This electronic mail communication constitutes an official release of a change to the University of California Base Payroll System. A confirmation release letter will follow by U.S. Mail, but campuses are authorized to install this release immediately upon receipt of this communication.

Release 1069 issued three one-time programs to load retroactive TX files, calculate interest, and produce the final Compute file and reports.

It was reported and confirmed that PPP1069C contained an error in the logic which consolidated employee group amounts. The error caused a zero divide abend in some cases, and zero amount records in others.

While testing the fix for the zero divide problem, it was determined that the sign field on output transactions was not being cleared out properly, and that incorrect minus signs could result. This error depends on the order in which records that are being grouped that are fetched within the limits of the cursor's ORDER BY clause. The cursor ensures that the data is grouped correctly for its purpose, but it is not defined broadly enough to guarantee the same row order in each run of the program. The error can happen, not happen, or inconsistently happen, so it may not have occurred locally. If PPO1069C has been run, the transaction file should be reviewed for any records that have a minus sign.

The one-time program is being re-released with the same name, i.e. PPO1069C.

Release Title: PPO1069C zero divide correction
Programs Being Modified: PPO1069C
Error Report: 1422
Change Mark: 28211074
Urgency: Urgent.

1. Make the following changes to one-time COBOL program PPO1069C.

At the beginning please insert the following flowerbox:

```
**************************************************************/
*  PROGRAM: PPO1069C                                          */
*  RELEASE: ___1074______ SERVICE REQUEST(S): ____12821____  */
*  REF REL: ___1069______                                    */
*  NAME:__PHIL THOMPSON__ MODIFICATION DATE:  ___07/01/96_   */
*  DESCRIPTION:                                              */
*  ERROR REPORT 1422:                                        */
* - WRITE FINAL EMP GROUP ONLY ON EOF WRA TABLE.              */
* - IF AMOUNT NOT < ZERO MOVE SPACES TO SIGN.                 */
***************************************************************/
```

2. Near the beginning of 1500-GROUP-EMP-AMOUNT find the following code
and insert the changes:

****************************************************************
***PROCESS LAST EMPLOYEE GROUP RECORD. **
****************************************************************

IF NOT EOF-WRA-TABLE  ===> insert
   GO TO 1500-EXIT  ===> insert
END-IF.  ===> insert

IF XC2T-HR-PCT = '%'
   COMPUTE XC2T-GROSS9 = WS-EMP-GROUP-AMOUNT + .005
   MOVE 1.0000 TO XC2T-TIME-PCT

3. In 1100-CREATE-RAFT-TRANS find the following code and insert the changes.

   IF WS-EMP-FED-INTEREST < ZERO
      MOVE '-' TO XC2T-SIGN
   ELSE
      MOVE SPACE TO XC2T-SIGN
   END-IF

4. In 1220-INTEREST-GROUPS find the following code and insert the changes.

   IF WS-EMP-FAU-INTEREST < ZERO
      MOVE '-' TO XC2T-SIGN
   ELSE
      MOVE SPACE TO XC2T-SIGN
   END-IF.

5. In 1500-GROUP-EMP-AMOUNT find the following code and insert the changes.

   IF WS-EMP-GROUP-AMOUNT < 0
      MOVE '-' TO XC2T-SIGN
   ELSE
      MOVE SPACE TO XC2T-SIGN
   END-IF.

6. In 1520-AMOUNT-GROUPS find the following code and insert the changes.

   IF WS-EMP-GROUP-AMOUNT < 0
      MOVE '-' TO XC2T-SIGN
   ELSE
      MOVE SPACE TO XC2T-SIGN
   END-IF

Testing
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At UCOP we used the data in the Release 1069 M3FILE and copied the records for ID 000050119 twice: once for ID 000050129 and once for ID 000050139. We also changed the location code of the FAU's for the DOS Code OTH records for 000050119 to "8" and changed the location code to "1" for the matching records for 000050129. This was done to create hourly transactions that would be ordered by the cursor to just before and just after an ID break.

We used the Release 1069 JCL(RUNOTA2) and set all the file flags to "Y" to load the table, and ran JCL(RUNOTB2) to calculate the interest. We then ran JCL(RUNOTC) pointing to the Release 1069 version of PPO1069C. It abended with an OCB zero-divide error.

We made the above changes to PPO1069C and reran RUNOTC pointing to the test version of PPP930. It did not abend. All the transactions were created correctly for the grouped ID data, and no zero amount records were created. The last group record for ID 000050139 was created.

The second problem involving the negative sign cannot be tested as easily due to the fact that the error depends on the order in which rows are fetched by the program. Within the limits of the ORDER BY clause of the WRA_ROW cursor, it is possible for the last record to be processed for a group to be different in two consecutive runs. At UCOP we tested it by making a temporary version of PPO1069C with a change to the cursor and fetch statements to include the WRA_SEQ field. We then edited the WRA table data to create negative signed transactions that had the highest sequence number within their group. We then ran pointing to a version of this release's PPO1069C which did *not* include the "ELSE MOVE SPACES TO XC2T_SIGN" changes in it. The grouped transaction contained an incorrect minus sign in the output transaction. We then ran again pointing to a version of PPO1069C with the complete changes. This time the transaction contained the correct sign. We validated the rest of the transactions as well.

Installation Instructions
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1. Modify program PPO1069C per above.
2. DB2 pre-compile, compile and link PPO1069C into the batch DBRMLIB and LOADLIB.
3. Bind the plan for PPO1069C.
4. Perform the above test.
5. Perform any desired local tests.
6. Install in production.

The modified program is available on the payroll FTP site, in the PAYDIST.R1074.COBO library.

Timing of Installation
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The installation of this change to Release 1069 is Urgent. This release should be installed as soon as possible in order to allow campus Payroll offices to proceed with the TX retroactive process.

If there are any questions, please send electronic mail to Phil.Thompson@ucop.edu, or call at (510)987-0468.