

The image features a decorative background with a large, light blue triangle pointing downwards. At the top, there is a horizontal bar with a black section on the left containing the text 'SUNGARD' in white, followed by a blue section containing 'HIGHER EDUCATION' in white. To the right of this bar is a vertical bar composed of many thin, colored stripes in various shades including red, orange, blue, purple, green, and teal. Below the bar, the text 'BANNER' and 'MULTIPLE YEAR ENCUMBERING HANDBOOK' is centered in a bold, black, sans-serif font. Below the title, the date 'October 2011' is centered in a smaller, black, sans-serif font. The bottom half of the page is filled with a pattern of light blue dots and ovals arranged in a grid-like fashion, with the shapes becoming larger and more spaced out as they move towards the bottom right corner.

**SUNGARD** HIGHER EDUCATION

# **BANNER MULTIPLE YEAR ENCUMBERING HANDBOOK**

October 2011

---

## Trademark, Publishing Statement and Copyright Notice

SunGard Data Systems and/or its subsidiaries in the U.S.A. and other countries is the owner of numerous marks, including "SunGard," and the SunGard logo. SunGard Higher Education and/or its subsidiaries in the U.S.A and other countries is the owner of "Banner," "PowerCAMPUS," "Advance," "Luminis," "DegreeWorks," "fsaATLAS," "Course Signals," and "Open Digital Campus." Other names and marks used in this material are owned by third parties.

©2008-2011 SunGard Higher Education. All rights reserved. The unauthorized possession, use, reproduction, distribution, display or disclosure of this material or the information contained herein is prohibited.

Contains confidential and proprietary information of SunGard Higher Education and its subsidiaries. Use of these materials is limited to SunGard Higher Education licensees, and is subject to the terms and conditions of one or more written license agreements between SunGard Higher Education and the licensee in question.

In preparing and providing this publication, SunGard Higher Education is not rendering legal, accounting, or other similar professional services. SunGard Higher Education makes no claims that an institution's use of this publication or the software for which it is provided will insure compliance with applicable federal or state laws, rules, or regulations. Each organization should seek legal, accounting and other similar professional services from competent providers of the organization's own choosing.

In Portable Document Format (PDF), this document is certified for use with Adobe Reader, version 7.x and higher. Some elements of this PDF may not render properly when viewed using earlier versions of the Acrobat Reader or with other PDF viewing applications.

### Prepared by: SunGard Higher Education

4 Country View Road  
Malvern, Pennsylvania 19355  
United States of America

### Customer Support Center Website

<http://connect.sungardhe.com>

### Documentation Feedback

<http://education.sungardhe.com/survey/documentation.html>

### Distribution Services E-mail Address

[distserv@sungardhe.com](mailto:distserv@sungardhe.com)

### Prepared For

Human Resource 8.6  
Finance 8.0  
Position Control 8.6

### Revision History Log

Publication Date	Summary
October 2011	New version that supports Banner 8.6 software.

# Banner 8.6 Multiple Year Encumbering Handbook

## Contents

<b>Chapter 1</b>	<b>Overview</b> .....	<b>1-1</b>
	<b>System Requirements</b> .....	<b>1-1</b>
<b>Chapter 2</b>	<b>Multiple Year Encumbering</b> .....	<b>2-1</b>
	<b>Recommendation</b> .....	<b>2-1</b>
	<b>Assumptions</b> .....	<b>2-1</b>
	<b>Associated Terms and Definitions</b> .....	<b>2-2</b>
	<b>Multiple Year Encumbering Process Flow</b> .....	<b>2-3</b>
	<b>Banner Setup for Multiple Year Encumbering</b> .....	<b>2-5</b>
	Step 1—Set Up Forms in Banner Finance .....	<b>2-5</b>
	Step 2—Set Up Forms in Banner Human Resources and Position Control .....	<b>2-7</b>
	Step 3—Process Encumbrance Calculations .....	<b>2-8</b>
	<b>Finance Year End Processes</b> .....	<b>2-9</b>
	Roll HR Labor Encumbrances Process (FGRENC) .....	<b>2-9</b>
	Parameters .....	<b>2-10</b>
	Additional Encumbrance Calculation Information .....	<b>2-15</b>
	<b>Impact on Salary Planner</b> .....	<b>2-16</b>
	<b>Impact on Self-Service EPAFs</b> .....	<b>2-16</b>
	<b>Impact on Faculty Load and Compensation</b> .....	<b>2-17</b>

<b>Appendix A Encumbrance Calculation Examples</b> .....	<b>A-1</b>
<b>Example 1—Multiple Year Projection With Payroll Calendar Limitation</b> . . .	<b>A-1</b>
<b>Example 2—Multiple Year Projection With a Change in the Labor Distribution During the Active Fiscal Year</b> . . . . .	<b>A-1</b>
<b>Example 3—Multiple Year Projection With an Encumbrance Override End Date</b> . . . . .	<b>A-2</b>
<b>Example 4—Projecting Contract Dates into Future Years</b> . . . . .	<b>A-3</b>
<b>Example 5—Multiple Year Projection with Multiple Labor Distribution FOAPALS</b> . . . . .	<b>A-3</b>
<b>Example 6—Multiple Year Projection With Fringe Chargeback</b> . . . . .	<b>A-4</b>
<b>Example 7—Multiple Year Projection Using a Work Schedule</b> . . . . .	<b>A-5</b>
<b>Troubleshooting</b> .....	<b>T-1</b>
<b>Employee Jobs Form (NBAJOBS)</b> . . . . .	<b>T-1</b>
<b>Encumbrance Maintenance Process (NBPENCM)</b> . . . . .	<b>T-4</b>
<b>Transactions Interfaced to Banner Finance</b> . . . . .	<b>T-5</b>

# 1 Overview

---

The Grants Management Project in Banner Human Resources and Position Control is concerned with enhancing existing functionality in the following key areas:

- Encumbering
- Effort Certification, and
- Labor Redistribution

Due to the extensive changes involved, the functionality in the above three areas will be covered over two consecutive Banner releases, 8.0 and 8.1. Release 8.0 of Banner Human Resources and Position Control enhances encumbering functionality, and Release 8.1 will enhance the functionality with regard to effort certification and labor redistribution to complete all the components of the Grants Management Project listed above.

Currently, Banner Human Resources and Position Control support encumbering of labor and fringe distributions only for the *current active* fiscal year. This encumbering functionality has been extended to cover multiple years, and in the process, provide a more effective method to track labor and fringe encumbrances associated with grants.

## System Requirements

---

Install the following minimum releases to enable Multiple Year Encumbering at your institution:

Banner General: 8.0

Banner Position Control Release: 8.0

Banner Human Resources Release: 8.0

Banner Finance Release: 8.0



# 2 Multiple Year Encumbering

---



This chapter describes how to implement multiple year encumbering at your enterprise.

## Recommendation

---



It is recommended that you implement Multiple Year Encumbrance enhancement at the end of the Fiscal Year when creating new fiscal year encumbrances. Otherwise, if implemented during the fiscal year, the new encumbrance calculation logic in the Employee Jobs API and the new Encumbrance Maintenance Process (NBPENCM) may cause a rounding amount difference to be calculated and fed the first time the process is run.

### *Example*

If the pre-enhancement encumbrance calculation was \$49,999.99 using the old logic, and the post-enhancement amount is \$50,000.01 with the new logic, then the difference of \$0.02 will be calculated for the **To Post** amount and fed to Banner Finance to adjust the original encumbrance.

## Assumptions

---



For multiple year encumbering, assume the following:

- Banner Finance and Grant module must be installed.
- Banner Human Resources and Position Control must be installed.
- Multiple year encumbering can be used only for the *System Calculated* method of salary encumbrances and encumbrance recasting.
- The *Hours Input* and *Value Input* salary encumbrance methods are not affected by multi-year encumbering, since they were created for specific situations and purposes.
- The *Payroll Liquidation* method does not use multiple year encumbering.
- Encumbering will only be calculated on an employee's job assignment (on NBAJOBS) by the Encumbrance Maintenance Process (NBPENCM), and not at the position budget level.



- Only job records that have a non-terminated date in the currently *Active* fiscal year will be considered for encumbrance calculations.
- Fiscal years must be established on the Banner Finance Fiscal Year Maintenance Form (FTMFSYR) for future associated grant years to allow for future HR fiscal years. Future fiscal years do not have to be *Open* in Finance.
- Fiscal years must be established on the Banner HR Fiscal Year Form (NBAFISC) for future associated grant years to calculate future year encumbrance amounts. Future fiscal years do not have to be *Active* in HR.
- Payroll calendar entries must be established on the Payroll Calendar Rules Form (PTRCALN) for all future payroll periods associated with grant years to calculate future year encumbrance amounts.
- Grant budgets will be posted in accordance with the related budget dates on FRMFUND or FRAGRNT.

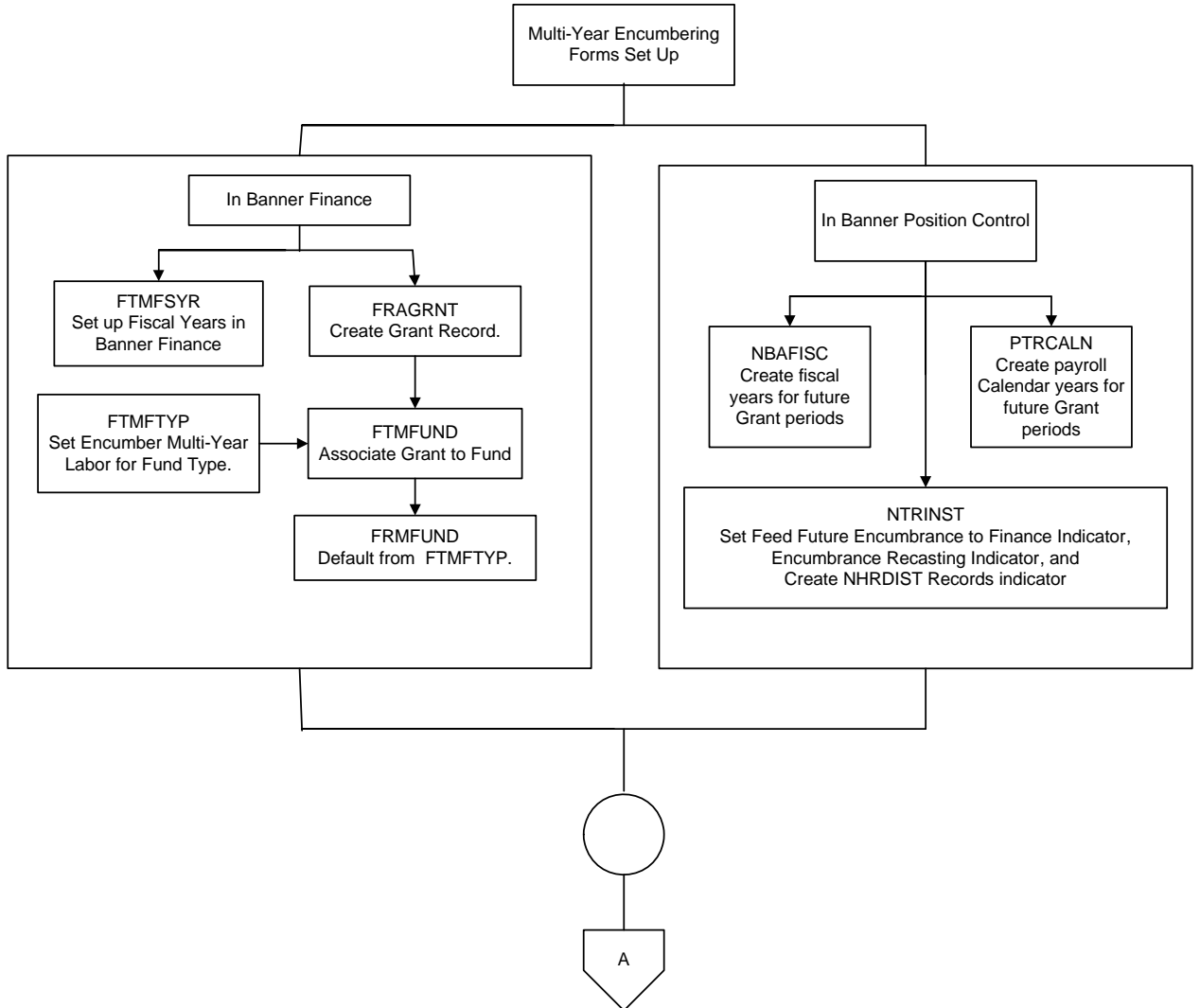
## Associated Terms and Definitions

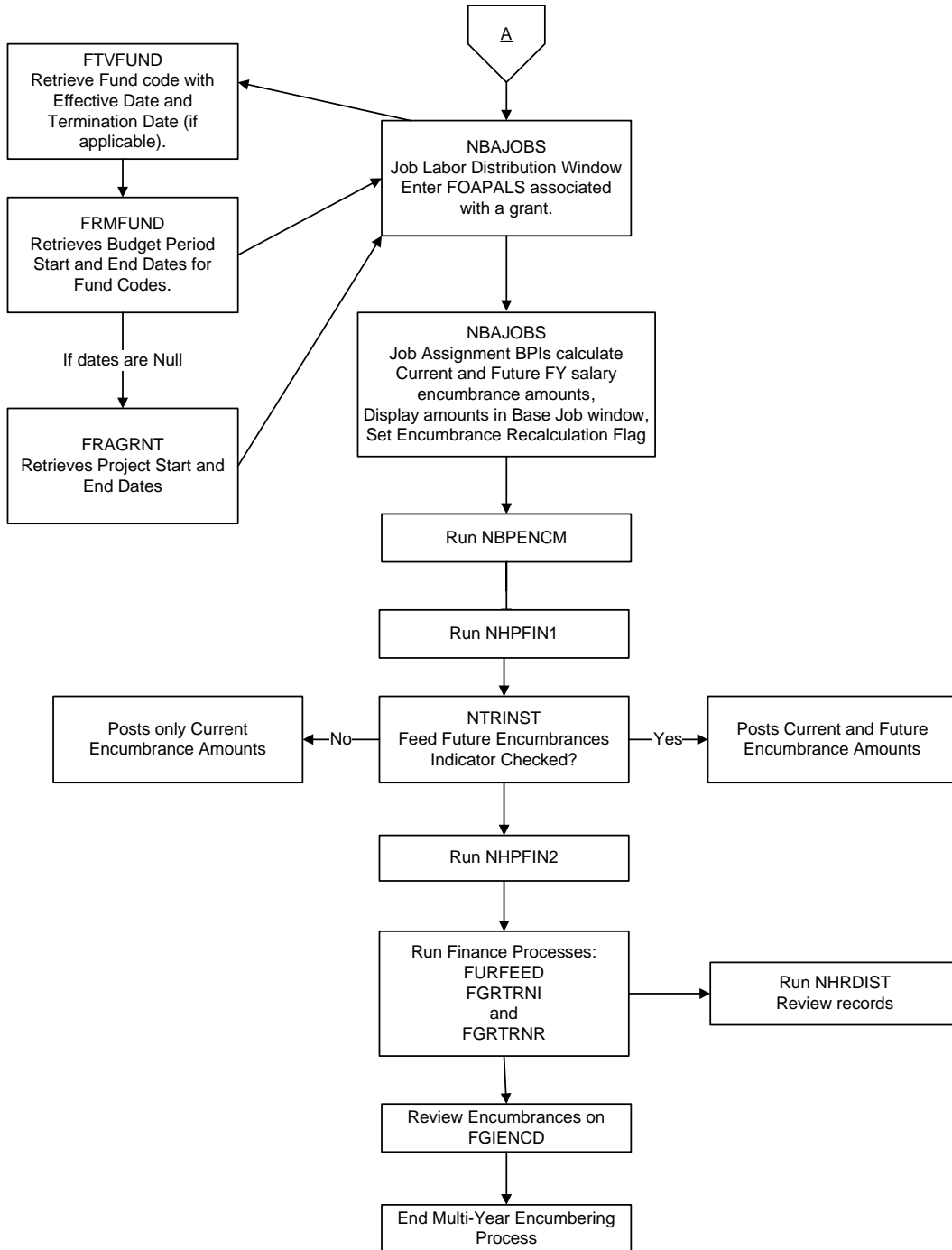
---

The following terms are used frequently in this chapter.

Term	Definition
Grant Period	The length of the grant; this may differ from the fiscal year and encompass more than one fiscal year.
Grant Budget Period	The budget period for a grant; this may encompass the entire grant period, or be a portion of the overall grant period.
Fund Type	A classification category of fund that represents their purpose. For example, Capital Projects, General, Education, Restricted, etc.

# Multiple Year Encumbering Process Flow





# Banner Setup for Multiple Year Encumbering

---

To process multiple year encumbrances in Banner Human Resources and Position Control, perform the following tasks:

- Step 1: Forms Set Up in Banner Finance
- Step 2: Forms Set Up in Banner Human Resources and Position Control
- Step 3: Process Budget and Encumbrance Calculations

## Note

Multiple year encumbering can only be used for the *System Calculated* method of salary encumbrances with Encumbrance Recasting.

The *Hours Input* and *Value Input* salary encumbrance methods are not affected by multiple year encumbering, since they were created for specific situations and purposes.

The Payroll Liquidation method does not use multiple year encumbering. This method does not look at every job when it is run. It only picks up changes made on NBAJOBS. Multiple year encumbering requires every job reviewed for any changes in Banner Finance dates or other information. The Encumbrance Recasting method looks at every job regardless of any changes, because the overall encumbrance is recalculated every time due to the entry of the Recast Date. ■

## Step 1—Set Up Forms in Banner Finance

Set up the following Finance forms to establish fund and associated grant information, and trigger multiple year encumbrance calculations:

1. On the Fiscal Year Maintenance Form (FTMFSYR), establish future fiscal years in Banner Finance to allow for the creation of future fiscal years in Banner HR.

Refer to the Finance Release Guide and Online Help for more information on the FTMFSYR form.

## Note

Future fiscal years do not have to be *Open* in Banner Finance. ■

2. For existing Fund Types:

Run the script `ftvftyp1.sql` to update the **Encumber Multi Year Labor** indicator for existing fund types on the Fund Type Maintenance Form (FTMFTYP) and associated Research Accounting Fund records on the Research Accounting Fund Maintenance Form (FRMFUND).

This script is located in the `fin800000u` directory, which can be found in the Finance 8.0 Staging directory or in the `../finance/plus` directory.

3. For New Fund Types, Funds, and Grants:

- The **Encumber Multi Year Labor** check box must be checked to indicate that multi-year encumbering functionality will be used with this fund type. This value will default to the Research Accounting Fund Maintenance Form (FRMFUND) when creating a new record. You can change this value.
  - If you change the value in this field for an existing record, the Encumber Multi Year Labor field on FRMFUND is not updated automatically. You will have to change this field manually.
  - If you change the value in this field for a Fund Type, you will also have to change any associated Research Accounting Fund records that exist on FRMFUND. The system reminds you to do this by displaying the following message:

*Existing Fund records may need similar changes.*

4. Create a Grant record on the Grant Maintenance Form (FRAGRNT).

5. Associate a Grant code with a Fund code on the Fund Code Maintenance Form (FTMFUND).

6. Create a Research Accounting Fund Maintenance record on FRMFUND and ensure that the **Encumber Multi Year Labor** check box is selected. This enables multi-year encumbering functionality for a specific grant and fund code combination.

If a fund code is not associated with a grant and you select the **Encumber Multi Year Labor** check box, the following message is displayed:

*\*ERROR\* Encumber Multi Year Labor only allowed on Grant related records.*

Any change made to the **Encumber Multi Year Labor** check box will be picked up when you run the Encumbrance Maintenance Process (NBPENCM) in Banner Position Control. This ensures data is synchronized between Banner Finance and Banner Position Control by selecting Banner Finance records that are equal or less than equal to the Recast Date.

## Step 2—Set Up Forms in Banner Human Resources and Position Control

To provide for multiple year encumbering, set up the following fields in Banner Human Resources and Position Control:

7. Establish fiscal years for future grant periods on the Fiscal Year Form (NBAFISC). This will be used to project encumbrance amounts for future fiscal years.

Refer to online help for more information on the NBAFISC form.

### Note

Only one fiscal year per chart of accounts can be *Active* in Banner Human Resources. Therefore future fiscal years need do not have to be active. ■

8. Create payroll calendars for future grant periods on the Payroll Calendar Rules Form (PTRCALN). Encumbrance calculations are limited by PTRCALN records. If a Grant is accounted for over five years, but the calendar rules are only set up for two years, the encumbrance calculation will be limited to the two years.

Refer to online help for more information on the PTRCALN form.

9. Access the Position Control Installation Rules Form (NTRINST).

- 9.1. Select the **Create NHRDIST Records** check box to save and view historical information on the NHRDIST Report.

- 9.2. Select the **Encumbrance Recasting Indicator** check box.

- 9.3. Select the **Feed Future Encumbrance to Finance** check box to indicate that both, current year and future fiscal years encumbrance amounts are to be fed to Banner Finance. Otherwise, encumbrance amounts will be fed to Banner Finance for only the current fiscal year.

This indicator cannot be changed during the fiscal year once encumbrances have been calculated and the NHPFIN1 process has been run. If this occurs, manual intervention through journal vouchers is required to adjust Finance records.

### Note

If your institution does not use multi-year encumbering, selecting the above check box without selecting the **Encumber Multi Year Labor** check box on the Research Accounting Fund Maintenance Form (FRMFUND) does not have any effect on encumbrance calculations or feeds to finance. In this case, encumbrance amounts for only the current fiscal year will be fed to Banner Finance. ■

Refer to the online help of Banner Human Resources for more information on the NTRINST form.

## Step 3—Process Encumbrance Calculations

To associate grant information from Banner Finance with fund codes used on labor distributions in Banner Human Resources and Position Control, and calculate encumbrances, perform the following steps:

### 10. On the Employee Jobs Form (NBAJOBS):

**10.1.** Enter new jobs or change job information for employees.

**10.2.** (Optional) Enter an earlier override date for the **Encumbrance Override End Date** instead of the **Budget Period End Date**, **Project End Date**, or **Fund Termination Date**, when calculating multiple year encumbrance amounts.

Dates related to grants identified with a multiple year encumbering fund on the job labor distribution are displayed in the following order of priority:

- First from the Budget Period dates on the Research Accounting Fund Maintenance Form (FRMFUND).
- If the Budget Period Dates are not available, the Project dates are used instead.
- If the Fund has been terminated prior to the Budget Period End Date, or Project End Date if applicable, then that value is displayed.

Date field labels change depending on what is selected from Banner Finance.

#### Note

Grant data is related to Fund codes used on the labor distribution. So, if the same fund is used for multiple labor distribution records on the same Effective Date, the same set of rules (i.e. Override End Date) apply for all calculations relating to that fund. Therefore, if you enter a different **Encumbrance Override End Date** for a different FOAPAL within the same effective date for the same fund, the following message is displayed:

*\*ERROR\* All Encumbrance Override End Dates must be the same for Fund XXXX Effective Date, DD-MON-YYYY.* ■

See the online help of NBAJOBS for more information on dates and the Encumbrance Override End Date.

See page [A-1](#) for more information on encumbrance calculations.

See page [T-1](#) for tips on Troubleshooting.

**11. Run the Encumbrance Maintenance Process (NBPENCM).**

All encumbrance processing has been removed from the Budget Maintenance Process (NBPBUDM) and placed into a new Encumbrance Maintenance Process (NBPENCM). If the Fringe Chargeback Method is used, the NBPBUDM process must be run before NBPENCM.

For more details on NBPBUDM and NBPENCM processes, refer to Chapter 13, “Reports and Processes” of the *Banner Human Resources User Guide*.

**12. Run the Finance Extract Process (NHPFIN1).**

This process checks the **Feed Future Encumbrance to Finance** indicator on the Position Control Installation Rules Form (NTRINST), extracts the correct To Post amounts, assigns item numbers, and updates the following: position encumbrance data, job labor distribution history, and NHRFINC (a temporary table) and the NHRDIST table.

**13. Run the Finance Interface Report (NHPFIN2).**

This process creates the feed to Finance transactions, by populating the GURFEED table and updates the Interface flag, pay history, and the Feed Document number.

**14. (Optional) Review the records on the Organization Payroll Distribution Report (NHRDIST), or the alternate inquiry forms: NHIEDST and NHIDIST.**

**15. Finally, interface with Banner Finance by running the following processes:**

- Finance Feed Sweep Process (FURFEED)
- Interface Process (FGRTRNI)
- Transaction Error Report (FGRTRNR)

Refer to the *Banner Finance User Guide* for more details regarding Banner Finance reports and processes, including the Finance Year-End process, FGRENLC.

## Finance Year End Processes

---

This section describes the steps to be performed at the end of the fiscal year for rolling multiple year encumbrance balances forward.

### Roll HR Labor Encumbrances Process (FGRENLC)

This new process is similar to the Roll Open Encumbrances Process (FGRENRL), but processes Human Resources (HR) labor encumbrances only. This process can be run any

time after the last day of the old fiscal year and is not dependent on any other Finance year end process; however, it is recommended that the Balance Forward Process (FGRGLRL) be performed first to establish the opening of the new fiscal year.

The FGRLNC process will enable institutions to perform the following tasks:

- Close current HR labor encumbrances in the current fiscal year.
- Roll forward open future multi-year HR labor encumbrances into the new fiscal year.
- Close rolled HR labor encumbrances in the new fiscal year.

The FGRLNC process is optional if you do not use the multiple year encumbrance enhancement. The standard four year end processes (G/L Roll, Encumbrance Roll, Budget Carry Forward and the Closing Process) need to be performed in the order displayed on FGAYRLM. The new FGRLNC process is an exception to this rule. FGRLNC is not dependent on the execution of other year-end processes and it does not need to be run if you are not using the multiple year encumbrance enhancement.

## Parameters

There are two parameters for the FGRLNC process:

Parameters	Descriptions
Report Mode	A – Audit U - Update
Process Current or Rolled	C – Current Year processing R – Rolled Future encumbrances

### Audit Report Mode

When the FGRLNC process is run in Audit mode, it provides a list of open HR labor encumbrances that it will close or roll. If FGRLNC finds that some open encumbrance items are against a fund code with a termination or an expenditure end date that precedes the first day of your new fiscal year, it displays those exceptions in the .log file. This gives you the chance to re-instate the fund and include those items in this process, if desired.

### Update Report Mode

When the FGRLNC process is executed in Update mode, it inserts records into the transaction interface table (FGBTRNI) for editing and processing to the ledgers.

### Current or Rolled Process

The FGRLNC process must be executed twice: first in *C* mode and then in *R* mode.

Since *C* mode rolls future items in the new fiscal year, you must verify that these items have posted *before* you attempt to close them using *R* mode. Due to this timing consideration, FGRENCL needs to be executed twice.

### Current Process

When the FGRENCL process is run with a parameter value of *C* in Update mode, the **Ending Document Number** on FGAYRLM is updated, but the **Performed Date** remains blank. The FGRENCL process performs the following steps:

- Interrogates the Encumbrance Detail Table (FGBENCD) for all open current encumbrances (those items with an item number of 0,1, or 2).
- Validates that only HR labor encumbrances (encumbrance numbers starting with *PR*%) are selected, and closes those encumbrances in the old fiscal year.
- Interrogates open HR future encumbrance items (items with an item number of 3,4, or 5) and rolls those forward in the new fiscal year.

### Rolled Process

When the FGRENCL process is run with a parameter value of *R* in Update mode, the Ending Document Number will be reviewed, and a one-up number will be generated for the next step of the process.

- When this process is completed, the FGAYRLM Ending Document Number is updated and the Performed Date is populated.
- If you attempt to run the process with a parameter value of *R* before first running it with a value of *C*, the system checks for an Ending Document number. If one does not exist, the FGRENCL process halts and displays the following error message:  
*\*ERROR\* FGRENCL must be run in 'C' mode before 'R' mode can be processed.*

### Setup on FGAYRLM

Before you can use the FGRENCL process, you must enter the appropriate data on the Year End Maintenance Form (FGAYRLM).

1. Access FGAYRLM.
2. Enter Roll HR Labor Encumbrances values for the **Starting Document Number** and **Scheduled Date** fields. The **Starting Document Number** must begin with *PR*.
3. Save.

### Setup on FTMCOAS

The new Roll HR Labor Encumbrances Process (FGRENCL) only looks to the Encumbrance Parameters block to pick up the Rule Class Code for processing. All other values pertain to previously existing processes, such as FGRENRL.

Unlike non-HR encumbrances, the FGRLNC process does not carry over budget to cover the encumbrance balance. It looks only to the Chart or the Fund Type for the rule that will be used to roll encumbrance items.

1. Access the Chart of Accounts Maintenance Form (FTMCOAS).
2. Query on the chart and navigate to Encumbrance Parameters.
3. In the Encumbrance Parameter section, specify the Rule Class Code you wish to use for rolling HR labor encumbrances.

Verify that the rule class is valued. This is the rule that will be used in rolling future encumbrance items to the new fiscal year. Remember that you can override this rule by Fund Type using the FTMFTYP form.

This rule is shared by the Encumbrance Roll Process (FRGENRL) and FGRLNC. The only difference between the two processes is that FGRLNC does not use information provided in the Document Roll parameters as FRGENRL does.

FRGENRL uses the indicators as follows:

- If the Labor Encumbrance indicator is checked, FRGENRL will roll labor encumbrances as long as the encumbrance number does not begin with *PR*.
- If the Labor Encumbrance indicator is unchecked, FRGENRL will close all labor encumbrances not starting with a encumbrance number of *PR*. Those may be labor encumbrances interfaced from an outside system or labor encumbrances created in the Finance system using the FGAENCB form.

 **Note**

The only way to differentiate labor encumbrances from Banner HR is by the first two characters of the encumbrance number. The encumbrance number always begins with *PR*. ■

### Setup on FTMSDAT

1. Access FTMSDAT to verify that the rule class has been established for closing encumbrance items.
2. In Enter Query mode, enter FGBTRNI in the **Entity** field, and FGBTRNI\_ENC\_CLOSE\_RUCL\_CODE in the **Attribute** field. Execute the query.
3. The **Data** field displays the rule (E032 or similar as defined in FTMSDAT) used to perform an encumbrance close.

## FGRENC Processing Steps

The FGRENC process is run in a series of steps.

- Step 1: Run the FGRENC process with a parameter of *C* to close the current year encumbrances and roll the future encumbrances forward to the new fiscal year.
- Step 2: Manually run the FGRTRNI, FGRTRNR, and FGRACTG processes to edit and post FGRENC documents.
- Step 3: Run the FGRENC process with a parameter of *R* to close future encumbrances in the new fiscal year.
- Step 4: Manually run the FGRTRNI, FGRTRNR, and FGRACTG processes to edit and post FGRENC documents.

### Step 1: Run the FGRENC process to close the current year encumbrances and roll the future encumbrances forward to the new fiscal year.

When you run FGRENC in *C* mode, the process performs the following steps:

1. First, FGRENC looks at the FGBENCH encumbrance header table to select transactions with a Type of *L* (Labor), Encumbrance number of *PR*, and a status of *O* (*Open*).
2. Next, the process looks at the FGBENCD encumbrance detail table for the **Item**.
3. Next, it selects items with a value of *0*, *1*, or *2* and a status of *O* (*open*). It determines the rule class to use from FTVSDAT for closing encumbrances.
4. Using the starting document number defined on FGAYRLM for Roll HR Labor Encumbrances, FGRENC inserts records into the FGBTRNI table to close the current fiscal year HR labor encumbrance amounts using a Rule Class E032, with a transaction date set to the last day of the fiscal year.

The FGRENC process next performs future year encumbrance transactions dependent on Item number as described in the following steps:

5. FGRENC looks at the FGBENCH encumbrance table and selects those transactions with a Type of *L* (Labor), Encumbrance number of *PR*, and a status of *O* (*Open*).
6. Next, the process looks at the **Item** field value for those records with a value of *3*, *4* or *5*.
7. If run in Update mode, FGRENC assigns a new document from the last one used to perform the encumbrance close of the current encumbrances. Then, FGRENC inserts records into the FGBTRNI table to roll the remaining balance of the encumbrance to the new fiscal year, while maintaining the original encumbrance number.

The existing Rule Class defined on the Fund Type Maintenance form (FTVFTYP\_RUCL\_CODE\_ROLL\_ENC) or Chart of Accounts Code form (FTVCOAS\_RUCL\_CODE\_ROLL\_ENC) is used for the transactions. A transaction date of the first day of the new fiscal year will be used.

8. Finally, the process produces a hard copy report listing the encumbrances closed and rolled encumbrances sorted by fund within chart. It then updates the Ending document number in the FGBYRLM table.

## **Step 2 - Manually run the FGRTRNI, FGRTRNR, and FGRACTG processes to edit and post FGRLNC documents.**

You will need to perform the following steps:

1. Run the FGRTRNI process (or let Sleep/Wake kick off the process automatically, depending upon the institution's setup) to edit the transactions and insert records into the FGBJVCH and FGBJVCD tables.
2. Run the FGRTRNR process to report any errors. If there are no errors, the FGRTRNI process updates the FOBAPPD table.
3. Run the FGRACTG process (usually set up in Sleep/Wake mode) which updates the Finance ledgers and the FGBTRNH and FGBTRND tables.

## **Step 3 - Run the FGRLNC process to close the rolled future encumbrances in the new fiscal year.**

When you run FGRLNC in *R* mode, the process performs the following steps:

1. Looks at the FGBENCH encumbrance table to select those transactions that have a Type of *L* (Labor), Encumbrance number of *PR*, and a status of *O* (Open).
2. Looks at the FGBENCD encumbrance detail table for items that have a value of 3, 4, or 5.
3. Assigns a new document from the last one used, which is displayed as the ending document number in FGBYRLM, to perform the encumbrance close of the future encumbrances.
4. Inserts records into the FGBTRNI table to liquidate the new multi-year rolled encumbrances using the liquidation rule you supplied in ftvsdat in the new fiscal year, and the fiscal year begin date as the transaction date.
5. Produces a hard copy report listing closed encumbrance items, sorted by fund within chart.
6. Updates the Document Number and Performed Date on FGAYRLM.

#### **Step 4 - Manually run the FGRTRNI, FGRTRNR, and FGRACTG processes to edit and post FGRLNC documents.**

You will need to perform the following steps:

- 1.** You must run the FGRTRNI process (or let Sleep/Wake kick off the process automatically, depending upon the setup at your institution) to edit the transactions and insert records into the FGBJVCH and FGBJVCD tables.
- 2.** Run the FGRTRNR process to report any errors. If there are no errors, the FGRTRNI process updates the FOBAPPD table.
- 3.** Run the FGRACTG process (usually set up in Sleep/Wake mode) which updates the Finance ledgers and the FGBTRNH and FGBTRND tables.

#### **Additional Encumbrance Calculation Information**

For encumbrance calculations, the Encumbrance Calculation Begin Date is the *greater* date from among the following:

- The first day of the fiscal year (NBBFISC\_BEGIN\_DATE)
- The Job Begin Date (NBRBJOB\_BEGIN\_DATE) on the Employee Jobs Form (NBAJOBS)
- The Contract Begin Date (NBRBJOB\_CONTRACT\_BEGIN\_DATE) on the Employee Jobs Form (NBAJOBS)
- The Recast Date entered for the report parameter (if using the Recasting method)

Similarly, the Encumbrance Calculation End Date for multi-year grant encumbering is the *earliest* of the following dates:

- Job End Date (NBRBJOB\_END\_DATE) on the Employee Jobs Form (NBAJOBS)
- Contract End Date (NBRBJOB\_CONTRACT\_END\_DATE) on the Employee Jobs Form (NBAJOBS)
- Grant Budget Period End Date (FRVFUND\_BUDG\_PRD\_END\_DATE) or Grant Project End Date (FRBGRNT\_PROJECT\_END\_DATE) if Budget Period End Date does not exist, or the Fund Termination Date (FTVFUND\_TERM\_DATE)
- Encumbrance Override End Date (NBRJLBD\_ENC\_OVERRIDE\_END\_DATE)
- Fiscal Year End Date (NBBFISC\_END\_DATE) if the Budget Period End Date and Project End Date are NULL and the Job End Date, Contract End Date or Fund Termination Date do not exist or are beyond the end of the active fiscal year
- Payroll Calendar Period End Date (PTRCALN\_END\_DATE). Encumbrance calculations are limited by PTRCALN records. If a grant is accounted for over five

years, but the calendar rules for the job Pay ID are only set up for two years, the encumbrance calculation will be limited to the two years. This encumbrance limitation can affect both current and future calculations.

The NBPENCM process will look at the Banner Finance records that have an Effective Date that is less than or equal to the Recast Date. The process selects the appropriate effective dated record and ignores future effective dated records.

**Example:**

Recast Date = 01-JAN-2008  
FRMFUND record <= 01-JAN-2008

If you change the Encumber Multi-Year Labor value on the Research Accounting Fund Maintenance Form (FRMFUND), the next time you run the Encumbrance Maintenance process (NBPENCM), it will perform the following actions:

- Create encumbrance adjustments
- Process any future employee job effective-dated changes within the active fiscal year

All transactions performed by the NBPENCM process are captured for display on the Labor Distribution Change History Form (NBIJLHS).

## Impact on Salary Planner

---

In the Salary Planner, the **Encumbrance Override End Date** field has been added to the following self-service pages:

- Account Distribution (bwpksdst.P\_DispatchDist)
- Job Labor Distribution (bwpksdst.P\_JobLaborDist)

For detailed information on these self-service pages, refer to the Salary Planner Handbook of Employee Self-Service, Release 8.0.

## Impact on Self-Service EPAFs

---

The Electronic Personnel Action Form (EPAF) in Employee Self-Service has been modified to add a new field on the Account Distribution page for the **Encumbrance Override End Date** relating to the labor distribution on the Employee Jobs Form (NBAJOBS).

For a detailed description of this self-service page, refer to the Electronic Approvals Handbook of Employee Self-Service, Release 8.0.

# Impact on Faculty Load and Compensation

---

In the Faculty Load and Compensation (FLAC) module, the **Encumbrance Override End Date** field has been added to the following areas:

- The Extract Process (PEPFLAC) will extract an existing **Encumbrance Override End Date** only when the system extracts the labor distribution from an existing Job Assignment record, in which the Encumbrance Override End Date has previously been populated. This technique allows the job and labor distribution record to continue forward during a faculty reappointment.
- The Faculty Load and Compensation Upload process (PEPFCAP) will upload any pre-existing **Encumbrance Override End Date** with the labor distribution record. A new effective dated record will be created on NBAJOBS if the record previously came from a Job Labor Distribution with an Encumbrance Override End Date, and the Fund Code was not changed within the Faculty Load and Compensation pages. Changes to the **Encumbrance Override End Date** will need to be updated on the Employee Jobs Form (NBAJOBS).
- Within Employee Self-Service, the Faculty Load and Compensation module does not have a mechanism to enter or modify the Encumbrance Override End Date. Therefore, if a new or changed labor distribution requires an Encumbrance Override End Date, the record will need to be updated once it has been applied to NBAJOBS.

Two situations may require manual entry to the job after records have been uploaded.

- If a change is made to an existing fund, with an associated Encumbrance Override End Date, the date will be removed and no Encumbrance Override End Date will be uploaded in the new record on NBAJOBS.
- If a new FOAPAL record is created with a grant related fund, no Encumbrance Override End Date will be uploaded into the new record on NBAJOBS.



# A Encumbrance Calculation Examples

---

All examples below pertain to System-Calculated types of job assignments using the Encumbrance Recast Method.

## Example 1—Multiple Year Projection With Payroll Calendar Limitation

---

The fiscal year is 7/1/2007 to 6/30/2008. An employee is appointed to a position as of 7/1/2007, paid on a monthly calendar, the annual salary is \$60,000 to one FOAPAL with a grant related fund, and the Assign Salary is \$5,000.

The grant period runs for four years from 7/1/07 to 6/30/2011. However, the payroll calendar rules have only been set up through 6/30/2010 for the employee's Pay ID.

NBPENCM is processed with a Recast Date of 7/1/2007. The calculation determines that, as of the Recast Date, the current encumbrance of the job is \$60,000 (Assign Salary x Number of Pays left = \$5,000 x 12). The process also determines that the future encumbrance of the job is \$120,000 (Assign Salary x Number of Pays left = \$5,000 x 24).

The grant period should allow for another 12 number of pays through 6/30/2011, but since the payroll calendar stops at 6/30/2010, the number of pays have been limited to that date.

## Example 2—Multiple Year Projection With a Change in the Labor Distribution During the Active Fiscal Year

---

The fiscal year is 7/1/2007 to 6/30/2008.

An employee is appointed to a position as of 7/1/2007, paid on a monthly calendar, the annual salary is \$60,000 to one FOAPAL with an administrative fund, and the Assign Salary is \$5,000.

The employee is assigned to work under a grant effective 3/1/2008. Therefore, a labor distribution change is entered effective 3/1/2008 moving from an administrative fund to a grant related fund. The grant period runs for three years from 10/1/07 to 9/30/2010.

Effective Date	FOAPAL
01-JUL-2007	1110-14301-6113-10 100%
01-MAR-2008	2111-14301-6113-10 100%

NBPENCM is processed with a Recast Date of 2/1/2008.

The calculation determines that, as of the Recast Date, the 7/1/2007 FOAPAL has a current encumbrance amount of \$5,000 (Assign Salary x Number of Pays left = \$5,000 x 1). The process also determines that the 3/1/2008 FOAPAL has a current encumbrance amount of \$20,000 (Assign Salary x Number of Pays left = \$5,000 x 4), and a future encumbrance of \$135,000 (Assign Salary x Number of Pays left = \$5,000 x 27).

## Example 3—Multiple Year Projection With an Encumbrance Override End Date

The fiscal year is 7/1/2007 to 6/30/2008.

An employee is appointed to a position as of 10/1/2007, paid on a monthly calendar, the annual salary is \$60,000 to one FOAPAL with a grant related fund, and the Assign Salary is \$5,000.

The grant period runs for five years from 10/1/07 to 9/30/2012. However, an Encumbrance Override End Date of 9/30/2009 has been entered on NBAJOBS to limit the future encumbrance calculation.

NBPENCM is processed with a Recast Date of 10/1/2007.

The calculation determines that, as of the Recast Date, the current encumbrance of the job is \$45,000 (Assign Salary x Number of Pays left = \$5,000 x 9). The process also determines that the future encumbrance of the job is \$75,000 (Assign Salary x Number of Pays left = \$5,000 x 15).

The grant period allows for another 36 number of pays through 9/30/2012, but since an Encumbrance Override End Date of 9/30/2009 was entered, the number of pays have been limited to that date.

## Example 4—Projecting Contract Dates into Future Years

---

The fiscal year is 7/1/2007 to 6/30/2008.

An employee is appointed to a position as of 9/1/2007 with a deferred pay schedule and Contract Dates (9/1/2007 to 5/31/2008). They are paid on a monthly calendar, the annual salary is \$60,000 to one FOAPAL with a grant related fund, and the Assign Salary is \$5,000.

The grant period runs for three years from 9/1/07 to 8/31/2010. However, the encumbrance calculations will be limited by the Contract Dates and projected into the future using the same month and day, but advancing the year.

NBPENCM is processed with a Recast Date of 9/1/2007. The calculation determines that, as of the Recast Date, the current encumbrance of the job is \$45,000 (Assign Salary x Number of Pays left = \$5,000 x 9). The process also determines that the future encumbrance of the job is \$90,000 (Assign Salary x Number of Pays left = \$5,000 x 18).

## Example 5—Multiple Year Projection with Multiple Labor Distribution FOAPALS

---

The fiscal year is 7/1/2007 to 6/30/2008.

An employee is appointed to a position as of 9/1/2007, paid on a monthly calendar, the annual salary is \$60,000 and the Assign Salary is \$5,000. The labor distribution is assigned to one administrative fund at 66.67% and one grant related fund at 33.33%:

Effective Date	FOAPAL
01-SEP-2007	1110-14301-6113-10 66.67%
	2111-14301-6113-10 33.33%

The grant period runs for three years from 9/1/07 to 8/31/2010.

NBPENCM is processed with a Recast Date of 9/1/2007. The calculation determines that, as of the Recast Date, the current encumbrance of the job is \$50,000 (Assign Salary x Number of Pays left = \$5,000 x 10). The process also determines that the future encumbrance of the job as \$43,329 [(Assign Salary x Number of Pays left) x Grant FOAPAL% = \$5,000 x 26)].

The current encumbrance amount is multiplied by the labor distribution percentage to obtain the amount for the specific FOAPALs:

Administrative -  $\$50,000 \times 66.67\% = \$33,335.00$

Grant related -  $\$50,000 \times 33.33\% = \$16,665.00$

However, the future encumbrance amount is only multiplied by the labor distribution percentage that applies to the grant related fund, to obtain the amount for the specific FOAPALs:

Grant related:  $\$130,000 \times 33.33\% = \$43,329.00$

## Example 6—Multiple Year Projection With Fringe Chargeback

---

The fiscal year is 7/1/2007 to 6/30/2008.

An employee is appointed to a position as of 7/1/2007, paid on a monthly calendar, the annual salary is \$60,000 to one FOAPAL with a grant related fund, and the Assign Salary is \$5,000.

The grant period runs for three years from 7/1/07 to 6/30/2010.

NBPENCM is processed with a Recast Date of 7/1/2007. The calculation determines that, as of the Recast Date, the current encumbrance of the job is \$60,000 (Assign Salary x Number of Pays left = \$5,000 x 12). The process also determines that the future encumbrance of the job is \$120,000 (Assign Salary x Number of Pays left = \$5,000 x 24).

The current encumbrance amount is multiplied by the Fringe Chargeback percentages on NTRFBLD to obtain the amount for the specific labor distribution:

$\$60,000 \times 7.50\% = \$4,500$  Fringe Encumbrance

$\$60,000 \times 2.50\% = \$1,500$  Fringe Residual Encumbrance

The future encumbrance amount that applies to the grant related fund is multiplied by the Fringe Chargeback percentages on NTRFBLD to obtain the amount for the specific labor distribution:

$\$120,000 \times 7.50\% = \$9,000$  Fringe Encumbrance

$\$120,000 \times 2.50\% = \$3,000$  Fringe Residual Encumbrance

## Example 7—Multiple Year Projection Using a Work Schedule

When calculating an encumbrance amount using a Work Schedule, the schedule is projected through the entire year counting every day, Monday through Sunday, unless otherwise ended or changed. Pay period and salary indicators are not taken into account when using a Work Schedule. If a change to the contract dates, rate of pay, Work Schedule or labor distribution occurs, a separate calculation must be made for each period. If a new effective date or change occurs on any day other than the first day of the Work Schedule, the calculation will add the extra hours for the entire week that includes the date of the change. Any remaining week of the Work Schedule will be added to the next effective dated span.

Consider a work schedule that encompasses 14 days total with a total of 40 hours (four 10 hour days) within each 7 day period as shown below.

<b>Days</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>Hours</b>	0	10	10	10	10	0	0	0	10	10	10	10	0	0

The system will count:

- The maximum days in the Work Schedule. In our example, 14 maximum days.
- The total hours in the Work Schedule. In our example, eight 10 hour days would equal 80 total hours.
- The number of days within the labor distribution effective dates. Days represents every day in the Work Schedule, whether hours worked or not, i.e., usually 365 days in the year.

The formula for encumbrance calculation is:

Take	[Labor Distribution days / maximum days in Work Schedule (truncated to 0 decimals)]
Multiply by	[Total hours in Work Schedule (truncated to 0 decimals)]
Plus	Additional hours to complete partial work weeks
Multiply by	Regular Rate of Pay
Multiply by	Multiplication factor (1 if not using partial pay)
Equals	Encumbrance amount

The fiscal year is 7/1/2007 to 6/30/2008. An employee is appointed to a position as of 7/1/2007 subject to a Work Schedule beginning on 7/1/2007. They are paid on a bi-weekly calendar; the annual salary is \$27,777.37 to one FOAPAL with a grant related fund, with an Assign Salary of \$1,068.36 and a Regular Rate of \$13.354505.

The grant period runs for two years from 6/1/07 to 5/31/2009.

NBPENCM is processed with a Recast Date of 7/1/2007. The calculation determines that, as of the Recast Date, the current encumbrance of the job is \$27,910.92 (based on the computations below). The process also determines that the future encumbrance of the job is \$25,640.65 (based on the computations below).

Using the formula to calculate the current encumbrance amount for fiscal year ending 6/30/2008:

Take	$366 / 14$ (truncated to 0 decimals) = 26.142857 (26 truncated) [Labor Distribution days / maximum days (truncated to 0 decimals)]
Multiply by	$26 \times 80$ hrs = 2080 hrs [Total hours in Work Schedule (truncated to 0 decimals)]
Plus	$2080$ hrs + 10 hrs = 2090 total hours (February 29th will leave one additional day at the end of the 2007-2008 fiscal year) Additional hours to complete partial work weeks
Multiply by	$2090$ hrs x \$13.354505 = \$27,910.92 Regular Rate of Pay
Multiply by	$\$27,910.92 \times 1$ Multiplication factor (1 if not using partial pay)
Equals	\$27,910.92 Encumbrance amount

Use the above formula to calculate the future encumbrance amount for the next fiscal year ending 6/30/2009 (grant ends 5/31/2009):

Take	$335 / 14$ (truncated to 0 decimals) = 23.928571 (23 truncated) [Labor Distribution days / maximum days in Work Schedule (truncated to 0 decimals)]
Multiply by	$23 \times 80 = 1840$ [Total hours in Work Schedule (truncated to 0 decimals)]
Plus	$1840 + 80 = 1920$ total hours Additional hours to complete partial work weeks
Multiply by	$1920 \text{ hours} \times \$13.354505 = \$25,640.65$ Regular Rate of Pay
Multiply by	$\$25,640.65 \times 1$ Multiplication factor (1 if not using partial pay)
Equals	$\$25,640.65$ Encumbrance amount



# Troubleshooting

---



A few troubleshooting tips are listed below with regard to multi-year encumbering processing. Also refer to form and process information under the Changed Forms and New Process sections of the Release Guide.

## Employee Jobs Form (NBAJOBS)

---



1. The **Encumber Multi Year Labor** check box is not reflecting the correct from the Finance Research Accounting Fund Maintenance Form (FRMFUND).

Check the following:

- 1.1. Find the Effective Dated labor distribution record.
- 1.2. Is the **Last Calculated Date** populated?
  - 1.2.1. If yes, what is the date?
  - 1.2.1. If no, what is the system date?

Go to the next step.

- 1.3. Access the Research Fund Inquiry Form (FRIFUND).
- 1.4. Query and search for the Fund Code and Research Accounting Fund with an Effective Date that is one day after the Last Calculated Date (or System Date).

Example, If the date is 23-JAN-2008, enter an Effective Date query as <24-JAN-2008.

The form displays all the FRMFUND Effective-dated records that are less than the entered query date.

- 1.5. Review and identify the Encumber Multi Year Labor value displayed on NBAJOBS.



2. The **Budget Start Date** is not reflecting the correct value from Banner Finance.

2.1. On NBAJOBS, find the Effective Dated labor distribution record.

2.2. What is the field label for the Start Date; **Budget** or **Project**?

If Project, then there is no Budget Start Date on FRMFUND and the FRAGRNT value is being used.

2.3. Is the **Last Calculated Date** populated?

2.3.1. If yes, what is the date?

2.3.1. If no, what is the system date?

Go to the next step.

2.4. Access the Research Fund Inquiry Form (FRIFUND).

2.5. Query and search for the Fund Code and Research Accounting Fund with an Effective Date that is one day after the Last Calculated Date (or System Date).

Example, If the date is 23-JAN-2008, enter an Effective Date query as <24-JAN-2008.

The form displays all the FRMFUND Effective-dated records that are less than the entered query date.

2.5.1. If the Budget Start Date is populated, it should display on NBAJOBS.

2.5.2. If there is no Budget Period Start Date, review the queried records for a Project Start Date.

2.6. If both, the Budget Period and Project Start Dates are null, then no date is displayed on NBAJOBS.

3. The **Budget End Date** is not reflecting the correct value from Banner Finance.

3.1. On NBAJOBS, find the effective-dated labor distribution record.

3.2. What is the field label for the End Date; **Budget**, **Project** or **Fund Termination**?

3.2.1. If Project, then there is no Budget End Date on FRMFUND and the FRAGRNT value is being used. FRAGRNT is not effective-dated.

3.2.2. If it is Fund Termination, then the Fund has been terminated prior to the Budget or Project End Date.

3.3. Is the **Last Calculated Date** populated?

3.3.1. If yes, what is the date?

**3.3.2.** If no, what is the System Date?

Go to the next step.

**3.4.** Access the Research Fund Inquiry Form (FRIFUND).

**3.5.** Query and search for the Fund Code and Research Accounting Fund with an Effective Date that is one day after the Last Calculated Date (or System Date).

Example, If the date is 23-JAN-2008, enter an Effective Date query as <24-JAN-2008.

**3.6.** If all, i.e., the Budget Period Dates, the Project Start Date and the Fund Termination Date are null or beyond the Active fiscal year, then no date is displayed on NBAJOBS.

**4.** You enter an Encumbrance Override End Date, but don't see it on NBAJOBS.

The Encumbrance Override End Date is associated with a specific Job Labor Distribution Effective Date for a specific Fund. There may be multiple Job Labor Distribution Effective Dates, some with an Encumbrance Override End Date and some without an Encumbrance Override End Date.

Do the following:

- Make sure you are looking at the correct Job Labor Distribution Effective Date.
- Make sure the cursor is on the correct FOAPAL record.

If the same Fund is used on different FOAPAL lines within the same Effective Date, the Encumbrance Override End Date must be the same.

If an Encumbrance Override End Date exists earlier than the Budget/Project End Date or Fund Termination Date, the encumbrance calculation will use it regardless of any FRMFUND, FRAGRNT or FTMFUND date.

**5.** The Base Job is not displaying any Future Encumbrance amounts.

**5.1.** Review the Job Detail Effective-dated records within the Active fiscal year. What are the dates?

**5.2.** Review the Job Labor Distribution Effective-dated records within the Active fiscal year. What are the Funds used that may be identified to encumber multi-year?

**5.3.** Find the FRMFUND Effective Dated record for any Fund identified above that is less than or equal to the Job Detail Effective Date(s) noted above.

Alternatively, query the FRIFUND form using the above described date query functionality.

- 5.4. The **Encumber Multi Year Labor** indicator is the value displayed on NBAJOBS.

## Encumbrance Maintenance Process (NBPENCM)

---

6. No future encumbrance amounts are being calculated by the NBPENCM process.
  - 6.1. What is the **Recast Date** being used?
  - 6.2. Find the FRMFUND record for the Fund(s) that is less than or equal to the Recast Date.

Alternatively, query the FRIFUND form using the above described date query functionality.
  - 6.3. The value of the Encumber Multi Year Labor indicator is used to determine if multiple year encumbrance calculations will occur.
7. The encumbrance calculation by the NBPENCM process does not appear correct.
  - 7.1. Review the logic used in the calculation for Begin and End dates by the NBPENCM process.
  - 7.2. Review the NBIJLHS records.
    - 7.2.1. Place cursor on the correct Job Labor Distribution Changes Effective Date.
    - 7.2.2. Select the correct FOAPAL in the Job Labor Distribution Detail block.
    - 7.2.3. Navigate to the Salary Transaction Detail tab.
    - 7.2.4. Review the End Date Reason for each entry.
8. A future Jobs Labor Distribution record is not being picked up by the NBPENCM process in the calculation.

Only Job Detail and Labor Distribution Effective-dated records on NBAJOBS within the Active fiscal year will be processed.

# Transactions Interfaced to Banner Finance

---

If salary and fringe encumbrances have been calculated and fed to Banner Finance with the Feed Future Encumbrance to Finance indicator set to *Yes* (checked), and the indicator on the NTRINST form is re-set to *No* (unchecked), no backouts or adjustments of previously fed future encumbrance amounts will occur. Conversely, if the **Feed Future Encumbrance to Finance** indicator is set to *No* when records are fed to Banner Finance, and the indicator on the NTRINST form is re-set to *Yes*, future amounts will not be recalculated to post to Banner Finance.

 **Warning**

This is an area of no return. You cannot change the NTRINST Feed Future Encumbrance to Finance indicator after the initial processing of a new fiscal year and have future encumbrances processed properly. ■

9. No records were interfaced for Future encumbrance amounts.

9.1. Review the **Feed Future Encumbrance to Finance** indicator on NTRINST.

9.1.1. If the indicator is unchecked (No), only the current fiscal year encumbrance amount will be fed to Finance.

9.1.2. If the indicator is checked (Yes), the current fiscal year and future fiscal year encumbrance amounts will be fed to Finance.



4 Country View Road  
Malvern, Pennsylvania 19355  
United States of America  
[www.sungardhe.com](http://www.sungardhe.com)