
Accrual Verification Handbook

Verifying Daily Accruals for Your Share and Loan Products

INTRODUCTION

One of the routine practices that is critical to a credit union's due diligence and member satisfaction is the periodic verification of dividend and interest accruals on savings and loan products. Not only is it easier and less costly to fix a problem with an incorrect rate or calculation parameter before dividends are paid or loan payments made, but it is also an important exercise to ensure that the calculation process is consistently giving you the results you expect.

Regular verification can help prevent potential problems (and subsequent member adjustments) through:

- Verifying normal CU*BASE calculation routines
- Reviewing software changes, enhancements, and new releases
- Working with auditors and regulators on dividend verifications
- Verifying your own rate maintenance and member account management

Admittedly, this verification process is not a simple one, especially for share products. Calculation parameters, payment frequency, minimum balances, split rates, and other product differences can make it tricky to be sure your manual calculations match how the CU*BASE system calculates the accruals each day. Even getting the rounding right can be a challenge!

The **CU*BASE Share Accrual Calculator** and **Loan Interest Calculator** inquiry tools were designed to make the validation of share dividends and loan interest much easier and more accurate.

These inquiry tools should be used to verify that daily dividend and interest calculations are what you want them to be. The Calculator is independent of the accruals done during daily processing; it will not show what *actually* happened with daily accrual, but rather serves as a "check and balance" for keeping an eye on the calculation process. If the Calculator shows a

Revision date: October 24, 2008

For an updated copy of this booklet, check out the Reference Materials page of our website:
http://www.cuanswers.com/client_reference.php
CU*BASE® is a registered trademark of CU*Answers, Inc

different accrual amount for the current period than is actually recorded on the account itself, steps should be taken to investigate the reason and make sure everything is set up correctly, before paying incorrect dividends to your members or handling a loan payoff incorrectly.

CONTENTS

<u>CREDIT UNION RESPONSIBILITIES: SHARE ACCRUALS</u>	<u>3</u>
WHAT SHOULD BE VERIFIED BEFORE DIVIDENDS ARE PAID?	3
HOW DO I GET A GOOD SAMPLING OF ACCOUNTS?	3
HOW OFTEN SHOULD VERIFICATIONS BE DONE?	4
<u>USING THE SHARE DIVIDEND ACCRUAL CALCULATOR</u>	<u>5</u>
<u>CREDIT UNION RESPONSIBILITIES: LOAN ACCRUALS</u>	<u>8</u>
WHAT SHOULD BE VERIFIED?	8
HOW DO I GET A GOOD SAMPLING OF ACCOUNTS?	8
HOW OFTEN SHOULD VERIFICATIONS BE DONE?	8
<u>USING THE LOAN INTEREST ACCRUAL CALCULATOR</u>	<u>10</u>

CREDIT UNION RESPONSIBILITIES: SHARE ACCRUALS

WHAT SHOULD BE VERIFIED BEFORE DIVIDENDS ARE PAID?

In order to keep from having to test an account for every individual share *product* you offer, it will be helpful to compile a list of products with unique dividend calculation and payment characteristics. For example, are dividends calculated using the Simple Daily or Average Daily Balance method? Are minimum balances used? Is the rate split? Plateau or non-plateau?

HINT: To help gather this list, print a copy of the Share Dividend Configuration Report (available on menu MNCNFX) and use the report to group products by similar parameters.

Once a list of unique characteristics is established, choose one product that meets all of the criteria for each grouping, and use this list when pulling the list of sample accounts. This product list should remain the same until a new product or policy is added.

HOW DO I GET A GOOD SAMPLING OF ACCOUNTS?

Once you've decided on the unique product types to be verified, the next step is to gather a list of sample accounts that represent each group. Account balances and activity volume will also play a role in selecting the sample cases.

For example, if one of the categories has a minimum balance requirement, select an account that has a balance below the minimum, and one that is above the minimum. For split rate products, it will require several sample accounts in order to get a separate account that falls into each of the rate tiers.

Using the Query options located on menu MNQUERY, select accounts with the product characteristics for each category (Dividend Application, Calc. Type, Payment Frequency, etc.), as well as any needed balance ranges. For the sake of consistency, keep this list of the test accounts and use them every time verification is done. Depending on the number of product categories you have, you may need 10 or 20 different accounts to satisfy all of the test scenarios to be verified.

Because account balances change, it may be necessary to update the account list from time to time to be sure all the needed verifications are covered.

HOW OFTEN SHOULD VERIFICATIONS BE DONE?

Your verification routine should be done every period before dividends are paid, using the dividend payment frequency as a guide. In other words, products that pay monthly should be verified once a month before the dividend pay date at the end of the month. Products paid quarterly can also be verified each month, but should be checked at least once prior to the end of the quarter when dividends are paid.

USING THE SHARE DIVIDEND ACCRUAL CALCULATOR

Member Account Inquiry

Account # 2200 MARY A MEMBER Date opened Mar 19, 1983
 SSM/TIN [] Joint Owners Beneficiaries G/L account 901.00-01

Account type 000 REGULAR SAVINGS
 Div appl SH REGULAR SAVINGS

Outstanding accrued club benefits 0.00

Current balance 18,132.47 Annual b/u withholding 0.00
 - par value 5.00 Period average balance 16,951.83
 - secured 1,000.00 Period minimum balance 16,614.16
 - uncollected 300.00
 = Net available 16,827.47 YTD club benefits 0.00

1st date negative 00000000

Dividend Information			
Quarter 1	12.74	Total	92.74
2	0.00	Accrued	9.70
3	0.00		
4	80.00		

Transaction inquiry date Oct 01, 2008 [MMDDYY]

To view the Accrual Calculator, use **F11=Div Calc** on the Member Account Inquiry screen for regular share products. The following screen will appear:

F11=Div Calc (Share Accrual Calculator)

Account 2200-000 Account open date Mar 19, 1983
 Dividend appl SH REGULAR SAVINGS Dividend period start Jan 2008 [MMYYYY]
 Current accrued 97.00 Dividend period end Jan 2008 [MMYYYY]
 Accrued as of Feb 29, 2008

Date	Balance	Amount for Calc	Div Rate	Daily Rate	Daily Accrual	Accumulated
Jan 01, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	0.171
Jan 02, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	0.342
Jan 03, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	0.513
Jan 04, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	0.684
Jan 05, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	0.855
Jan 06, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	1.026
Jan 07, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	1.197
Jan 08, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	1.368
Jan 09, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	1.539
Jan 10, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	1.710
Jan 11, 2008	17,896.63	17,896.63	0.35	0.0000956	0.171	1.881

Computed accrual 5.301

Use F1=Calc Details to see how accruals are calculated for this product. (See the sample screen on the following page.)

The Share Accrual Calculator displays a “what if” calculation showing how each day’s accrual is calculated using the current configuration parameters. **It is not a historical representation of what actually happened with daily accruals for any given period**, but rather serves as a “check and balance” for keeping an eye on how daily dividend amounts are calculated.

The top portion of the screen on the previous page shows current information about the account, and allows you to enter a dividend period to be verified. The bottom portion of the screen is the calculated sample, showing the daily accrual amount for each day in the period, with a cumulative total for the entire period. The calculator uses transaction history to determine the member’s balance as of the time accruals were calculated on each day in the period.

*For complete details on using this screen, including a discussion about split and plateau rates, refer to CU*BASE GOLD Online Help (click the help link [Learn About This Feature](#) while working in this screen).*

F1-Calc Details

The screenshot shows the 'Share Accrual Calculator' window. On the left is a photo of a woman. The main area is divided into two sections: parameters and a calculation table.

Account	2200-000	Current balance	18,132.47
Dividend Appl	SH REGULAR SAVINGS	Current accrual	9.708
Dividends are accrued at	END-OF-DAY	Base dividend rate	0.25
Dividends are paid at	END-OF-DAY	Lvl 1:>Bal=Rate	9,999.99 0.35
Calculation type	SIMPLE	Lvl 2:>Bal=Rate	24,999.99 0.40
Payment frequency	QUARTERLY	Lvl 3:>Bal=Rate	99,999.98 0.45
Minimum balance to accrue	100.00	Lvl 4:>Bal=Rate	0.00 0.00
Minimum balance penalty	X	Lvl 5:>Bal=Rate	0.00 0.00
Plateau	NO	Lvl 6:>Bal=Rate	0.00 0.00

Rate	/	# of Days in the Year	=	Daily Rate (not rounded)
.00350	/	366	=	.0000956

Amount for Calculation	*	Daily Rate	=	Daily Interest (rounded)
Base 0.00	*	.00000000	=	0.000
Level 1 17,896.63	*	.0000956	=	0.171
Level 2 0.00	*	.00000000	=	0.000
Level 3 0.00	*	.00000000	=	0.000
Level 4 0.00	*	.00000000	=	0.000
Level 5 0.00	*	.00000000	=	0.000
Level 6 0.00	*	.00000000	=	0.000
Daily total				0.171

The top half of this screen shows the parameters currently used by CU*BASE to calculate accruals for this share product. These are taken directly from Dividend Application configuration. The bottom half of the screen shows a sample calculation for one day, to demonstrate how the mathematical calculations are done. Use the formulas shown when replicating the calculation manually for verification.

*For more details, refer to CU*BASE GOLD Online Help (click the help link while working in this screen).* [Learn About This Feature](#)

Report Sample

The following report will be sent to your default printer when F6-Print is used on the main Accrual Calculator screen (shown on Page 5). (The report will begin printing after the Calculator screen has been exited.)

10/19/99 15:37.19		CU*BASE DEMONSTRATION CREDIT UNION SHARE ACCRUAL CALCULATOR				IDIVCA	PAGE 1 DAWNM
Account.....:	3968-081	Account Open Date.....:	3/18/96				
Dividend Appl...:	SD MERIT CHECKING	Div Prd Start MM YYYY.:	10 1999				
Current Accrued.:	3.046	Div Prd End MM YYYY.:	10 1999				
Accrued as of ..:	10/18/99						
Date	Balance	Amt for Calc	Div Rate	Daily Rate	Daily Accrual	Accumulated Accrual	
10/01/99	3667.86	3667.86	2.500	.00006849	.251	.251	
10/02/99	3667.86	3667.86	2.500	.00006849	.251	.502	
10/03/99	3667.86	3667.86	2.500	.00006849	.251	.753	
10/04/99	3667.86	3667.86	2.500	.00006849	.251	1.004	
10/05/99	3667.86	3667.86	2.500	.00006849	.251	1.255	
10/06/99	3034.00	3034.00	2.500	.00006849	.208	1.463	
10/07/99	3034.00	3034.00	2.500	.00006849	.208	1.671	
10/08/99	1368.01	1368.01	2.500	.00006849	.094	1.765	
10/09/99	1368.01	1368.01	2.500	.00006849	.094	1.859	
10/10/99	1368.01	1368.01	2.500	.00006849	.094	1.953	
10/11/99	1248.01	1248.01	2.500	.00006849	.085	2.038	
10/12/99	1227.41	1227.41	2.500	.00006849	.084	2.122	
10/13/99	1227.41	1227.41	2.500	.00006849	.084	2.206	
10/14/99	1227.41	1227.41	2.500	.00006849	.084	2.290	
10/15/99	2765.44	2765.44	2.500	.00006849	.189	2.479	
10/16/99	2765.44	2765.44	2.500	.00006849	.189	2.668	
10/17/99	2765.44	2765.44	2.500	.00006849	.189	2.857	
10/18/99	2765.44	2765.44	2.500	.00006849	.189	3.046	
Computed Accrual:					3.046		

CREDIT UNION RESPONSIBILITIES: LOAN ACCRUALS

WHAT SHOULD BE VERIFIED?

IMPORTANT: This calculator has been designed to use a **daily** interest calculation only. Only loans that use interest calculation type “0” (365) or “4” (the new 360/365 daily interest calc. type) can be verified using this inquiry. This tool cannot be used to verify mortgage loans.

For most credit unions, it will not be necessary to set up special tests for individual loan categories, since most loans other than mortgages use the 365-day interest calculation method. If your credit union begins using the 360/365 daily interest calculation type (where a 360-day year is always used to calculate the daily *per diem*), you will need to validate these loan categories separately. The emphasis here is to verify a loan income G/L account by testing specific member loans.

For example, say you observe that loan income account 111.01 (Used Automobiles) averages \$1,100 per day during the month of February. The average outstanding loan balances during that month were \$361,000, working out to an average rate of 9.125%.

From the standpoint of a “rule of thumb,” everything seems to be in line. But in some cases an auditor or examiner may wish to check a specific loan to make sure it is working to the penny for every loan.

HOW DO I GET A GOOD SAMPLING OF ACCOUNTS?

Unlike share balances where you have different terms and methods of accrual, the number one focus for loans is making sure that there is a good range of outstanding balances and multiple rates within each calc. type (0 and 4 only).

Therefore, you might create a Query to pull loans based on balance groups (for example, loans under \$10,000, between \$10,000-\$50,000, and greater than \$50,000), and then select loans from these groups with different interest rates. (Remember if you are verifying your “rule of thumb” against the loan income G/L, choose loans that are tied to that G/L account.)

Because account balances change and loans will be paid off, it will be necessary to update the account list from time to time to be sure all the needed verifications are covered.

HOW OFTEN SHOULD VERIFICATIONS BE DONE?

Loan verifications should be done at least once per quarter, as well as after any CU*BASE change to accrual programs or other major loan servicing

releases. Your comfort zone for verifications will be according to the complexity of your loan offerings, your Supervisor Committee, and your examination schedules.

The Loan Interest Accrual Calculator displays a “what if” calculation showing how each day’s interest accrual is calculated using the current configuration parameters. **It is not a historical representation of what actually happened with daily interest accruals for any given period**, but rather serves as “check and balance” for keeping an eye on how daily interest due amounts are calculated.

The top portion of the screen shows current information about the account. The bottom portion of the screen is the calculated sample. By default, the calculation starts as of the day after the last payment was made, and continues through the current date (most recent accrual). A cumulative total is shown for the entire period since the last payment. Use the fields at the top of the screen to change the date range shown.

For more details, refer to CU*BASE GOLD Online Help (click the help link while working in this screen). [Learn About This Feature](#)

F1-Calc Details

The screenshot shows the 'Interest Accrual Calculator' window. At the top, it displays account information: Account 1075-600, Loan category 01 SECURED CLOSED END, Account open date Mar 06, 2006, Current interest 0.00, and Accrued as of Feb 29, 2008. It also shows Start date Jan 19, 2008 and End date Jan 30, 2008. Below this is a table with columns: Date, Balance, Amt for Calc, Rate, Daily Rate, Daily Interest, and Accumulated Interest. The table lists daily calculations from Jan 19, 2008 to Jan 29, 2008. At the bottom, it shows 'Computed accrual' as 117.48. A 'Calc Details' button is visible on the left side of the interface.

Date	Balance	Amt for Calc	Rate	Daily Rate	Daily Interest	Accumulated Interest
Jan 19, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	9.79
Jan 20, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	19.58
Jan 21, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	29.37
Jan 22, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	39.16
Jan 23, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	48.95
Jan 24, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	58.74
Jan 25, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	68.53
Jan 26, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	78.32
Jan 27, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	88.11
Jan 28, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	97.90
Jan 29, 2008	47,617.93	47,617.93	7.525	0.000205601	9.79	107.69

The top half of this screen shows the parameters used by CU*BASE to calculate interest accruals for this loan account. These are taken from the account and the loan product configuration.

The bottom half of the screen shows a sample calculation for one day, to demonstrate how the mathematical calculations are done. Use the formulas shown when replicating the calculation manually for verification.

For more details, refer to CU*BASE GOLD Online Help (click the help link while working in this screen). [Learn About This Feature](#)

Report Sample

The following report will be sent to your default printer when F6-Print is used on the main Interest Accrual Calculator screen (shown on Page 10).
 (The report will begin printing after the Calculator screen has been exited.)

3/09/00 12:02.33		CU*BASE TEST CREDIT UNION LOAN INTEREST CALCULATOR				LINTCA	PAGE 1 DAWNM
Account.....:	147-701	Account Open Date.....:	7/09/99				
Loan Category ..:	01 CONSUMER LOAN	Int. Start MM DD YYYY.:	02/13/2000				
Current Interest:	8.84	Int End MM DD YYYY.:	03/09/2000				
Accrued as of ..:	3/09/00						
Date	Balance	Amt for Calc	Int Rate	Daily Rate	Daily Accrual	Accumulated Accrual	
2/13/00	1604.31	1604.31	7.750	.00002117	.34	.34	
2/14/00	1604.31	1604.31	7.750	.00002117	.34	.68	
2/15/00	1604.31	1604.31	7.750	.00002117	.34	1.02	
2/16/00	1604.31	1604.31	7.750	.00002117	.34	1.36	
2/17/00	1604.31	1604.31	7.750	.00002117	.34	1.70	
2/18/00	1604.31	1604.31	7.750	.00002117	.34	2.04	
2/19/00	1604.31	1604.31	7.750	.00002117	.34	2.38	
2/20/00	1604.31	1604.31	7.750	.00002117	.34	2.72	
2/21/00	1604.31	1604.31	7.750	.00002117	.34	3.06	
2/22/00	1604.31	1604.31	7.750	.00002117	.34	3.40	
2/23/00	1604.31	1604.31	7.750	.00002117	.34	3.74	
2/24/00	1604.31	1604.31	7.750	.00002117	.34	4.08	
2/25/00	1604.31	1604.31	7.750	.00002117	.34	4.42	
2/26/00	1604.31	1604.31	7.750	.00002117	.34	4.76	
2/27/00	1604.31	1604.31	7.750	.00002117	.34	5.10	
2/28/00	1604.31	1604.31	7.750	.00002117	.34	5.44	
2/29/00	1604.31	1604.31	7.750	.00002117	.34	5.78	
3/01/00	1604.31	1604.31	7.750	.00002117	.34	6.12	
3/02/00	1604.31	1604.31	7.750	.00002117	.34	6.46	
3/03/00	1604.31	1604.31	7.750	.00002117	.34	6.80	
3/04/00	1604.31	1604.31	7.750	.00002117	.34	7.14	
3/05/00	1604.31	1604.31	7.750	.00002117	.34	7.48	
3/06/00	1604.31	1604.31	7.750	.00002117	.34	7.82	
3/07/00	1604.31	1604.31	7.750	.00002117	.34	8.16	
3/08/00	1604.31	1604.31	7.750	.00002117	.34	8.50	
3/09/00	1604.31	1604.31	7.750	.00002117	.34	8.84	
Computed Accrual:					8.84		