO SURVEY CONTRACTOR.
/* EXPLORE.
/* *****************************************/
PAGE;

DATA AMRIGON; SET IN.AMRIGON;

IF PHONE = 'NO PHONE' |
   IDF_ID =.... /* DELETE NO PHONES AND FEMALES */
   /* (FEMALE BY SEX ON IDF AND NAME ON */
   /* IDF OR 690 */
THEN DELETE;

PAGE;

DATA OUT1.FINAL; SET AMRIGON;

/* ASSIGN RAND ID (A UNIQUE ID NUMBER) CONTINUING FROM */
/* LAST WEEK’S SAMPLE */
RETAIN RAND_ID 5127;
RAND_ID + 1;

FILE OUT2;
PUT RAND_ID Z4.
   OUTMONTH $CHAR9. OUTDAY $CHAR2. OUTYEAR $CHAR2.
   MEPS690 $CHAR2. ' ' TEST690 $CHAR3. WEEK $CHAR1.
   OUTCELL $CHAR1. OUTSERV $CHAR1. RE_ID_UA $CHAR1.
   OUTDATE $CHAR8. OUTBASE $CHAR6. ' ';

PROC FREQ; TABLES WEEK;
TITLE1 S07B.WRIT.P3.SORC;
TITLE2 DERIVED VARIABLES AND RAND_ID FOR AMRIGON;
PROC CONTENTS NOSOURCE;
STEP 7 - CREATE A FILE OF SAMPLE MEMBERS

Part X1 - Explore Output from Step 7B
PROC PRINT DATA=IN1.FINAL(OBS=50);
TITLE1 S071.EXPL.P3.SORC;
TITLE2 PRINT MATCHED AND SCREENED CASES;
TITLE3 FIRST 50 CASES;

PROC PRINT DATA=IN1.FINAL(FIRSTOBS=2450);
TITLE3 LIST STARTING AT OBSERVATION 2450;

PROC FREQ DATA=IN1.FINAL; TABLES WEEK SEX PHONE;
TITLE2 SELECTED FREQUENCIES;
STEP 7 - CREATE A FILE OF SAMPLE MEMBERS

Part X2 - Read Raw Data File and List
/*PROGRAM: S072.EXPL.P3.SORC*/
/*LANGUAGE: SAS*/
/*PURPOSE: READ RAW DATA FILE AND LIST*/
/**/
/*INPUT: S07B.WRIT.P3.DATA*/
/**/
/*OUTPUT: LISTS*/
/**/
/*LOGIC: READ THE RAW VERSION OF THE MODIFIED SURVEY CONTRACTOR FILE.*/
/**/
/*PRINT SELECTED RECORDS.*/
/**/
/*PRINT PRIORITY RECORDS.*/
/**/
/*EXPLORE.*/

PAGE;

DATA VERIFY; INFILE IN1;

INPUT
  RAND_ID 4.
  OUTPUT $CHAR9. OUTDAY $CHAR2. OUTYEAR $CHAR2.
  MEPS690 $CHAR2. +1 TEST690 $CHAR3. WEEK $CHAR1.
  OUTCELL $CHAR1. OUTSERV $CHAR1. RE_ID_UA $CHAR1.
  OUTDATE $CHAR8. OUTBASE $CHAR6. +5;

LIST;

PROC PRINT DATA=VERIFY(OBS=25);
TITLE1 FIRST 25 CASES;

PROC PRINT DATA=VERIFY(FIRSTOBS=2423);
TITLE1 LAST 25 CASES;

DATA SHIP; SET VERIFY; IF RE_ID_UA > '1';
PROC SORT; BY OUTDATE;
PROC PRINT; VAR RAND_ID LAST FIRST MIDDLE OUTDATE;
TITLE1 PRIORITY LIST;
PROC FREQ DATA=VERIFY; TABLES WEEK;
DATA MORE; SET VERIFY;

/* CHECK FOR NO PHONE */
IF SUBSTR(H_PHONE,4,1) = '' & SUBSTR(O_PHONE,4,1) = ''
THEN PHONE = 'NO PHONE';
ELSE PHONE = 'YES PHONE';

PROC FREQ; TABLES PHONE NEPS690 TEST690 WEEK OUTCELL OUTSERV
(outdate outbase) * RE_ID_UA;
TITLE1 ADDITIONAL CHECKS;
STEP 7 - CREATE A FILE OF SAMPLE MEMBERS

Part X3 - Verify Matched Cases Against MRS File
//S073EXPL EXEC SAS
//IN1 DD DSN=G.G1157.AB230.S07B.WRIT.P3.SAS,DISP=SHR
//IN2 DD DSN=G.G1157.AB230.S07B.WRIT.P3.DATA,DISP=SHR
//IN3 DD DSN=G.G1157.AB230.REC690.P3,DISP=SHR
//SYSIN DD *

/*
*/
/* PROGRAM:   S073.EXPL.P3.SORC    */
/* LANGUAGE:  SAS            */
/* PURPOSE:   VERIFY MATCHED CASES AGAINST REC690.P3 */
/* INPUT:     S07B.WRIT.P3.SAS(FINAL) (MODIFIED SURVEY) */
/*            CONTRACTOR SAS FILE ) */
/*            S07B.WRIT.P3.DATA (CORRESPONDING RAW DATA) */
/*            REC690.P3 (THIS PERIOD'S ORIGINAL MRS DATA) */
/* OUTPUT:    LIST */
/* LOGIC:     EXTRACT RAND ID AND SSN FROM THE SURVEY CONTRACTOR SAS FILE. */
/*            READ THE SURVEY CONTRACTOR RAW FILE AND SORT BY SSN. */
/*            MERGE THESE FILES BY SSN. */
/*            READ THE ORIGINAL MRS FILE AND DEFINE NEW VARIABLES. */
/*            MERGE THE SURVEY CONTRACTOR AND MRS FILES BY SSN. */
/*            EXTRACT AND EXPLORE POSSIBLE MISMATCHED RECORDS. */
*******************************************************************************/

/* THIS PROGRAM IS USED TO VERIFY THAT DURING THE MATCHING PROCESS, THE DATA FROM ONE RECORD HAS NOT BEEN CONFUSED WITH ANOTHER */
PAGE;

/* STEP 1 */
/* EXTRACT A RAND_ID - SO_CA_AB CROSSWALK */
DATA ID_SO; SET IN1.FINAL(KEEP = RAND_ID SO_CA_AB);

/* STEP 2 */
/* READ THE RAW AMRIGON DATA, ADD AND SORT BY SO_CA_AB */
DATA SAMPLE; INFILE IN2;

INPUT
   RAND_ID  4.
   OUTMONTH $CHAR9. OUTDAY $CHAR2. OUTYEAR $CHAR2.
   MEPS690 $CHAR2. +1 TEST690 $CHAR3. WEEK $CHAR1.
   OUTCELL $CHAR1. OUTSERV $CHAR1. REIDUASA $CHAR1.
   OUTDATE $CHAR8. OUTBASE $CHAR6. 5;

DATA SAMP_ID; MERGE ID_SO SAMPLE(IN=IN1);
BY RAND_ID;

IF IN1 = 1;

PROC SORT; BY SO_CA_AB;
DATA P3_690; INFILE IN3;

INPUT @001 SO_CA_AB $CHAR9.
@021 NA_RG_UA $CHAR27.
@048 DA_FA_UC $CHAR8.
@056 PM_SV_AA $CHAR2.
@058 ST_CO_UA $CHAR5.
@063 ZP_CO_UA $CHAR5.
@070 SE_XA_AA $CHAR1.
@086 DA_FA UB $CHAR8.
@106 RE_ID_UA $CHAR1.
@120 PE_CD_UA $CHAR2.
@186 DA_FA UX $CHAR8.
@194 DA_FA_UY $CHAR8.
@233 TM_EN_UA $CHAR1.
@256 TR_TC_UA $CHAR6.
@505 DA_FA_UJ $CHAR8.;

/*/ EXTRACT FIRST AND LAST NAME DATA */
LENGTH LAST690 $ 14
FIRST690 $ 9;

IF NA_RG_UA ^= ' ' THEN DO;
    FIRSBLNK = INDEX(NA_RG_UA, ' '); 
    LAST690 = SUBSTR(NA_RG_UA, 1, FIRSBLNK-1); 
    FIRST690 = SUBSTR(NA_RG_UA, FIRSBLNK+1);
END;
ELSE DO;
    FIRSBLNK = ;
    LAST690 = '.';
    FIRST690 = ' ';
END;

/*/ DETERMINE 690 OUTDATE */
IF RE_ID_UA = '2' | RE_ID_UA = '4' THEN OUT690 = DA_FA_UX;
ELSE IF RE_ID_UA = '3' THEN OUT690 = DA_FA_UY;
ELSE OUT690 = ' '; 

PROC SORT; BY SO_CA_AB;
PAGE;

/ * MERGE AND COMPARE  
DATA COMPARE; MERGE SAMP_ID(IN=IN1) P3_690;
BY SO_CA_AB;

IF IN1=1;

DATA ERRORS; SET COMPARE;
IF ( SUBSTR(LAST,1,4) ^= SUBSTR(LAST690,1,4) ) |
( SUBSTR(FIRST,1,1) ^= SUBSTR(FIRST690,1,1) ) |
( REIDUASA ^= RE_ID_UA ) |
( OUTDATE ^= OUT690 );

PROC PRINT;
TITLE1 S073.EXPL.P3.SORC;
TITLE2 POSSIBLE MISMATCHED CASES;
UPDATE ACTIVE DUTY DATE AND BASIC TRAINING INFORMATION (STEP 8)

This subsection presents the programs used to provide/update enlistment information for the survey sample members. This information was used to prioritize interviews and schedule survey administrations for sample members at basic training bases. Figure 7 summarizes the updating process.

Fig. 7—Update survey contractor data (Step 8)
STEP 8 - UPDATE ACTIVE DUTY DATE AND BASIC TRAINING INFORMATION

Part A - Create SAS File of Shipped Cases that Appear on a Subsequent MRS File
//S08AUPDT EXEC SAS
//IN1 DD DSN=G.G1157.AB230.REC690.P4,DISP=SHR
//IN2 DD DSN=G.G1157.AB230.S07B.WRIT.P3.SAS,DISP=SHR
//OUT DD DSN=G.G1157.AB230.S08A.UPDT.P3.SAS,DISP=(NEW,CATLG),
// UNIT=USER, VOL=SER=USER31,
// SPACE=(TRK,(25,25),RLSE)
//SYSIN DD *

*****************************************************************************
/**
** PROGRAM: S08A.UPDT.P3.SORC
** LANGUAGE: SAS
** PURPOSE: CREATE SAS FILE OF CASES SHIPPED TO AMRIGON THAT APPEAR ON SUBSEQUENT MRS FILES
** INPUT: REC690.P4 (MRS DATA FROM PERIOD 4)
** S078.WRIT.P3.SAS(FINAL) (SURVEY CONTRACTOR FILE)
** OUTPUT: S08A.UPDT.P3.SAS(UPDATE) (UPDATE FILE)
** LOGIC: READ SELECTED VARIABLES FROM THE SUBSEQUENT MRS FILE, SORT BY SSN.
** SORT THE SURVEY CONTRACTOR FILE BY SSN.
** MERGE THE TWO FILES AND WRITE A FILE OF MATCHES.
** EXPLORE.
*****************************************************************************

NOTE: A modified version of this program was used to update information for cases chosen in Periods 1 and 2. Another modification was used to update information for cases chosen in Period 3 using MRS records from later periods.
PAGE;
DATA R690_4;
INFILE IN1;

INPUT @001 SO_CA_AB $CHAR9.
     @021 UP_RG_UA $CHAR27.
     @048 UP_FA_UC $CHAR8.
     @106 UP_ID_UA $CHAR1.
     @186 UP_FA_UX $CHAR8.
     @194 UP_FA_UY $CHAR8.
     @256 UP_TC_UA $CHAR6.
     @505 UP_FA_UJ $CHAR8.;

LABEL SO_CA_AB = SOCIAL SECURITY NUMBER
     UP_RG_UA = UPDATE NAME
     UP_FA_UC = UPDATE DATE OF ACTION
     UP_ID_UA = UPDATE RECORD TYPE
     UP_FA_UX = UPDATE DATE OF ENLISTMENT
     UP_FA_UY = UPDATE ACTIVE DUTY SERVICE DATE
     UP_TC_UA = UPDATE TRANSER TO CODE
     UP_FA_UJ = UPDATE PROJECTED ACTIVE DUTY DATE;

PROC SORT; BY SO_CA_AB;

PROC SORT DATA=IN2.FINAL(KEEP=SO_CA_AB RAND_ID) OUT=FINAL;
BY SO_CA_AB;

DATA OUT.UPDATE; MERGE R690_4(IN=IN1)
     FINAL(IN=IN2);
     BY SO_CA_AB;
IF IN1 = 1 AND IN2 = 1;

PROC PRINT;
TITLE1 S08A.UPDT.P3.SORC;
TITLE2 CASES SHIPPED TO AMRIGON THAT APPEAR ON REC690.P4;

PROC CONTENTS NOSOURCE;
STEP 8 - UPDATE ACTIVE DUTY DATE AND BASIC TRAINING INFORMATION

Part B - Write SAS and Raw Files of Update Information
//S08BUPDT EXEC SAS
//IN1 DD DSN=G.G1157.AB230.S07B.WRIT.P3.SAS,DISP=SHR
//IN2 DD DSN=G.G1157.AB230.S08A.UPDT.P3.SAS,DISP=SHR
//OUT1 DD DSN=G.G1157.AB230.S08B.UPDT.P3.SAS,DISP=(NEW,CATLG),
//       UNIT=USER,VOL=SER=USER31,
//       SPACE=(TRK,(20,20),RLSE)
//OUT2 DD DSN=G.G1157.AB230.S08B.UPDT.P3.DATA,DISP=(NEW,CATLG),
//       DCB=(RECFM=FB,LRECL=152,BLKSIZ=1520),
//       UNIT=USER,VOL=SER=USER31,
//       SPACE=(TRK,(20,20),RLSE)
//SYSIN DD *

*******************************************************************************/
/*
/* PROGRAM:        S08B.UPDT.P3.SORC
/* LANGUAGE:       SAS
/* PURPOSE:        WRITE RAW DATA AND SAS FILE FOR AMRIGON UPDATED CASES
/* INPUT:          S07B.WRIT.P3.SAS(FINAL) (SURVEY CONTRACTOR FILE)
/*                 S08A.UPDT.P3.SAS(UPDATE) (UPDATE FILE)
/* OUTPUT:         S08B.UPDT.P3.SAS(UPDATE) (MODIFIED SAS UPDATE FILE)
/*                 S08B.UPDT.P3.DATA (CORRESPONDING RAW FILE)
/* LOGIC:          SORT THE SURVEY CONTRACTOR FILE BY SSN.
/*                 SORT SELECTED VARIABLES OF THE UPDATE FILE BY SSN.
/*                 MERGE THE TWO FILES KEEPING ONLY THOSE RECORDS WITH CHANGES IN SELECTED VARIABLES.
/*                 DEFINE AN INDICATOR VARIABLE.
/*                 WRITE A RAND ID.
/*                 WRITE A SAS FILE.
/*                 WRITE A CORRESPONDING RAW FILE.
*******************************************************************************
PAGE;

PROC SORT DATA=IN1.FINAL
   OUT=ORIGINAL;
   BY SO_CA_AB;

PROC SORT DATA=IN2.UPDATE(KEEP = SO_CA_AB
   UP_ID_UA UP_FA_UX UP_FA_UY
   UP_TC_UA)
   OUT=UPDATE;
   BY SO_CA_AB;

DATA NEWRAW; MERGE ORIGINAL(IN=IN1) UPDATE(IN=IN2);
   BY SO_CA_AB;
   IF IN2 = 1 &
   (UP_FA_UX <= DA_FA_UX | UP_FA_UY <= DA_FA_UY | UP_TC_UA <= TR_TC_UA);

   /* UPDATE DATE ENLIST/ACTIVE */
   IF UP_ID_UA = '2' | UP_ID_UA = '4'
      THEN OUTDATE = UP_FA_UX;
   ELSE IF UP_ID_UA = '3'
      THEN OUTDATE = UP_FA_UY;
   ELSE OUTDATE = 'a';

   /* UPDATE BASE SHIPPED TO */
   IF UP_ID_UA = '3'
      THEN OUTBASE = UP_TC_UA;
   ELSE OUTBASE = 'p';

   /* UPDATE INDICATOR */
   UPDATE = '04';

   /* INDICATOR FOR USE BY SURVEY CONTRACTOR */
   NOINTER = '';
PAGE;

PROC SORT OUT=OUT1.UPDATE; BY RAND_ID;
PROC CONTENTS NOSOURCE;
TITLE1 S08B.UPDT.P3.SORC;
TITLE2 UPDATED SHIP/ENLIST DATE OR BASE;

PAGE;

DATA NEWRAW; SET OUT1.UPDATE;

/* WRITE UP_ID_UA INSTEAD OF RE_ID_UA */
FILE OUT2;
PUT
   RAND_ID Z4.
   OUTMONTH $CHAR9. OUTDAY $CHAR2. OUTYEAR $CHAR2.
   MEPS690 $CHAR2. ' ' TEST690 $CHAR3. WEEK $CHAR1.
   OUTCELL $CHAR1. OUTSERV $CHAR1. UP_ID_UA $CHAR1.
   OUTDATE $CHAR8. OUTBASE $CHAR6.
   UPDATE $CHAR2. ' ' NOINTER $CHAR1.;
STEP 8 - UPDATE ACTIVE DUTY DATE AND BASIC TRAINING INFORMATION

Part X1 - Verify Update Data
//S08UPDT EXEC SAS
//IN1 DD DSN=G.G1157.AB230.S08B.UPDT.P3.DATA,DISP=SHR
//*IN1 DD UNIT=DUAL9, VOL=SER=005296, LABEL=(2, NL),
//* DISP=(OLD, KEEP),
//* DCB=(RECFM=FB, BLKSIZE=1520, LRECL=152, OPTCD=Q, DEN=2)
//SYSIN DD *

/*****************************/
/*
/* PROGRAM: S081.EXPL.P3.SORC */
/* LANGUAGE: SAS */
/* PURPOSE: VERIFY UPDATE FILE SENT TO SURVEY CONTRACTOR */
/* INPUT: S08B.UPDT.P3.DATA (RAW UPDATE FILE) */
/* OUTPUT: LISTS */
/* LOGIC: READ RAW UPDATE DATA INTO A SAS FILE. */
/* PRINT THE FILE. */
/* PRINT PRIORITY RECORDS. */
/*****************************/
DATA VERIFY; INFILE IN1;

INPUT
  RAND_ID  4.
  OUTMONTH $CHAR9. OUTDAY $CHAR2. OUTYEAR $CHAR2.
  MEPS690 $CHAR2. +I TEST690 $CHAR3. WEEK $CHAR1.
  OUTCELL $CHAR1. OUTSERV $CHAR1. RE_ID_UA $CHAR1.
  OUTDATE $CHAR8. OUTBASE $CHAR6.
  UPDATE $CHAR2. +3;

LIST;

PROC PRINT;
FORMAT RAND_ID Z4.;
TITLE1 UPDATED CASES;

DATA SHIP; SET VERIFY; IF RE_ID_UA > '1';
PROC SORT; BY OUTDATE;
PROC PRINT; VAR RAND_ID LAST FIRST MIDDLE OUTDATE;
FORMAT RAND_ID Z4.;
TITLE2 PRIORITY LIST;
Appendix

CONTENT AND FORMAT OF DATA RECORDS
### ORIGINAL MRS RECORD

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO_VA_AB</td>
<td>Social Security Number</td>
<td>9</td>
</tr>
<tr>
<td>AA_FE_UA</td>
<td>MEPS Code</td>
<td>2</td>
</tr>
<tr>
<td>NA_RG_UA</td>
<td>Name</td>
<td>27</td>
</tr>
<tr>
<td>DA_FA_UA</td>
<td>Date of Action</td>
<td>8</td>
</tr>
<tr>
<td>PM_SV_AA</td>
<td>Prior Military Service</td>
<td>2</td>
</tr>
<tr>
<td>ST_CO_CA</td>
<td>State and County Code (FIPS) [1]</td>
<td>5</td>
</tr>
<tr>
<td>ZP_CO_UA</td>
<td>Zip Code</td>
<td>5</td>
</tr>
<tr>
<td>SE_XA_AA</td>
<td>Sex</td>
<td>1</td>
</tr>
<tr>
<td>DA_FA_DB [2]</td>
<td>Date of Birth</td>
<td>8</td>
</tr>
<tr>
<td>YEARCERT</td>
<td>Education Years/Certificate</td>
<td></td>
</tr>
<tr>
<td>YE_NQ_AA</td>
<td>Years of Education</td>
<td>2</td>
</tr>
<tr>
<td>ED_UC_AA</td>
<td>Education Certificate</td>
<td>1</td>
</tr>
<tr>
<td>RE_ID_UA</td>
<td>Record Type [3]</td>
<td>1</td>
</tr>
<tr>
<td>PE_CD_UA</td>
<td>Mental Category (AFQT) [4]</td>
<td>2</td>
</tr>
<tr>
<td>DA_FA_UX</td>
<td>Date of Enlistment/Active Duty [4]</td>
<td>8</td>
</tr>
<tr>
<td>DA_FA_UY</td>
<td>Date of Enlistment/Active Duty [4]</td>
<td>8</td>
</tr>
<tr>
<td>TM_EN_UA</td>
<td>Term of Enlistment</td>
<td>1</td>
</tr>
<tr>
<td>TR_TC_UA</td>
<td>Training Base Code</td>
<td>6</td>
</tr>
<tr>
<td>DA_FA_UJ</td>
<td>Projected Active Duty Date</td>
<td>8</td>
</tr>
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</table>

**Transaction History (up to 10 histories)**

<table>
<thead>
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<th>Name</th>
<th>Description</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>MN_CD_UA</td>
<td>Mental Code</td>
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</tr>
<tr>
<td>DA_FA_UD</td>
<td>Date of Transaction</td>
<td>8</td>
</tr>
<tr>
<td>AA_FE_TR</td>
<td>MEPS Code</td>
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</tr>
<tr>
<td>SR_VC_TR</td>
<td>Service Processed For</td>
<td>3</td>
</tr>
</tbody>
</table>

**NOTE:** See U.S. Army Recruiting Command Regulation 18-5 for a detailed description of the values and formats of MRS variables.

---

[1] The first two characters represent the state code and the last three represent the county code.

[2] Unless otherwise noted, date variables are in the format YYYYMMDD, where Y means year, M means month, and D means day (e.g., 19830424).

[3] Coded as follows: 1=exam(s) only; 2=DEP (i.e., signed contract, now in Delayed Entry Program); 3=accession; 4=DEP dropout.

[4] DA_FA_UX indicates projected active duty date for persons in DEP. DA_FA_UY indicates accession date.
DATEIN RECORD

<table>
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<tr>
<th>Name</th>
<th>Description</th>
<th>Length</th>
</tr>
</thead>
<tbody>
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<tr>
<td>BEGIN_DATE</td>
<td>Period Starting Date</td>
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</tr>
<tr>
<td>END_DATE</td>
<td>Period Ending Date</td>
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</table>

SCREENED MRS RECORD

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</thead>
<tbody>
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<td>SO_Ca_AB</td>
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</tr>
<tr>
<td>AA_FE_UA</td>
<td>MEPS Code</td>
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</tr>
<tr>
<td>NA_RG_UA</td>
<td>Name</td>
<td>27</td>
</tr>
<tr>
<td>DA_FA_UC</td>
<td>Date of Action</td>
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<td>5</td>
</tr>
<tr>
<td>ZP_CO_UA</td>
<td>Zip Code</td>
<td>5</td>
</tr>
<tr>
<td>SE_XA_AA</td>
<td>Sex</td>
<td>1</td>
</tr>
<tr>
<td>DA_FA UB</td>
<td>Date of Birth</td>
<td>8</td>
</tr>
<tr>
<td>YEARCERT</td>
<td>Education Years/Certificate</td>
<td>8</td>
</tr>
<tr>
<td>YE_NQ_AA</td>
<td>Years of Education</td>
<td>2</td>
</tr>
<tr>
<td>ED_UC_AA</td>
<td>Education Certificate</td>
<td>1</td>
</tr>
<tr>
<td>RE_ID_UA</td>
<td>Record Type</td>
<td>1</td>
</tr>
<tr>
<td>PE_CD_UA</td>
<td>Mental Category (AFQT)</td>
<td>2</td>
</tr>
<tr>
<td>DA_FA_UX</td>
<td>Date of Enlistment/Active Duty</td>
<td>8</td>
</tr>
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<td>8</td>
</tr>
<tr>
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<td>Term of Enlistment</td>
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</table>

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<tr>
<td>DA_FA UD</td>
<td>Date of Transaction</td>
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<tr>
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Transaction of Interest

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PARAMIN RECORDS

**RECORD 1**

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### SCREENED MRS RECORD WITH BONUS/QUALITY CELL

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<td>NA_RG_UA</td>
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<tr>
<td>DA_FA_UC</td>
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<td>PM_SV_AA</td>
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<tr>
<td>ZP_CO_UA</td>
<td>Zip Code</td>
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<tr>
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#### Transaction History (up to 10 histories)

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#### CELL

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**Transaction of Interest:**

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**CELL**

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[1] Coded as MDD (e.g., 424).
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<tr>
<td>O_PHONE</td>
<td>Other Phone Number</td>
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</tr>
<tr>
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<tr>
<td>MEPS</td>
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### IDF SAS OBSERVATION

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[1] Coded as MDD (e.g., 424).
[2] Coded as MMDD.
[3] Coded as first 4 letters of last name + space + first letter of first name.
MATCH-MERGED MRS and IDF SAS OBSERVATION

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</tr>
<tr>
<td>NA_RG-UA</td>
<td>Name</td>
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<tr>
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<tr>
<td>PM_SV_AA</td>
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<tr>
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<tr>
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<td>Projected Active Duty Date</td>
<td>8</td>
</tr>
</tbody>
</table>

Transaction of Interest:
| MN_CD_UA   | Mental Code                           | 1      |
| DA_FA_UU   | Date of Transaction                   | 8      |
| AA_FE_TR   | MEPS Code                             | 2      |
| SR_VC_TR   | Service Processed For                 | 3      |

| CELL       | Bonus/Quality Cell                    | 2      |
| WEEK       | Matching Period Flag                  | 1      |
| MEPS690    | MEPS Code of Interest                 | 2      |
| NAME690    | LAST690 + Blank + FIRST690           | 7      |
| BIRTH690   | SAS Date of Birth                     | 7      |
| TEST690    | Test Date (Date of Transaction)      | 3      |
| STATE690   | Recoded FIPS State Code               | 2      |
| LAST       | Last Name                             | 14     |
| FIRST      | First Name                            | 9      |
| MIDDLE     | Middle Name                           | 1      |
| ADDRESS    | Home Street Address                   | 23     |
| CITY       | Home City                             | 14     |
| STATE      | Home State                            | 14     |
| SEX        | Sex                                   | 1      |
| MONTH      | Month of Birth                        | 9      |
| DAY        | Day of Birth                          | 2      |
| YEAR       | Year of Birth                         | 2      |
| H_PHONE    | Home Phone Number                     | 10     |
| O_PHONE    | Other Phone Number                    | 10     |
| INITIALS   | Directory Listing for O_PHONE         | 3      |
| MEPS       | MEPS Code                             | 2      |
| TESTDATE   | Test Date                             | 3      |
| SOURCE     | Date Created                          | 4      |
| MEPSIDF    | Meps Code (MEPS)                      | 2      |
| NAMEIDF    | Last Name + Space + First Name        | 7      |
| BIRTHIDF   | SAS Date of Birth                     | 8      |
| IDF_ID     | IDF Observation Number                | 8      |
## SURVEY CONTRACTOR SAS OBSERVATION

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<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Length</th>
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</thead>
<tbody>
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<tr>
<td>SR_VC_TR</td>
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</table>

| CELL   | Bonus/Quality Cell | 2 |
| WEEK   | Matching Period Flag | 1 |
| MEPS690| MEPS Code of Interest | 2 |
| NAME690| LAST690 + Blank + FIRST690 | 7 |
| BIRTH690| SAS Date of Birth  | 1 |
| TEST690| Test Date (Date of Transaction)      | 3 |
| STATE690| Recoded FIPS State Code | 2 |
| LAST   | Last Name               | 14 |
| FIRST  | First Name              | 9  |
| MIDDLE | Middle Name             | 1  |
| ADDRESS| Home Street Address     | 23 |
| CITY   | Home City               | 14 |
| STATE  | Home State              | 14 |
| SEX    | Sex                     | 1  |
| MONTH  | Month of Birth          | 9  |
| DAY    | Day of Birth            | 2  |
| YEAR   | Year of Birth           | 2  |
| H_PHONE| Home Phone Number       | 10 |
| O_PHONE| Other Phone Number      | 10 |
| INITIALS| Directory Listing for O_PHONE | 3 |
| MEPS   | MEPS Code               | 2  |
| TESTDATE| Test Date               | 3  |
| SOURCE | Date Created            | 4  |
| MEPSIDF| Meps Code (MEPS)        | 2  |
SURVEY CONTRACTOR SAS OBSERVATION (continued)

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[1] Coded as follows: 1=Army; 2=Navy; 3=Air Force; 4=Marine Corps.
[2] Coded as follows: 1=HA; 2=HB; 3=HC; 4=LA; 5=LB; 6=Lc.
### FINAL SURVEY CONTRACTOR SAS OBSERVATION

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**Transaction of Interest:**

| MN_CD_UA      | Mental Code                     | 1      |
| DA_FA_UD      | Date of Transaction             | 8      |
| AA_FE_TR      | MEPS Code                       | 2      |
| SR_VC_TR      | Service Processed For           | 3      |

| CELL          | Bonus/Quality Cell              | 2      |
| WEEK          | Matching Period Flag            | 1      |
| MEPS690       | MEPS Code of Interest           | 2      |
| NAME690       | LAST690 + Blank + FIRST690     | 7      |
| BIRTH690      | SAS Date of Birth               |        |
| TEST690       | Test Date (Date of Transaction) | 3      |
| STATE690      | FIPS State Code                 | 2      |
| LAST          | Last Name                       | 14     |
| FIRST         | First Name                      | 9      |
| MIDDLE        | Middle Name                     | 1      |
| ADDRESS       | Home Street Address             | 23     |
| CITY          | Home City                       | 14     |
| STATE         | Home State                      | 14     |
| SEX           | Sex                             | 1      |
| MONTH         | Month of Birth                  | 9      |
| DAY           | Day of Birth                    | 2      |
| YEAR          | Year of Birth                   | 2      |
| H_PHONE       | Home Phone Number               | 10     |
| O_PHONE       | Other Phone Number              | 10     |
| INITIALS      | Directory Listing for O_PHONE   | 3      |
| MEPS          | MEPS Code                       | 2      |
| TESTDATE      | Test Date                       | 3      |
| SOURCE        | Date Created                    | 4      |
| MEPSIDF       | Meps Code (MEPS)                | 2      |
### FINAL SURVEY CONTRACTOR SAS OBSERVATION (continued)

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**Transaction of Interest:**

| MN_CD_UA      | Mental Code                                | 1      |
| DA_FA_UU      | Date of Transaction                        | 8      |
| AA_FE_TR      | MEPS Code                                  | 2      |
| SR_VC_TR      | Service Processed For                      | 3      |

CELL     | Bonus/Quality Cell                        | 2      |
WEEK     | Matching Period Flag                      | 1      |
MEPS690  | MEPS Code of Interest                     | 2      |
NAME690  | LAST690 + Blank + FIRST690                | 7      |
BIRTH690 | SAS Date of Birth                         | 2      |
TEST690  | Test Date (Date of Transaction)           | 3      |
STATE690 | FIPS State Code                           | 2      |
LAST     | Last Name                                 | 14     |
FIRST    | First Name                                | 9      |
MIDDLE   | Middle Name                               | 1      |
ADDRESS  | Home Street Address                       | 23     |
CITY     | Home City                                 | 14     |
STATE    | Home State                                | 14     |
SEX      | Sex                                       | 1      |
MONTH    | Month of Birth                            | 9      |
DAY      | Day of Birth                              | 2      |
YEAR     | Year of Birth                             | 2      |
H_PHONE  | Home Phone Number                         | 10     |
O_PHONE  | Other Phone Number                        | 10     |
INITIALS | Directory Listing for O_PHONE             | 3      |
MEPS     | MEPS Code                                 | 2      |
TESTDATE | Test Date                                 | 3      |
SOURCE   | Date Created                              | 4      |
MEPS1DF  | Meps Code (MEPS)                          | 2      |
### UPDATED SURVEY CONTRACTOR SAS OBSERVATION (continued)

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