
NET BALANCE CALCULATIONS

INTRODUCTION

OVERVIEW

The broad and fundamental purpose of the **NET BALANCE** calculation is to explain precisely the amount of cash loaned to the borrower and to other third parties on behalf of the borrower which exceeded the collections at time of charge-off. In other words, when a pre-computed loan transaction is deemed to be either an Active yet Non-paying asset, or a closed account charged to profit and loss, what is the exact dollar loss (gain) of that account on this business in either stage of existence?

DETAILS

The **NET BALANCE** loss (gain) figure represents the pure CASH costs of one loan. Opportunity costs, interest costs of the cash, labor costs to collect the account, legal fees incurred, repossession fees paid and every other cost consideration is NOT a variable in the equation of the **NET BALANCE**. It simply answers this fundamental accounting question, "At either of the final 2 stages of account settlement, Active Ineligibles or Charged-Off, according to the total cash outflows on a loan versus the total cash inflows received by us for such loan as strictly defined in the Truth-In-Lending Disclosure, what dollar amount was lost or gained?"

That final dollar amount is what we term the **NET BALANCE** of an account. It is the final net loss/gain for that one specific loan at the time of final GAAP settlement.

CAUSE FOR A NET BALANCE CALCULATION

The **NET BALANCE** calculation is performed on accounts that are in either of 2 final conditions:

1. **NET BALANCE – ACTIVE.** First assigned when the account is Active and Open, yet in Ineligible Payment delinquency status and therefore subject to a charge off **NET BALANCE** settlement – How is the **NET BALANCE** calculated when the account is still open and active, yet considered an ineligible asset and under consideration for charging to Profit and Loss as a bad debt?
2. **NET BALANCE – CHARGE OFF.** Secondly assigned when an account is moved from #1 above (Active **NET BALANCE**) into our final Charged-off Profit & Loss **NET BALANCE** status – Is the **NET BALANCE** calculation modified due to the changing of account status and the charging off process? And if so, how is the calculation modified and why? *

* It is possible for an account to move directly into **NET BALANCE – CHARGE OFF** status without first having moved into the **NET BALANCE – ACTIVE** status. This transpires when account is flagged as a dead balance account and moves from a current, 30, 60, or paying 90 delinquency status.

DEFINITIONS OF TERMS

- A. **CASH:** Cash issued on behalf of customer as delimited by the Truth-In-Lending Agreement. Includes all loan proceeds, including those to the debtor and/or his other creditors.
- B. **REF-BAL:** balances carried forward from previous accounts.
- C. **FEES:** Cash paid to various agencies in service of the Truth-In-Lending Agreement. *Examples = Appraisal fee paid to real estate agency for asset appraisal, Title Registration paid to DMV for service of lien.*
- D. **INS-CAR:** Insurance Cash at Risk. Credit insurance premiums paid on behalf of the customer to an insurer which indemnifies the customer's loan balance, either gross or net, in case of death/disability/unemployment of the debtor(s) and/or damage/destruction to property used as collateral for the loan. More of the pre-computed premiums expire over the course of the loan as they are earned over time.
- E. **TOTAL PAR:** Total Principal At Risk is the sum of Cash + Ref_Bal + Fees + INS_CAR. Total outflow (principal cash) paid by the company on behalf of the customer. Maximum amount of potential loss can increase over the course of the loan if Agreement includes credit insurance premiums.
- F. **PRINCIPAL PAID:** Total payments reducing balance of the loan.

- G. **INTEREST EARNED:** Amount of PRINCIPAL PAID applied towards interest earnings as allowed by A) Actuarial formula; or B) Total Finance Charge less prepayment refund. All prepayment refund methods are determined by each governing state's consumer finance statutes.
- H. **INSURANCE EARNED:** Amount of PRINCIPAL PAID applied towards insurance earnings as calculated by total premiums less total refunds times company commission percentage.

TEST CASES - OVERVIEW

In the following 2 Test Cases, a **NET BALANCE** account will be tracked from its origination to its final charging off transaction. The exact same loan will be used in both examples. The 1st loan will be a first payment default, with no payments made to the account whatsoever. In the 2nd test case, the exact same loan will be used, however, principal payments will have been made by the customer. Both test cases show their effects on the **NET BALANCE**, demonstrated and explained by system reports as well as explanatory notes.

Again, the same loan (Customer called John Doe), and the same loan variables, will be used in both examples. The 2nd John Doe loan will have principal payment reductions of the balance, while the first will not. Each will be tracked from the original New Loan Report all the way to its charge off on the Charge-Off report. It is important to note that the state of Utah is being used for all insurance rates, refunds, and commissions.

JOHN DOE

Original Loan variables are as follows. Normal accounting entries are made according to the following amounts gathered from the 09/01/08 New Loan report:

LOAN DATE:	09/01/08
CASH TO CUSTOMER:	\$2,000.00
REFINANCED BALANCE:	\$1,000.00
ORIGINATION FEE:	\$500.00
RECORDING FEE:	\$25.00
INSURANCE:	\$174.90
LIFE - SINGLE LEVEL:	\$26.58
DISABILITY - 7-DAY SINGLE:	\$63.92
PROPERTY - SINGLE:	\$84.40
TERMS OF THE LOAN:	12 x \$351.65
APR:	54.44%
FINANCE CHARGE:	\$519.90
AMOUNT FINANCED:	\$3,199.90
GROSS LOAN:	\$4,219.80

NEW LOAN REPORT DATA:

DATE	ACCT	LAST.FIRST	TERM	GROSS	REF BALANCE	CASH	INS PREM	DOC FEE	ORIG FEE	OTH FEES	FIN CHRG	CPR	APR
09/01/08	D00002	DOE, J.	12	4,219.80	1,000.00	2,000.00	174.90	0.00	500.00	25.00	519.90	25.00	54.44
				4,219.80	1,000.00	2,000.00	174.90	0.00	500.00	25.00	519.90		

JOHN DOE - TEST CASE #1

NET BALANCE – ACTIVE

No payments are ever made to this account, therefore this account quickly moves into the **NET BALANCE – ACTIVE** account status. This movement is noticed at the office level on the Delinquency Report. Since John Doe #1 has made no payments on this loan, his account will move into this status when it falls 3 payments past due. That would be on December 1st. However, since the office transactions are entered into the general ledger at the end of each month, the end of the month dates will be used for all report generation.

JOHN DOE #1 NET BALANCE on 12/31/2008

On December 31st, when this account will be reported to the accounting office, it has now moved into the **NET BALANCE – ACTIVE** account status (See Page 5 for a copy of the Delinquency Report John Doe #1 – 12/08).

The current balance shows as \$4,219.80. The **NET BALANCE**, in parenthesis beside the current balance, shows as \$3,066.99. This dollar amount signifies that, as of **12/31/08**, this account has lost a bottom-line figure of \$3,066.99 in cash outflows for this office.

The formula for the calculation of all **NET BALANCE** accounts is as follows:

$$\textcircled{1} \text{ TOTAL PAR} = \text{CASH} + \text{REF_BAL} + \text{FEES} + \text{INS_CAR}$$

$$\textcircled{2} \text{ NET BALANCE} = \text{TOTAL PAR} - \text{PRINC_PAID} + \text{INTEREST_EARNED} + \text{INSURANCE EARNED}$$

Now let's fill in the specific loan numbers from the John Doe Loan #1 to show how the **NET BALANCE** of \$3,066.99 was attained. Beginning with the first calculation of the **TOTAL PAR** (Total Principal at Risk):

$$\textcircled{1} \text{ TOTAL PAR} = \text{CASH} + \text{REF_BAL} + \text{FEES} + \text{INS_CAR}$$

$$\text{TOTAL PAR} = 2,000 + 1,000 + 25.00 + 41.99$$

$$\text{TOTAL PAR} = 3,066.99$$

Why? Because:

$$\text{CASH} = 2,000$$

$$\text{REF_BAL} = 1,000$$

$$\text{FEES} = 25.00$$

$$\text{INS_CAR} = 41.99$$

$$\textcircled{3} \text{ INS_CAR} = \text{Ins_Life} + \text{Ins_Dis} + \text{Ins_Prop} + \text{Ins_VSI} + \text{Ins_IUI}$$

$$\circ \text{ Ins_Life} = (\text{Life Premium} - \text{Life Rebate}) \times (1 - \text{Life Commission})$$

$$\bullet \text{ Life Rebate} = (1 - \text{Pro Rata Factor}) \times \text{Life Premium}$$

- *Pro Rata Factor* = .333333333333 (4 months of 12)
 - *Life Rebate* = $(1 - .333333333333) \times 26.58 = 17.72$
- **Ins_Life** = $(26.58 - 17.72) \times (1 - .45) = 4.88$
- **Ins_Dis** = $(\text{Disability Premium} - \text{Disability Rebate}) \times (1 - \text{Disability Commission})$
 - *Disability Rebate* = *Rule of 78's Factor* \times *Disability Premium*
 - *Rule of 78's Factor* = .461538434 (4 months of 12)
 - *Disability Rebate* = .461538434 \times 63.92 = **29.50**
- **Ins_Dis** = $(63.92 - 29.50) \times (1 - .45) = 18.93$
- **Ins_Prop** = $(\text{Property Premium} - \text{Property Rebate}) \times (1 - \text{Property Commission})$
 - *Property Rebate* = *Rule of 78's Factor* \times *Property Premium*
 - *Rule of 78's Factor* = .461538434 (4 months of 12)
 - *Property Rebate* = .461538434 \times 84.40 = **38.95**
- **Ins_Prop** = $(84.40 - 38.95) \times (1 - .6) = 18.18$

③ $INS_CAR = 4.88 + 18.93 + 18.18 = \41.99

TOTAL PAR = 2,000 + 1,000 + 25.00 + 41.99

TOTAL PAR = 3,066.99

What does this say about this loan? It says that at this point in the course of this loan, this loan has cost \$3,066.99 in actual dollars. That's actual cash that went out the front door for this loan. **This is the total outflow at this point as well as the maximum loss on this account.** Now knowing the value of **TOTAL PAR**, let's see if those *outflows* were mitigated by any cash *inflows* back into the office.

Continuing on with the 2nd line of the **NET BALANCE** equation, consider the **PRINC_PAID** variable:

② **NET BALANCE = TOTAL PAR - PRINC_PAID + INTEREST_EARNED + INSURANCE EARNED**

NET BALANCE = 3,066.99 - 0

NET BALANCE = 3,066.99

Why? Because:

TOTAL PAR = 3,066.99

PRINC_PAID = 0

Since there were no principal payments made by the customer, there are no reductions to the **TOTAL PAR** variable. In test case #2, there will be principal payments made on the account and their impact on the **NET BALANCE** will be explained at that time. Let's now move to the final 2 variables in the formula.

The final step in the **NET BALANCE** formula involves taking a look at any *earnings* that might be calculated for this account. As part of the monthly P&L Financials preparation process, every account is analyzed to determine if there were any interest or insurance earnings. These calculations are one contributing variable to the gross profits of an office and **NET BALANCE** accounts are no exception. Consequently, we must determine the impact of any principal payments upon earnings at the end of each month after which the financial statements are prepared. Any principal payments in the current month on **NET BALANCE** accounts must be given back here in the **NET BALANCE** calculation.

In other words, **NET BALANCE** accounts are already being given credit for all principal payments. This was done in the step just reviewed above by reducing the amount of the **TOTAL PAR** by the amount of the **PRINC_PAID**. Every dollar of principal payments was subtracted from the **TOTAL PAR**. However, during the earnings calculations for the monthly financial statements, some of those *same PRINC_PAID dollars* might be additionally thrown into profits as interest or insurance earnings, doubling the impact for that part of the principal payment treated as earnings. That can't happen. So, the **NET BALANCE** calculation foresees what interest and/or insurance earnings this account will make at the accounting office during monthly processing, and gives those earnings back *now* to prevent double credit on the same dollars paid.

So, the final step in the **NET BALANCE** calculation is the adding back of any revenues generated by the earnings program. In the case of John Doe #1, there are no interest or insurance earnings since nothing has been paid. So, the final **NET BALANCE** on John Doe #1 Loan is:

② NET BALANCE = TOTAL PAR - PRINC_PAID + INTEREST_EARNED + INSURANCE EARNED

NET BALANCE = 3,066.99 + 0 + 0

Why? Because:

INTEREST EARNED = 0

INSURANCE EARNED = 0

NET BALANCE = \$3,066.99 as of 12/31/08

DELINQUENCY REPORT (Contractual)

Office #18

Delinquency cutoff date: 12/31/2008

Sorted by: Account number (Late Fees included)

Account types printed: All (30's not printed)

Rundate: 08/04/2008

Acct	Borrower	Loan Date	Gross	30's	60's	90's	90*	No-Pay		Last Paid	Pmt
D00002	DOE, JOHN	09/01/08	4,219.80					4,219.80	(3,066.99)	09/01/08	352
Outstanding:				0.00	0.00	0.00	0.00	4,219.80			
Accounts:				0	0	0	0	1			



But you might ask “Next month, will the **NET BALANCE** change or even increase? If so, how can more money be lost if nothing transpires on the account?”

Let’s take a look at the theory before looking at the numbers. We just showed that as of **12/31/08**, John Doe Loan #1 caused a loss equaling the dollar amount of **\$3,066.99**. This was in the form of ① cash to the customer, ② cash on behalf of the customer on a previous loan, ③ a \$25 recording fee, and ④ \$41.99 in insurance premiums paid to the insurance company after 4 months having elapsed.

JOHN DOE #1 NET BALANCE on 01/31/2009

So what happens to the **NET BALANCE** exactly one month from 12/31/08 if absolutely nothing transpires on this account? Does the **NET BALANCE** change as of **01/31/09**? You may already have figured out that the cost to the office **INCREASES** even when no activity transpires on this account. Why so? The simple reason is that more time has elapsed during which the insurance has remained in force. And since all insurance premiums are pre-paid fully to the insurance agency, and subsequent refunds on those premiums will be diminishing over time, less of those premiums will be available for a refund from the insurance company. Therefore, the passing of an additional month will increase the cost of the loan because the insurance premium refunds will be smaller. That is why the **NET BALANCE** on a stagnant account with insurance will **INCREASE** over time, all things being equal.

This is an easily understood occurrence. In actuality, the full costs of the insurance premiums are prepaid when the check is disbursed to the insurance company at the end of each month. The disbursement of the check for the insurer’s commission adds to the balance of **TOTAL PAR**. We have that money at risk at that moment. Those losses are only **reimbursed** to us when each loan pays out early and those premiums are refunded by the insurance company. Those prepaid premiums **return** to the office at that point, thereby reducing the prepaid expense. It is easy to see that the prepaid credit insurance is more fully amortized the closer the loan comes to maturity. Therefore, the refunds get smaller and smaller over the term of the loan. Each month moves the loan closer to maturity and a corresponding increase in **INS_CAR** due to the increased age of the loan.

Therefore, since all variables in the previous calculations on John Doe #1 do remain the same, the only variables that have changed are the **refunds** in the **INS_CAR**, insurance cash at risk. Here’s is how the rebates look one month later on **01/31/09**:

INS_CAR = \$50.24

$$\textcircled{3} \searrow \text{INS_CAR} = \text{Ins_Life} + \text{Ins_Dis} + \text{Ins_Prop} + \text{Ins_VSI} + \text{Ins_IUI}$$

- **Ins_Life** = $(\text{Life Premium} - \text{Life Rebate}) \times (1 - \text{Life Commission})$
 - $\text{Life Rebate} = (1 - \text{Pro Rata Factor}) \times \text{Life Premium}$
 - $\text{Pro Rata Factor} = .4166666666666666$ (5 months of 12)
 - $\text{Life Rebate} = (1 - .4166666666666666) \times 26.58 = \mathbf{15.51}$
- **Ins_Life** = $(26.58 - 15.51) \times (1 - .45) = \mathbf{6.09}$
- **Ins_Dis** = $(\text{Disability Premium} - \text{Disability Rebate}) \times (1 - \text{Disability Commission})$
 - $\text{Disability Rebate} = \text{Rule of 78's Factor} \times \text{Disability Premium}$
 - $\text{Pro Rata Factor} = .358974338$ (5 months of 12)
 - $\text{Disability Rebate} = .358974338 \times 63.92 = \mathbf{22.95}$
- **Ins_Dis** = $(63.92 - 22.54) \times (1 - .45) = \mathbf{22.54}$
- **Ins_Prop** = $(\text{Property Premium} - \text{Property Rebate}) \times (1 - \text{Property Commission})$
 - $\text{Property Rebate} = \text{Property Premium} - (\text{Rule of 78's Factor} \times \text{Property Premium})$
 - $\text{Rule of 78's Factor} = .358974338$ (5 months of 12)

- $Property\ Rebate = .358974338 \times 84.40 = 30.30$

- $Ins_Prop = (84.40 - 30.30) \times (1 - .6) = 21.61$

③ $INS_CAR = 6.09 + 22.54 + 21.61 = 50.24$

Notice that all of the rebates have decreased, therefore, more of the insurance has expired. Decreased rebates mean higher cost because the insurance extended protection for a longer time. So, this loan for JOHN DOE #1 cost more money in January due to smaller refunds coming back from the insurance company on behalf of this customer. At the end of December, the office had 41.99 in cash losses in the form of those prepaid insurance premiums. At the end of January, one month later, those cash losses increased to 50.24. The loan cost an additional \$8.25 even though it was totally inactive.

So, the **NET BALANCE** should have increased by \$8.25 in January: $3,066.99 + 8.25 = \$3,075.24$

$NET\ BALANCE = 2,000 + 1,000 + 25.00 + 50.24 - 0 - 0 - 0 = 3,075.24$

NET BALANCE = \$3,075.24 as of 01/31/09

DELINQUENCY REPORT (Contractual)

TEST OFFICE

Delinquency cutoff date: 01/31/2009
 Sorted by: Account number (Late Fees included)
 Account types printed: All (30's not printed)
 Rundate: 08/04/2008



Acct	Borrower	Loan Date	Gross	30's	60's	90's	90*	No-Pay		Last Paid	Pmt
D00002	DOE, JOHN	09/01/08	4,219.80					4,219.80	(3,075.27)	09/01/08	352
Outstanding:				0.00	0.00	0.00	0.00	4,219.80			
Accounts:				0	0	0	0	1			

*3 cents variance due to rounding differences

This account will now be charged off. Let's see what happens.

NET BALANCE - CHARGE OFF

When an account is charged off, it is finalized in the loan system and in the earnings program. It is the same as if it were paid out or renewed. The final **NET BALANCE** is calculated based on the final rebates applied at charge-off time. While we haven't discussed the interest rebate thus far, the reason is that it is inapplicable to John Doe #1 because no principal payments were ever made. Therefore, interest was never earned so the interest rebate is irrelevant. It will be discussed in John Doe #2.

The insurance, on the other hand, has been discussed. While there are no insurance earnings, just as there are no interest earnings, the insurance rebates do affect the **NET BALANCE** for the reasons mentioned above. The later the insurance products are rebated, the higher the cost to the office. Therefore, the insurance rebates are the only variable of the **NET BALANCE** that will change due to the loan being charged off the books. Here's how.

JOHN DOE #1 NET BALANCE on 02/28/2009(Charge Off)

Since no payments were ever made on this account, the **NET BALANCE - CHARGE OFF** amount will be different from its last **NET BALANCE - ACTIVE** balance only if more time has elapsed to cause the insurance refunds to decrease, the same situation shown above in 12/08 and 01/09 data. In John Doe #1, the account was charged off on 02/28/09. All insurances were rebated. Those rebates dictate the final **INS_CAR** in the **NET BALANCE - CHARGE OFF** calculation. Here is the collection report showing the rebates on John Doe #1:

TEST OFFICE COLLECTION REPORT

Records: 02/01/2009 to 02/28/2009

Sorted by: Account number

Account types printed: All

Rundate: 08/04/2008

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DATE	ACCT	LAST, FIRST	TYPE	PRINC	EXT/LATE &	WriteOffs	TOTAL	REFIN	REBATES			PRCP	IUI	
					OTHER FEES	& PA's	PAYMENTS		MF/IA/C	INT	LIFE			DIS
02/25/09	D00002	DCE, J.	W	0.00		4,219.80	0.00				145.68	13.29	17.21	22.72
				0.00	0.00		0.00	0.00	0.00	0.00	145.68	13.29	17.21	22.72

With the rebates supplied on the collection report, to be used in the **NET BALANCE** formula, the **TOTAL PAR** looks like this:

$$\text{TOTAL PAR} = 2,000 + 1,000 + 25.00 + 57.67$$

$$\text{TOTAL PAR} = 3,082.67$$

Why? Because:

$$\text{CASH} = 2,000$$

$$\text{REF_BAL} = 1,000$$

$$\text{FEES} = 25.00$$

$$\text{INS_CAR} = 57.67$$

$$\text{INS_CAR} = \text{Ins_Life} + \text{Ins_Dis} + \text{Ins_Prop} + \text{Ins_VSI} + \text{Ins_IUI}$$

- **Ins_Life** = (Life Premium - Life Rebate) x (1 - Life Commission)
- **Ins_Life** = (26.58 - 13.29) x (1 - .45) = **7.31**
- **Ins_Dis** = (Disability Premium - Disability Rebate) x (1 - Disability Commission)
- **Ins_Dis** = (63.92 - 17.21) x (1 - .45) = **25.69**
- **Ins_Prop** = (Property Premium - Property Rebate) x (1 - Property Commission)
- **Ins_Prop** = (84.40 - 22.72) x (1 - .6) = **24.67**

$$\text{INS_CAR} = 7.31 + 25.69 + 24.67 = \$57.67$$

$$\text{TOTAL PAR} = 2,000 + 1,000 + 25.00 + 57.67$$

$$\text{TOTAL PAR} = 3,082.67$$

Since there were no payments made and therefore no earnings, the final **NET BALANCE - CHARGE OFF** is:

NET BALANCE = 3,082.67

TEST OFFICE
CHARGE OFF REPORT
First record to Last record
Sorted by: Account number
Account types printed: All
Rundate: 08/06/2008

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DATE	ACCT	LAST FIRST	CASH(+)	REF	BAL'S(+)	FEES(+)	INS	TOTAL	PRINC	INTEREST	INSURANCE	NET	Current	
								PAR	PAID (-)	EARNED(+)	EARNED(+)	C/O	BALANCE	DIFF
02/25/2009	D00002	DOE, J.	2,000.00		1,000.00	25.00	57.67	3,082.67	0.00	0.00	0.00	3,082.67	4,219.80	1,137.13
			\$2,000.00		\$1,000.00	\$25.00	\$57.67	\$3,082.67	\$0.00	\$0.00	\$0.00	\$3,082.67	\$4,219.80	\$1,137.13

OF LOANS: 1

GROSS BALANCES: \$4,219.80

NET CHARGE OFFS: \$3,082.67

% CHARGE OFFS to GROSS BALANCES: 73.05 %

Finally, the last consideration for John Doe #1 is the Earnings Reports generated for the P&L Financials. Again, since there were no principal payments on the account, earnings will be zero. However, it is important to have the correct 'Unearned' amounts on those Earnings reports at the accounting office. Based on the numbers above, we can calculate what the **Unearned** should be on the Earnings Report.

Unearned Interest = \$1,019.90 (all interest remained unearned)

Unearned Insurance = Premiums - Rebates - INS_CAR (from Charge Off Report)

$$\diamond = 174.90 - 53.22 - 57.67 = 64.01$$

- Another way to see the Unearned Insurance is by adding together each product's Unearned:
- Life = $26.58 - 13.29 - 7.31 = 5.98$ (Prem. - Rebate - INS_Life) **or** (Prem. - Rebate) x Office Commission
- Disability = $63.92 - 17.21 - 25.69 = 21.02$ (Prem. - Rebate - INS_Dis) **or** (Prem. - Rebate) x Office Commission
- Property = $84.40 - 22.72 - 24.67 = 37.01$ (Prem. - Rebate - INS_Prop) **or** (Prem. - Rebate) x Office Commission
- = $5.98 + 21.02 + 37.01 = 64.01$

Looking at the actual Earnings Report on the next page, you will see that using the numbers from the Charge- Off report, we calculated the same Unearned for John Doe #1. Our numbers match and validate each other!

JOHN DOE - TEST CASE #2

The second John Doe loan will use the exact same loan variables as the first. The only difference in this 2nd loan and the first loan is that a single \$300.00 principal payment was made on the 2nd account, thereby reducing the balance owed. The date of the payment is irrelevant in the **NET BALANCE** calculation. But for demonstration purposes, the payments posting data is as follows:

Posting Date:	10/15/08
Payment Amount:	\$300.00
Balance after payment:	\$3,919.80

This payment was intentionally chosen to be less than one full payment so that the delinquency status for this account will still match that of John Doe #1. We will now explain the impact this payment has on the **NET BALANCE** calculation.

You may recall that the formula for the **NET BALANCE** calculation is as follows:

$$\textcircled{1} \text{ TOTAL PAR} = \text{CASH} + \text{REF_BAL} + \text{FEES} + \text{INS_CAR}$$

$$\textcircled{2} \text{ NET BALANCE} = \text{TOTAL PAR} - \text{PRINC_PAID} + \text{INTEREST_EARNED} + \text{INSURANCE EARNED}$$

JOHN DOE #2 NET BALANCE on 12/31/2008

The **TOTAL PAR** on this loan will be exactly the same as in Doe #1. More specifically, the principal cash that is at risk is the same in both loan instances. The **CASH, REF_BAL, FEES, and INS_CAR** variables are all equivalent to the first loan. It is the $\textcircled{2}$ part of the equation that changes. So, let's look at what impact this \$300.00 payment has on the **NET BALANCE** in the $\textcircled{2}$ portion of the formula. We'll be looking at the calculation as of 12/31/08 when the account first moves into No-Pay status on the Delinquency Report.

$$\textcircled{2} \text{ NET BALANCE} = \text{TOTAL PAR} - \text{PRINC_PAID} + \text{INTEREST_EARNED} + \text{INSURANCE EARNED}$$

$$\text{TOTAL PAR} = 2,000 + 1,000 + 25.00 + 41.99 = 3,066.99$$

$$\text{PRINC_PAID} = \$300.00$$

$$\text{INTEREST_EARNED} = \$149.68$$

$$\text{INSURANCE_EARNED} = \$46.75$$

Why? Because:

The interest calculated as earnings is an actuarial formula based on the time elapsed, the amount financed, and the annual percentage rate. It tells us that at this point in time 'x' amount of interest has been earned contractually. The formula for this is beyond the scope of this paper but the variables used are as follows.

$$\text{INTEREST_EARNED} = \text{Actuarial Interest} \times (\text{Payments Made} / \text{Payments Scheduled})$$

$$\diamond \text{ ACTUARIAL INTEREST} = \{ \text{formula based on elapsed time} \}$$

- Time elapsed = 4.033 months
 - The 2 dates used are the Loan Date and the Run Date of the Delinquency Report.
 - Loan Date: 09/01/08
 - Delinquency Cut Off date: 12/31/08

- = 121 days / 30 (Equal 30-day months are used)

- Time elapsed = 4.033

❖ **ACTUARIAL INTEREST = 526.3489**

❖ **PAYMENTS MADE = (Current Balance – Gross Loan) / Payment**

- = (4,219.80 – 3,919.80) / 351.65

❖ **PAYMENTS MADE= .8531203**

❖ **PAYMENTS SCHEDULED=** How many payments have been contractually scheduled to have been paid

❖ **PAYMENTS SCHEDULED = 3** (10/01, 11/01, 12/01)

INTEREST_EARNED = 526.3489 x (.8531206/ 3) = 149.68

\$149.68 is what this account has earned to date by calculation. No earnings are ever shown on an account unless actual cash has been paid on the account. Enough has been paid to show the entire \$149.68 as earned interest (\$300.00). We now reduce the amount paid by the amount just applied interest earnings, leaving 150.32 available to go towards insurance earnings.

The following formula is used for every insurance product on the loan. The rebates are the same as for the INS_CAR calculation. Those numbers are detailed on pages 3-4 earlier.

INSURANCE_EARNED = (Premium – Rebate) x Office Commission

❖ **LIFE = (26.58 – 17.72) x .45 = 3.99**

❖ **DISABILITY = (63.92 – 29.50) x .45 = 15.49**

❖ **PROPERTY = (84.40 – 38.95) x .6 = 27.27**

INSURANCE EARNED = 3.99 + 15.49 + 27.27 = 46.75

Since there is 150.32 remaining to be applied to insurance earnings, the entire 46.75 is applied. So, filling in the numbers just calculated, we get the **NET BALANCE** of

② NET BALANCE = TOTAL PAR – PRINC_PAID + INTEREST_EARNED + INSURANCE EARNED

NET BALANCE = 3,066.99 – 300.00 + 149.68 + 46.75

NET BALANCE = 2,963.42

On the following page are the corroborating Delinquency and Earnings Reports generated for this loan as of **12/31/08**. Notice the **NET BALANCE** amount on the Delinquency Report and the correct amounts for both interest and insurance on the Earnings Report.

DELINQUENCY REPORT (Contractual)
TEST OFFICE
 Delinquency cutoff date: 12/31/2008
 Sorted by: Account number (Late Fees included)
 Account types printed: All (30's not printed)
 Rundate: 08/08/2008

Acct	Borrower	Loan Date	Gross	30's	60's	90's	90*	No-Pay	Last Paid
D00002	DOE, JOHN	09/01/08	4,219.80					3,919.80	10/15/08
Outstanding:				0.00	0.00	0.00	0.00	3,919.80	
Accounts:				0	0	0	0	1	



EARNINGS REPORTS			
COMPANY:	TEST OFFICE		
Last Run:	11/31/2008		
This Run:	12/31/08		
Insurance:	L = .45: D = .45: P = .6: V = 0: I = .4		
	INTEREST		INSURANCE
Gross Earned:	149.68		3.99 Life
Last Prd Int:			15.49 Disability
Net Earned Int:			27.27 Property
			- IUI
Disc/R.Estate	149.68		- VSI
Sales			46.75 Gross Earned:
Auto			Last Prd. Ins:
			Net Earned Ins:
	CHARGE OFFS		
	INT-Earned	INT -Unearned	INS - Earned
	INS - Unearned		
Disc/R.Estate	-	-	-
Sales	-	-	-
Auto	-	-	-
	RESIDUAL EARNINGS		PRINC.COLLECTIONS
Interest	-		300.00 Disc/R.Estate
Insurance	-		- Sales
			- Auto
CStopInt**	-		300.00 Total Actives
CStopIns**	-		- Paid Outs
			300.00 TOT PRINC. COLL.
** CStopInt, CStopIns = cumulative STOP interest, insurance			

JOHN DOE #2 NET BALANCE on 01/31/2009

Come the end of January 2009, John Doe #2 has had no additional payments made to the account. In that case, the only variables that change in the calculation of the NET BALANCE from December 2008 to this month, is the following:

- **INTEREST_EARNED** – Interest earnings will change due to the *Payments Made / Payments Scheduled* portion of the formula. Since no additional payments were made, that ratio decreases, thereby decreasing the interest earnings.
- **INSURANCE_EARNED** – Insurance earnings are affected in similar manner as the interest. Also, the INS_CAR grows as well due to decreased rebates to the customer.

It isn't necessary to detail the results of the 01/31/2009 NET BALANCE as it is reasonably obvious how the formula is impacted by the lapse of time. Therefore, this leaves only the NET BALANCE – CHARGE OFF for John Doe #2 to be explained.

JOHN DOE #2 NET BALANCE on 02/28/2009 (Charge Off)

The only real difference in the NET BALANCE – ACTIVE calculation and the NET BALANCE – CHARGE OFF calculation is the interest rebate. And then it is important only if principal collections are sufficient to warrant showing interest earnings. In John Doe #2, there were monthly interest earnings. Those earnings were based on the actuarial formula beginning on page 11.

However, when an account is charged off to P & L, it is rebated according to the refund method stipulated by each state's financial codes. The Rule of 78's (Sum of the Digits) is the most common interest rebate method. And the *Rule of 78's* refund method rebates **less** than the *Actuarial Method*, the method used monthly by the Earnings Report.

Therefore, the rebate of interest at time of charge off may well be **LESS** than what had previously been being used by the Earnings program. And a smaller interest refund means a potentially larger interest earning. So, the **NET BALANCE** at time of charge off for John Doe #2 looks like this:

The principal at risk is the same as on John Doe #1 (see page 8 for full explanation.).

TOTAL PAR = 3,082.67

INTEREST_EARNED = Finance Charge – Interest Rebate

- = 1,019.90 – 145.68 (based on Rule of 78's)
- = 874.22
- **PRINC_PAID = \$300.00**

INTEREST_EARNED = \$300.00

The loan has maximum interest earnings of \$874.22. However, remembering that all earnings are constrained by principal payments, we recognize that \$300.00 was all that was paid. So, by virtue of the hierarchy of interest earnings getting the first allocation of monies paid, the entire \$300.00 will go into **INTEREST_EARNED**.

With the entire **PRINC_PAID** going towards interest, there are no remaining funds available to apply towards **INSURANCE_EARNED** (Insurance rebates at the time of charge off on 02/28/09 are the same on both Loan examples). Therefore the final **NET BALANCE** charge off report and Earnings Report are as follows:

TEST OFFICE
CHARGE OFF REPORT
 First record to Last record
 Sorted by: Account number
 Account types printed: All
 Rundate: 08/11/2008

Page 1 of 1

DATE	ACCT	LAST_FIRST	REF		INS	TOTAL	PRINC	INTEREST	INSURANCE	NET	Current	
			CASH(+)	BAL'S(+)	FEES(+)	PAR	PAID (-)	EARNED(+)	EARNED(+)	C/O	BALANCE	DIFF
02/28/2009	D00002	DOE, J.	2,000.00	1,000.00	25.00	3,082.67	300.00	300.00	0.00	3,082.67	3,919.80	837.13
			\$2,000.00	\$1,000.00	\$25.00	\$3,082.67	\$300.00	\$300.00	\$0.00	\$3,082.67	\$3,919.80	\$837.13

OF LOANS: 1
GROSS BALANCES: \$3,919.80

EARNINGS REPORTS

COMPANY: TEST OFFICE
Last Run: 01/31/09
This Run: 02/28/09
Insurance: L = .45: D = .45: P = .6: V = 0: I = .4

INTEREST		INSURANCE	
Gross Earned:	300.00	-	Life
Last Prd Int:	135.29	-	Disability
Net Earned Int:	164.71	-	Property
		-	IUI
Disc/R.Estate	164.71	-	VSI
Sales	-	-	Gross Earned:
Auto	-	55.88	Last Prd. Ins:
		(55.88)	Net Earned Ins:
CHARGE OFFS			
	INT-Earned	INT -Unearned	INS - Earned
	-	-	-
Disc/R.Estate	300.00	719.90	64.01
Sales	-	-	
Auto	-	-	
RESIDUAL EARNINGS		PRINC.COLLECTIONS	
Interest	-	300.00	Disc/R.Estate
Insurance	-	-	Sales
		-	Auto
CStopInt**	-	300.00	Total Actives
CStopIns**	-	-	Paid Outs
		300.00	TOT PRINC. COLL.

** CStopInt, CStopIns = cumulative STOP interest, insurance

It is important to notice the Gross Earned as being \$300.00, as well as the breakdown of the CHARGE OFFS section of interest and insurance. Disregard the Last period Interest as well as the other numbers as they are not germane to this immediate discussion.

CLOSING

Hopefully this brief discussion of the **NET BALANCE** calculation will serve to inform and instruct on precisely how the calculation is made. In closing, the following highlights should be noted regarding the **NET BALANCE**.

NET BALANCES:

- ① ...can and often do change from month to month, even when no activity has occurred on the account.
- ② ...on the Delinquency Report are a *close estimate* to what the **NET BALANCE** will finally be at charge off, but not identical. There may be variances between the two numbers due to rebate and earnings differences.
- ③ ...attribute principal payments first to interest revenue, then to insurance. If principal payments are insufficient to accommodate the allowable interest revenue, there will be no insurance revenue.

END NOTES

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