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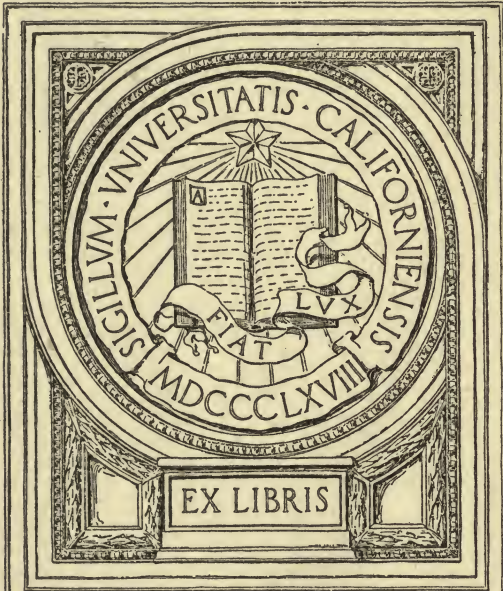
Accrued Interest Receivable  
and Payable

By HOWARD M. JEFFERSON


The Bankers Publishing Co., New York

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# Accrued Interest Receivable and Payable

An Accurate Daily Statement

BY

HOWARD M. JEFFERSON

Auditor, Federal Reserve Bank of New York



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1918

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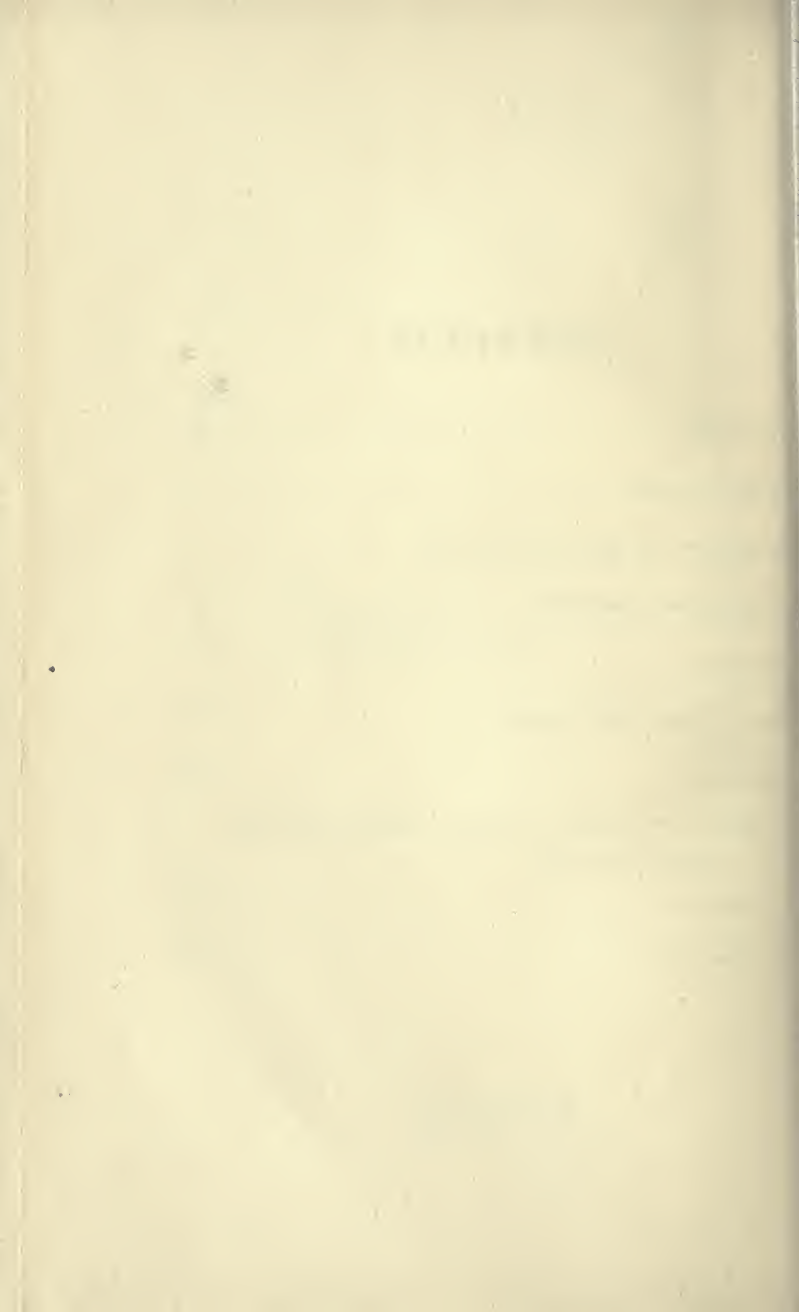
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TO YOU  
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## PREFACE



## PREFACE

**C**ONSIDERABLE discussion has followed the appearance of the memorandum on the call of the Comptroller of the Currency of December 20, 1917. The memorandum reads as follows:

As it has been the custom of many national banks to credit discounts as collected directly to profits, and to credit profits with accruing interest only after collection, it has been thought proper to give the banks a reasonable time to make the adjustments which will be required in order to report accurately Items 21 (Interest earned but not collected) and 26 (Interest and Discount collected or credited in advance of maturity and not earned).

Therefore, national banks may exercise their discretion on this call as to including these Items 21 and 26 in this Report of Condition. Banks will, however, be required

## PREFACE

to report these items correctly later on, when they shall have had a reasonable opportunity to adjust their books to show these items accurately, and shall have received more explicit directions to this end.

The practice of accruing interest daily and of crediting discount only as earned is not new nor is there anything complicated in the process. The really startling fact, to the student of accounting, is that banks ever should have followed the practice of crediting income as received instead of as earned.

The installation of a system of daily accruals of earnings should appeal strongly, but why stop there? Interest payable is of the same genus as interest receivable. If the latter accrues daily so does the former. The debit accounts for rent, taxes, salaries and other expense items have a way of increasing from day to day.

In the pages which follow, the author

## PREFACE

describes in detail, with proved figures, a system of accruing all earnings and all expenses. The material may appear intricate to the casual reader, but it will undoubtedly be appreciated by the practical man who is called upon to put the system or any part of it into operation.

The journal entries should be clear to any one familiar with a journal and a ledger. For those who are not, the terms

<i>Unearned Discount</i> .....	\$100.00
<i>to</i>	
<i>Discount Earned</i> .....	\$100.00

placed in this position are intended to convey the idea that the account "Unearned Discount" is to be debited \$100.00 and the account "Discount Earned" is to be credited with a like amount.

The number of tickets suggested should not stand in the way of the installation of the system. These may be printed so all that needs to be done each day is to

## PREFACE

fill in the amounts of the various entries, date the tickets and send them through. It is generally recognized that errors are avoided in both preparing and recording constantly recurring entries if they are printed.

Given an accurate accrual of earnings and expenses each day, the closing of the books will cause no heart rendings because the accrued receivables turned out so much less than it was assumed they would be. The accrued payables will not add their quota to the misery. The "Calls" may be prepared with actual figures instead of being estimated, and with much saving of time and worry.

H. M. J.

## INTRODUCTION





## CHAPTER I.

### INTRODUCTION

**A** BANKER discounts a note for \$6,000 having thirty days to run, at six per cent and passes the following entries through his books:

*Bills Discounted*.....\$6,000

to

*Individual Deposits*..... \$5,970

*Discount Received*..... 30

On the same day he makes a time loan of \$6,000 for thirty days, interest payable at maturity, also at the happy rate of six per cent. His general bookkeeper finds the following entries to be posted:

*Time Loans*.....\$6,000

to

*Individual Deposits*..... \$6,000

## ACCRUED INTEREST

Thirty days later the discounted note matures and is automatically charged against the borrower's account. The following entries are passed:

<i>Individual Deposits</i> .....	\$6,000
to	
<i>Bills Discounted</i> .....	\$6,000

The other borrower calls with his check for \$6,030 and receives back his note and the collateral, if he left any when the loan was made. The banker passes the following entries:

<i>Cash (or Individual Deposits)</i> .....	\$6,030
to	
<i>Time Loans</i> .....	\$6,000
<i>Interest Received</i> .....	30

Both transactions have been carried through the books incorrectly. It is generally considered that the two errors make the matter right by the principle of offset, but a few minutes study of the

## RECEIVABLE AND PAYABLE

figures shown in Figure 1 will demonstrate conclusively that even the net figures are in balance but twice, once on the fifteenth day and again on the thirtieth day. And the latter happens to agree only because the transactions are completed simultaneously. If they had continued three or four months the error would have continued and the discrepancy on each day except the one in the middle would have been greater because the amount of the profit is greater. The table will also illustrate the discrepancies in the case of the \$6,000 discount and loan above mentioned.

Suppose a few ciphers are added to the \$6,000 items used to increase the invested assets to say \$6,000,000, the error in the first day's earnings will be \$28,000. Increase the loans to \$60,000,000 and the error on the first day will be \$280,000. If there is such a wide divergence from the true status when discounts and loans of

**COMPARATIVE STUDY OF DISCOUNT AND INTEREST EARNED AND RECEIVED ON NOTES OF \$6000 EACH, RUNNING THIRTY DAYS AT 6 PER CENT.**

Day	Discount Actually Earned	Discount Received	Discount Receipts in Excess of Earnings	Interest Actually Earned	Interest Received	Interest Earnings in Excess of Receipts	Error in Earnings Accounts	Actual State of Earnings
1	\$1	\$30	\$29	\$1	\$0	\$1	\$28*	\$2
2	2	30	28	2	0	2	26*	4
3	3	30	27	3	0	3	24*	6
4	4	30	26	4	0	4	22*	8
5	5	30	25	5	0	5	20*	10
6	6	30	24	6	0	6	18*	12
7	7	30	23	7	0	7	16*	14
8	8	30	22	8	0	8	14*	16
9	9	30	21	9	0	9	12*	18
10	10	30	20	10	0	10	10*	20
11	11	30	19	11	0	11	8*	22
12	12	30	18	12	0	12	6*	24
13	13	30	17	13	0	13	4*	26
14	14	30	16	14	0	14	2*	28
15	15	30	15	15	0	15	0	30
16	16	30	14	16	0	16	2†	32
17	17	30	13	17	0	17	4†	34
18	18	30	12	18	0	18	6†	36
19	19	30	11	19	0	19	8†	38
20	20	30	10	20	0	20	10†	40
21	21	30	9	21	0	21	12†	42
22	22	30	8	22	0	22	14†	44
23	23	30	7	23	0	23	16†	46
24	24	30	6	24	0	24	18†	48
25	25	30	5	25	0	25	20†	50
26	26	30	4	26	0	26	22†	52
27	27	30	3	27	0	27	24†	54
28	28	30	2	28	0	28	26†	56
29	29	30	1	29	0	29	28†	58
30	30	30	0	30	30	0	0	60

\*Over. †Short.

FIGURE 1.

## RECEIVABLE AND PAYABLE

exactly the same amounts and rates are compared, what confidence can be placed in figures so radically different as is actually the case in every bank and trust company.

The method of determining the true status of these earning accounts is so extremely simple, so inexpensive to operate, and so satisfactory to every one who watches the figures that every bank and trust company in the country should establish the proper accounts without delay.

Having established an accurate daily accrual of earnings, we have only to apportion expenses in a similar manner and we have an absolute statement of condition each day. Moreover, with such accurate figures, it follows as a natural course, that the officers will require and watch averages of these earnings and expenses and thus have a still closer finger on the pulse of the bank.





**INTEREST ACCRUED RECEIV-  
ABLE**

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## CHAPTER II.

### INTEREST ACCRUED RECEIVABLE

**I**N order to start a record of interest earned it will be necessary to figure the interest accrued receivable after the close of business on a given day on all bonds owned, on all bonds and mortgages, and on all demand and time loans. Then head an ordinary piece of analysis paper or a page in a suitable columnar book, as shown in Figure 2. These sheets will be referred to hereafter as "Accrual Sheets." Use one sheet or one page for demand loans, another for time loans, another for bonds, and still another for bonds and mortgages. Then analyze the loans according to rates and prove the totals with the general ledger. This clas-

## ACCRUED INTEREST

sification may be made upon the sheets above referred to, though it will make a cleaner record if the analysis is made on separate sheets and the totals transferred to the accrual sheets.

Bonds are carried on the books of banks in one of several ways and the manner of carrying them on the general ledger will determine how they shall be entered on the accrual sheet. Suppose, for example, that we have a \$1,000 bond, purchased at 80, bearing interest at 5 per cent. The investment of \$800 earns \$50 each year, which is at the rate of 6.25 per cent.

If a bank should follow the practice of carrying its bond investments at par, the bond referred to should be entered on the accrual sheet as \$1,000 under the 5 per cent rate. This is manifestly incorrect, as the bank has invested but \$800 and this amount is earning 6.25 per cent. The







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## RECEIVABLE AND PAYABLE

bond should, therefore, be entered as \$800 upon the books of the bank and upon the accrual sheet for that amount in the 6.25 per cent column.

Some financial institutions carry bonds at amortized values. This may be most simply illustrated by taking a bond bought at a premium. Let us consider a \$1,000 bond, bearing 6 per cent interest, purchased at 120, having ten years to run. Stating the matter in its simplest terms, the institution invests \$1,200 and receives \$30 in interest at each semi-annual interest period.

If this institution were to credit all of the semi-annual interest payments to earnings it would find itself with an uncollectible asset on its books after the face of the bond had been paid at maturity. In order to provide against this contingency it should "amortize" or "kill" the premium by setting aside a definite pro-

## ACCRUED INTEREST

portion of the income and crediting it to the investment account.

Since the bond is to be retired in ten years and there are two interest periods in each year, it will be necessary to set aside one-twentieth of \$200 each interest period. This will take \$10 of the \$30 payment, leaving \$20 as the semi-annual return. If we multiply this by two to increase the interest earned to an annual basis and then divide by the amount invested we find that the actual earning power of the money invested is 3 1-3 per cent. The book value of the bond, \$1,200, should be entered under this rate.

In order to simplify the accounting, these semi-annual deductions of \$10 should be credited to a reserve account and be used at the maturity of the bond to eliminate the premium.

It must be understood that the above presentation of the process of amortization of premium on bonds is not mathe-



## RECEIVABLE AND PAYABLE

matically correct. The proportion of the income set aside is reinvested and the income received is used to reduce the amount that needs to be deducted from the interest payment. This, of course, increases the actual rate of return upon the investment. Those who are familiar with the theory of amortization will make the proper adjustments and carry the investment on the accrual sheet at the proper rate.

If bonds are bought on a basis valuation and carried at cost, the columns must be headed with these odd rates and the actual book value entered.

Having prepared these schedules, proved the totals with the general ledger, and having figured the accrued interest receivable, the following entries should be prepared and passed through the books in order to establish the earning accounts on the proper basis:

## ACCRUED INTEREST

*Interest Accrued Receivable—Demand Loans*

*Interest Accrued Receivable—Time Loans*

*Interest Accrued Receivable—Bonds*

*Interest Accrued Receivable—Bonds and Mortgages*

to

*Interest Earned—Demand Loans*

*Interest Earned—Time Loans*

*Interest Earned—Bonds*

*Interest Earned—Bonds and Mortgages*

The effect of these entries is obviously to credit the earning accounts with the amount of all interest accrued to the date the entries go through the books and to establish contra accounts to offset the credits so made. When cash is received on account of interest it is credited to these debit accounts instead of to the earning accounts.

If desired, the general ledger debit and credit accounts may be combined into one for the debits and one for the credits. This will reduce the number of entries passing through the general ledger each

## RECEIVABLE AND PAYABLE

day. The accrual figures should, however, be kept on separate sheets, so that proofs may be made from time to time.

Having passed entries transferring interest accrued into earnings nothing more needs to be done until the day following. Let us assume that the accruals have been figured to the close of business Tuesday, March 4, that the figures have been entered on the accrual sheet as shown in Figure 3, that Interest Earned on Demand Loans has been credited with \$1,532.77 and that a contra account, Interest Accrued Receivable on Demand Loans has been charged with a like amount. The entries which follow will then carry the accruals through the books for a period of one week.

On Wednesday, March 5, three new loans are made, \$1,000 at 4 per cent, \$5,000 at 5 per cent and \$10,000 at 6 per cent. These are entered on the ac-

## ACCRUED INTEREST

crual sheet in black ink, as shown in Figure 3. No other changes are made in the demand loans on Wednesday, so new totals are brought down.

One day's interest is then figured on these new totals as follows:

<i>One day's interest on \$101,000 at 4%.</i>	\$11.21
<i>One day's interest on 155,000 at 5%.</i>	21.53
<i>One day's interest on 360,000 at 6%.</i>	60.00
<i>Total .....</i>	\$92.74

Entries are then passed as follows:

<i>Interest Accrued Receivable</i>	
<i>Demand Loans.....</i>	\$92.74
<i>to</i>	
<i>Interest Earned Demand</i>	
<i>Loans .....</i>	\$92.74

The total interest for the one day is then entered in the last column on the accrual sheet in black ink, and a new total brought down. This represents the accrued interest receivable but not paid

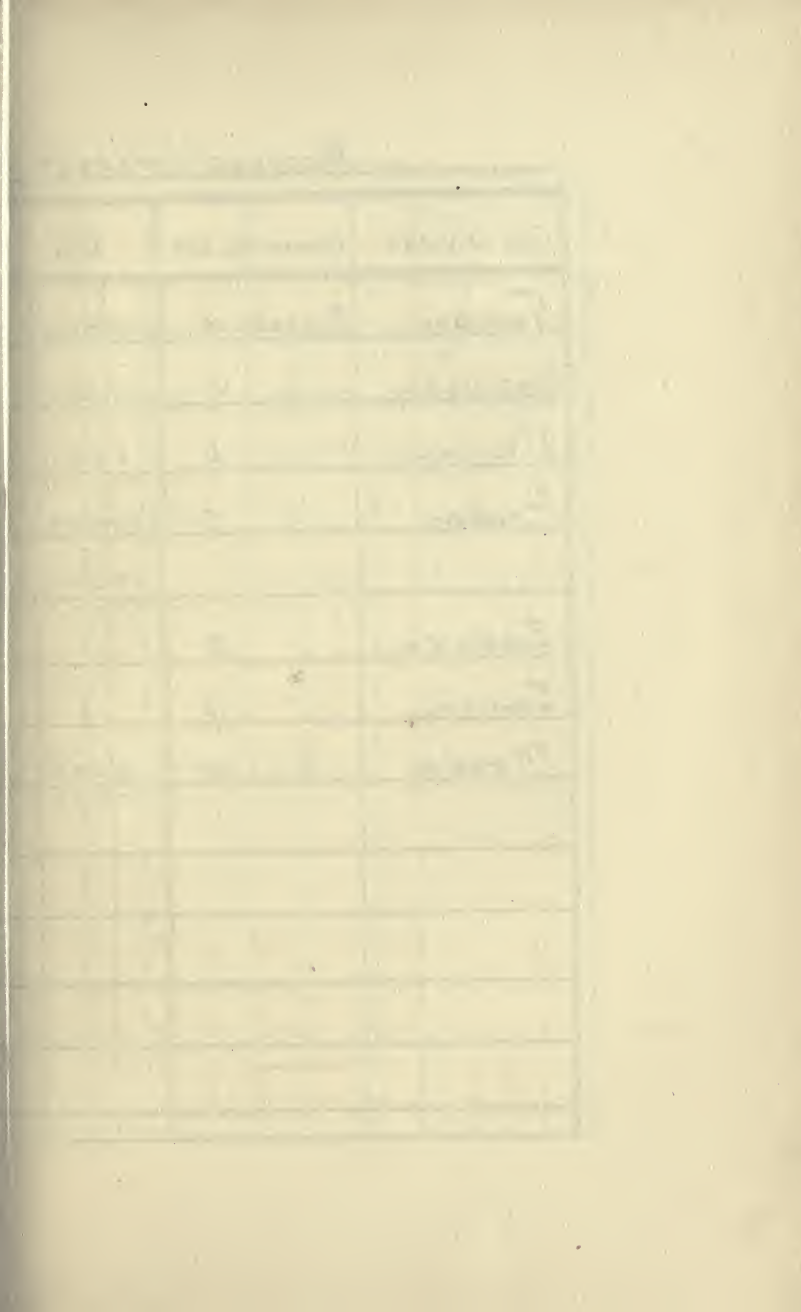






TABLE ON DEMAND LOANS

5%		6%		TOTAL	Acc'd. INT. REC. NET.
00		350 000		600 000	1532 77
00		10 000		16 000	92 74
00		360 000		616 000	16 25 51
00				21 000	72 33
00		360 000		595 000	90 01
		5 000		15 000	16 43 19
00				15 000	105 00
00		365 000		595 000	90 15
					16 28 34
					90 15
					17 18 49
					90 15
00		15 000		25 000	
00		380 000		620 000	93 90
					1902 54

APPROXIMATELY 1870

Year	Population	Area
1870	1,000,000	100,000
1875	1,200,000	120,000
1880	1,400,000	140,000
1885	1,600,000	160,000
1890	1,800,000	180,000
1895	2,000,000	200,000
1900	2,200,000	220,000
1905	2,400,000	240,000
1910	2,600,000	260,000
1915	2,800,000	280,000
1920	3,000,000	300,000
1925	3,200,000	320,000
1930	3,400,000	340,000
1935	3,600,000	360,000
1940	3,800,000	380,000
1945	4,000,000	400,000
1950	4,200,000	420,000
1955	4,400,000	440,000
1960	4,600,000	460,000
1965	4,800,000	480,000
1970	5,000,000	500,000



## RECEIVABLE AND PAYABLE

at the close of business Wednesday, or more properly speaking at the opening of business Thursday morning.

No loans were made on Thursday, but two loans were paid with interest. One of these was \$6,000 and with it was received interest for thirty-one days at 4 per cent, amounting to \$20.67; the other was \$15,000, on which the interest amounted to \$51.66. These loans are entered in red ink in their respective columns and the total interest received, \$72.33, is entered in red in the accrued receivable, net, column at the right. New totals are struck. Entries are passed covering the payments as follows:

<i>Cash</i> .....	\$21,072.33
<i>to</i>	
<i>Demand Loans</i> ...	\$21,000.00
<i>Interest Accrued</i>	
<i>Receivable</i> ....	72.33

One day's interest is then figured on

## ACCRUED INTEREST

the new balances at the proper rates as follows:

<i>One day's interest on \$95,000 at 4%.</i>	<i>\$10.55</i>
<i>One day's interest on 140,000 at 5%.</i>	<i>19.46</i>
<i>One day's interest on 360,000 at 6%.</i>	<i>60.00</i>
<i>Total .....</i>	<i>\$90.01</i>

Entries are passed as follows:

<i>Interest Accrued Receivable</i>	
<i>Demand Loans.....</i>	<i>\$90.01</i>
<i>to</i>	
<i>Interest Earned Demand</i>	
<i>Loans .....</i>	<i>\$90.01</i>

Friday's business shows loans made and loans paid at varying rates, but it makes no difference how many or how few transactions are passed through the books, or whether they are entered on the accrual sheets in detail or en bloc. The only requisite is that they be entered correctly or there will be trouble when proving the interest accrued receivable account.

## RECEIVABLE AND PAYABLE

After the close of business Friday, the interest is figured as before on the new balances:

<i>One day's interest on \$95,000 at 4%.</i>	<i>\$10.55</i>
<i>One day's interest on 135,000 at 5%.</i>	<i>18.77</i>
<i>One day's interest on 365,000 at 6%.</i>	<i>60.83</i>
<i>Total .....</i>	<i>\$90.15</i>

The usual entries are passed:

<i>Interest Accrued Receivable</i>	
<i>Demand Loans .....</i>	<i>\$90.15</i>
<i>to</i>	
<i>Interest Earned Demand</i>	
<i>Loans .....</i>	<i>\$90.15</i>

The sheet shows that no loans were made or paid on Saturday, so all that needs to be done is to repeat the accrual figures used on Friday, \$90.15, enter the amount in black in the last column and strike a new balance and pass the usual entries.

On Monday two sets of figures must

## ACCRUED INTEREST

be prepared in case there is action of any kind. One of these is to repeat the accrual for Sunday and the other to take care of Monday's earnings. The sheet shows changes in the loans on Monday and the following calculations are necessary:

*One day's interest on \$100,000 at 4% . \$11.11*

*One day's interest on 140,000 at 5% . 19.46*

*One day's interest on 380,000 at 6% . 63.33*

*Total ..... \$93.90*

The interest for the day is added to the last column, a new total struck and entries prepared in the usual manner. This completes the cycle and illustrates every kind of transaction that will need to pass through an interest accrued receivable sheet.

Similar sheets should be prepared for time loans, bonds, bonds and mortgages and for bank balances on which interest is received. In estimating the interest

## RECEIVABLE AND PAYABLE

earned on bank balances, it will not be necessary to post the debits and credits as in the case of loans, but to accrue for one day on the interest bearing balance as nearly as that can be determined.

It should be carefully noted that interest on bonds and on bonds and mortgages is figured on a basis of twelve months of thirty days to the year. It will be necessary, therefore, to omit the thirty-first day when accruing for the thirty-one day months and to add the proper number of days to bring February's accrual up to thirty days.

Bankers do not, as a rule, pay sufficient attention to the average earning power of the money they have invested in various ways and at sundry rates. Two very interesting and helpful percentages may be obtained from these accrual sheets and adjusted daily. The first may be called the average earning power of money invested. It is found by adding together



## ACCRUED INTEREST

the various amounts of income from investments, loans and the like, as they are shown on the accrual sheets. The figure obtained must be reduced to an annual basis and then divided by the total of the amounts invested which earn the interest summarized.

It is evident that this rate will fluctuate through a very narrow margin, but the fluctuations will indicate whether more loans should be sought at a higher rate in order to increase earnings or whether it will be possible to pursue a more conservative course by accepting investments at lower rates.

The second average that may be obtained may be called "the effective earning power of money." Banks must carry non-interest bearing reserves; they find it necessary to carry balances with other banks to facilitate collections, for the purpose of selling exchange, and for other

## RECEIVABLE AND PAYABLE

purposes. These non-interest bearing balances should be carried into the base and thus increase it while the interest remains the same. The rate obtained by this process is "the effective earning power of money."

It is doubtful if this average is of any more value than the average return on money invested, but it is conceivable that if a bank finds it necessary to maintain the equipment mentioned it is fair to consider its cost in some part of the accounting.



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## UNEARNED DISCOUNT

THE HISTORY OF THE

REIGN OF

## CHAPTER III.

### UNEARNED DISCOUNT

**I**N order to establish the accounts necessary to show unearned discount it will be necessary to follow the procedure described for accruing interest earned but not received. The accounts to be established and maintained are slightly different, but the process is the same.

It will be necessary to find the amount of discount received but not earned on a given date. Every bank man is familiar with the process. When this has been determined entries should be passed transferring the unearned discount from the earning account in which it is carried to a new suspense account as follows:

## ACCRUED INTEREST

*Discount Received*

to

*Unearned Discount*

The balance left in the Discount Received account is all earned and the title of the account should be changed to Discount Earned. All subsequent entries covering discount which has actually been earned will be posted to this account. The discount received on all notes after the accrual sheets have been established will be credited to Unearned Discount.

The totals of the bills discounted at the various rates must then be entered on accrual sheets and the amount of unearned discount extended into a suitable column. For purposes of illustration let us assume that the inventory of discounts and the amount unearned at the close of business, Tuesday, March 4, are as follows (see Figure 4):



UNEARNED D

DAY OF WEEK	MONTH AND DAY	4%		5%		6%
Tuesday	Mar. 4	6000		15000		16000
Wednesday	" 5					
Thursday	" 6					
						1000
		6000		15000		15000
Friday	" 7					10000
						5000
Saturday	" 8	6000		15000		11000
Monday	" 10	6000		15000		10000
						10000

FIGURE



UNT

TOTAL		UNEARNED DISCOUNT NET		MEMORANDA
37000		2933		Inventory
		542		Earned one day
		2391		Balance
		542		Earned
		1849		Balance
1000				Note paid
36000		525		Earned
100000		1000		60 day disc. made
		101324		Balance
5000				Note paid
131000		2108		Earned
		99216		Balance
		4216		Earned.
31000				Notes paid
100000		950		Balance un-
				earned

Year	Month	Day	Event
1880	Jan	1	...
1880	Jan	2	...
1880	Jan	3	...
1880	Jan	4	...
1880	Jan	5	...
1880	Jan	6	...
1880	Jan	7	...
1880	Jan	8	...
1880	Jan	9	...
1880	Jan	10	...
1880	Jan	11	...
1880	Jan	12	...
1880	Jan	13	...
1880	Jan	14	...
1880	Jan	15	...
1880	Jan	16	...
1880	Jan	17	...
1880	Jan	18	...
1880	Jan	19	...
1880	Jan	20	...
1880	Jan	21	...
1880	Jan	22	...
1880	Jan	23	...
1880	Jan	24	...
1880	Jan	25	...
1880	Jan	26	...
1880	Jan	27	...
1880	Jan	28	...
1880	Jan	29	...
1880	Jan	30	...
1880	Jan	31	...

## RECEIVABLE AND PAYABLE

<i>\$1,000 two days to run at 6%.....</i>	<i>\$0.33</i>
<i>5,000 three days to run at 6%.....</i>	<i>2.50</i>
<i>15,000 six days to run at 5%.....</i>	<i>12.50</i>
<i>10,000 six days to run at 6%.....</i>	<i>10.00</i>
<i>6,000 six days to run at 4%.....</i>	<i>4.00</i>
<i>Total unearned discount.....</i>	<i>\$29.33</i>

After the close of business on Wednesday, March 5, the bank will have earned one day's interest on all its bills and the unearned account must be reduced by that amount. This is calculated as follows:

<i>One day's interest on \$6,000 at 4%....</i>	<i>\$0.67</i>
<i>One day's interest on 15,000 at 5%....</i>	<i>2.08</i>
<i>One day's interest on 16,000 at 6%....</i>	<i>2.67</i>
<i>Total .....</i>	<i>\$5.42</i>

The following entries are then passed through the books:

<i>Unearned Discount.....</i>	<i>\$5.42</i>
<i>to</i>	
<i>Discount Earned .....</i>	<i>\$5.42</i>

## ACCRUED INTEREST

This amount is then entered in red ink in the last column on the accrual sheet as shown in the figure and deducted from the balance.

The figure shows that a note for \$1,000 discounted at 6 per cent matured on Thursday. The discount earned that day must be accounted for so the deduction for the payment is not made till after the discount earned has been deducted. There is, therefore, no change to be made in the totals of discounts at the various rates and the amount of discount used on the day previous must be deducted again, leaving a balance of \$18.49 unearned. The usual entries must also be passed. The paid note is then entered in red in the proper columns and new totals brought down. These totals are the basis for the calculation of the discount earned on Friday, which amounts to \$5.25.

The figure shows a new discount made on Friday of \$100,000 at 6 per cent,

## RECEIVABLE AND PAYABLE

running for sixty days. The discount received is credited to Unearned Discount and is entered on the accrual sheet, together with the amount of the note. The latter is entered in the proper column under the 6 per cent rate and also in the total column. When these entries have been made the balance in the unearned column after the close of business on Friday is \$1,013.24.

On Friday, also, a note of \$5,000 at 6 per cent is paid and is entered in the proper columns in red and new totals struck. These are used in figuring Saturday's earnings.

On Saturday, the eighth, one day's earnings on the new totals are figured and entered in red in the proper column and the new balance carried down. The daily earnings show a decided increase because of the \$100,000 discount and now amount to \$21.08. After deducting this amount there remains \$992.16 unearned.



## ACCRUED INTEREST

Before entering three notes paid on Monday, the unearned discount column must be reduced by two day's interest on the total covering Sunday and Monday's earnings. The total for the two days is \$42.16. After deducting this in the usual manner there remains \$950.00 unearned.

The notes maturing on Monday are deducted and there remains but one note, \$100,000, at 6 per cent, with fifty-seven days yet to run. The unearned discount on this note is equal to the balance in the account, proving the work of the accrual sheet.

If notes are rebated before maturity, simply enter the face of the note in red in the proper column and deduct the amount of the discount to maturity from the Unearned Discount column. Then pass entries as follows:

*Unearned Discount*

*to*

*Individual Deposits*

## RECEIVABLE AND PAYABLE

Miscellaneous earnings may be accrued daily in much the same way. Take rents, for example. These may be calculated easily and reduced to a per diem basis. They may be combined, perhaps, with others, such as safe deposit rentals and commissions, and carried in one account. Each day, entries should be passed substantially as follows:

*Rents, Etc., Receivable*  
to  
*Rents, Etc., Earned*

The cash receipts will be credited to *Rents, Etc., Receivable*. This will reduce to a daily basis, every earning account and effectively dispose of any and all violent fluctuations in earnings.





## **EXPENSES**



## CHAPTER IV.

### EXPENSES

**T**HE daily accruing of expenses is neither so easy nor so accurate a process as accruing earnings, but results can be obtained which will be very satisfactory. If included in the daily statement in the same way as the interest accrued and the discount earned, the resulting statement will always be up to date and violent fluctuations of all kinds will be eliminated.

The chief items of expense are:

Interest paid on deposits.

Rent.

Taxes.

Salaries.

Stationery, printing and supplies.

## ACCRUED INTEREST

Furniture and equipment.

Miscellaneous items.

The first of these accounts causes the most violent fluctuations in the expense section, especially where interest is credited quarterly or semi-annually. An actual figure might be found each day by running through the ledgers, taking off all interest bearing balances and calculating one day's interest on the total. This, however, would serve no other useful purpose and would be a fearful waste of effort. An estimated figure will prove quite as satisfactory and be much easier to obtain. Moreover, most banks calculate interest monthly, and when this is done the accrued figure may be revised and proper adjustments made in the accrual figure.

In order to start this accrual the average cost of deposits for at least six months should be taken so as to make the calculation as accurate as possible. After

## RECEIVABLE AND PAYABLE

having a start the monthly revision of the rate and the adjustment of the account will keep the daily calculations so nearly accurate that no one could possibly question them. For those who have not prepared averages in this way the following suggestions may be helpful.

First find the average daily deposits for the period to be reviewed, by listing the totals of each day's deposits as they appear on the general ledger. Then divide this total by the actual number of days in the period under review. Be careful to carry Saturday's total in twice so as to provide for the interest accrued on Sunday. It will be found desirable to calculate these averages to a natural closing period when all interest is paid or credited so that the accrual record may be started with a clean slate.

The next thing to do is to analyze the interest paid during the period under review and eliminate any amounts that

## ACCRUED INTEREST

represent interest payments on deposits held prior to the beginning of the period. Then reduce the interest actually paid during the period under review to an annual basis. Divide the estimated interest paid for one year by the average amount of deposits and the result will be the average per cent cost of deposits. Every step in the process is important and the calculations should be checked very carefully.

The estimated accrued interest payable should be determined each day by finding one day's interest on the total deposits at the determined rate. The memorandum of this daily accrual should be entered in the proper columns in a record similar to that shown in Figure 5.

Entries should be passed as follows:

*Accrued Interest Payable*

*to*

*Reserved for Interest Accrued*











## RECEIVABLE AND PAYABLE

The debit account should be closed into Profit and Loss at the closing of the books in the same manner as Interest Paid. The reserve account should be charged with all payments of interest to depositors.

Let us suppose that a banker has before him each day a statement in somewhat the following form:

<i>Average earning power of money in-</i>	
<i>vested</i> .....	4.4236%
<i>Average interest cost of deposits</i> ...	2.2843%
	<hr/>
<i>Gross profit on deposits</i> .....	2.1393%

A banker who knows this much about his earnings knows also just how much it will take to run his bank for a year and to provide a suitable dividend and a proper credit to undivided profits. He will apply his rate of gross profit against his average line of deposits and will not guess that he can afford to raise his rate of interest a bit on an attractive account. He

## ACCRUED INTEREST

will know, not guess, that he can afford to cut his rate of interest on loans, or buy an investment with a lower rate of yield but with correspondingly higher security. These percentages will be valuable only in a banking center where interest rates fluctuate from day to day or week to week.

Some of the other expense items are more or less fixed charges and so may easily be reduced to a per diem basis. Others may be estimated on the basis of the expenses of previous years, due allowance being made for increases and decreases due to changes in operating details. The per diem expense may be reduced to an exact figure by establishing budgets for the various departments and insisting upon their operating under the amount assigned. Any process may be used so long as it gives a reasonably accurate estimate of the daily current expense.



## RECEIVABLE AND PAYABLE

In order to pass entries through the books each day it will be necessary to charge Current Expense with the daily accrual and to credit a reserve account, which may have any acceptable title such as, Reserved for Expenses, Provision for Disbursements or any other. The actual expense bills should be charged to the reserve account when paid.

A brief study of some of the other expense details may be helpful. Rent, for example, is a fixed charge. The annual rental should be divided by twelve and then by the actual number of days in the month for which the accrual is to be established, thirty-one in January, twenty-eight in February and so on.

Franchise, real estate, income, war and excess profits taxes should be estimated and the amount to be set up in the accrual account determined for each day in January, February, March and the other months in the year. In each case the

## ACCRUED INTEREST

monthly amount should be divided by the actual number of days in the month, Sundays and holidays included, in order to determine the daily amount to be accrued.

Salary expenses may be reduced to an accurate daily basis. Establish a memorandum account showing on the one side the total salary roll liability for the month. Credit the account with the net amount of all increases and debit it with the decreases also reduced to a monthly basis. Make proper allowances for parts of a month. Divide the resulting balance by the number of days in the month. Revise the record from month to month in order to keep the accrual figure exact.

The variable expense items, such as stationery and supplies, telegraph and telephone, car fares, light, heat and power, etc., etc., must be studied and the amount to be accrued, determined after careful analysis of these items for a period of six months or more.

## RECEIVABLE AND PAYABLE

Do not fail to allow for Sundays and holidays in full, for while the vault door may be closed, the tellers' cages vacant and the bookkeepers' desks covered with up-ended stools, the loans and investments are working and it is well known that interest on deposits, rent, taxes and salaries go on forever.

How analyze these new expense accounts for comparative purposes? Well perhaps on both sides. Make an elaborate analysis of current expenses from the debit side of the reserve account and an extremely simple analysis of the credit side.

If furniture and equipment is carried as an asset an appropriate charge should be made to current expense each day as a depreciation charge. If charged to Current Expense, as bought, include in the budget or estimate and accrue in the same manner as other items.

Among the expenses of a bank, as well

## ACCRUED INTEREST

as any other business, are some that are paid in advance. Among these items are premiums on fidelity bonds, fire insurance, some times a part of the real estate tax. As a rule, they are so small, compared with other expense items, that they are not considered as assets. If they comprise an appreciable part of the expense account they should be distributed daily by charging the payments to Expenses Paid in Advance in the first instance and then by charging Current Expense in the daily accrual and crediting Expenses Paid in Advance. Other earnings and expenses, if any, should be reduced to a daily basis and entered on the accrual sheets.

## THE DAILY STATEMENT







## CHAPTER V.

### THE DAILY STATEMENT

**N**OW let us see what we have accomplished. Let us not forget that we are not correct in calling the set of figures presented each morning by the general bookkeeper, The Daily Statement. A statement of condition, and that is what the term "statement" means, should not include current earnings and current expenses. It would not, if presented in the best of form, show real estate owned on one side and reserve for depreciation of real estate on the other, but would show the reserve for depreciation as a deduction from the real estate. The figures presented by the general bookkeeper should be called a Trial Balance of the General Ledger, but we

## ACCRUED INTEREST

wouldn't get the book if we touched the buzzer and called for it in that way, so we shall stick to the term Daily Statement.

The ordinary daily statement shows the following:

### **LOANS**

*Demand Loans*  
*Time Loans*  
*Bills Discounted*

### **CAPITAL ACCTS.**

*Capital*  
*Surplus*  
*Undivided Profits*

### **INVESTMENTS**

*U. S. Bonds*  
*Other Bonds*  
*Real Estate*

### **EARNINGS**

*Discount*  
*Interest*  
*Exchange*  
*Sundry Profits*

### **CURRENT EXPENSE**

**DUE FROM BANKS  
AND CASH ITEMS**

### **DEPOSITS**

*Banks*  
*Individuals*  
*Certified Checks*  
*Cashier's Checks*

### **RESERVES**

**TOTAL  
RESOURCES**

**TOTAL  
LIABILITIES**

## RECEIVABLE AND PAYABLE

This is elaborated upon, sometimes in great detail, frequently without regard to the natural grouping of the accounts, but the general principles are the same in practically every banking institution in the country. The resource side shows, loans, investments, current expense, due from banks and cash items and reserves. The liability side shows, capital accounts, earnings and deposits. Many banks insert a section between earnings and deposits for reserves and other suspense accounts.

If accounts are set up in accordance with the foregoing pages, the reserve section on the liability side will be active and a new section will be needed on the resource side for suspended items such as Interest Accrued Receivable, the offset to the daily credits to earnings. If the entire programme is carried out as set forth the daily statement will appear as follows:

## ACCRUED INTEREST

RESOURCES	LIABILITIES
<b>LOANS</b>	<b>CAPITAL ACCTS.</b>
<i>Demand Loans</i>	<i>Capital</i>
<i>Time Loans</i>	<i>Surplus</i>
<i>Bills Discounted</i>	<i>Undivided Profits</i>
<b>INVESTMENTS</b>	<b>EARNINGS</b>
<i>U. S. Bonds</i>	<i>Discount Earned</i>
<i>Other Bonds</i>	<i>Interest Earned--Loans</i>
<i>Real Estate</i>	<i>Interest Earned--In- vestments</i>
<b>SUSPENDED ITEMS</b>	<i>Rents Earned</i>
<i>Interest Accrued</i>	<i>Exchange</i>
<i>Receivable</i>	<i>Sundry Profits</i>
<i>Rents Receivable</i>	<b>SUSPENSE AC- COUNTS</b>
<i>Accrued Interest</i>	<i>Unearned Discount</i>
<i>Payable</i>	<i>Reserve for Interest</i>
<i>Expenses Paid in advance</i>	<i>Accrued</i>
<b>CURRENT EXPENSE</b>	<i>Provision for Dis- bursements</i>
<b>DUE FROM BANKS AND CASH ITEMS</b>	<b>DEPOSITS</b>
<b>RESERVES</b>	<i>Banks</i>
	<i>Individuals</i>
	<i>Certified Checks</i>
	<i>Cashier's Checks, Etc.</i>
<b>TOTAL</b>	<b>TOTAL</b>
<b>RESOURCES</b>	<b>LIABILITIES</b>

## RECEIVABLE AND PAYABLE

It needs only a little imagination to see that some interesting comparative statements may be prepared from the figures we have been studying. Let us prepare another sheet showing the total loans in one column and in an adjoining column the interest earned and next to that the average rate earned, carried out five or six places. Let us set up other sets of columns showing total investments, the interest earned and the rate. Let us do the same for discounts and the other earning accounts.

Let us then set down the amount of deposits, the estimated amount of interest payable and the rate. Let us add, also, columns for each of the expense reserve accounts established.

Then let us assemble the earnings into one column and the expenses into another and show the net gain or loss in an adjoining column.

Let us write all of these figures on the



## ACCRUED INTEREST

first line across a sheet for the first day of the month and those for the second day on the second line, and so on throughout the month. When we get a full year let us compare this month with last month and with the same month of last year. Let us compare year to date with year to date.

Now suppose that the bank president has such a statement on his desk each day showing regular and normal changes accruing gradually to the fateful June thirtieth and December thirty-first. What an improvement that would be over the figures that actually work out from the old method of taking discount into earnings when received and entering expenses when the bills are paid regardless of the period covered?

What an improvement it would be to know exactly where the bank stands every morning in its actual surplus as well as in the volume of its deposits,



## RECEIVABLE AND PAYABLE

loans, investments, due from banks, and cash?

One enthusiast for daily analysis in other lines of business has termed the process of daily accruals "The Science of Economy." He argues that if all concerns knew from day to day just how their earning and expense accounts were progressing they would not be so enthusiastic about the success of their enterprises. There would be no failures, he says, because every business man would know exactly where he stands at all times and would liquidate before the crash. This would save countless losses and the banks would be happy ever after.

Bank accounting is a simple process. Most of the general figures are demanded daily. Why not go a step further and make them tell the truth?



## APPENDIX



# HOW TO CALCULATE INTEREST ACCRUED AND UNEARNED DISCOUNT

## INTEREST

**I**NTEREST on bonds and on bonds and mortgages is always figured on what is called the month-and-day basis. This means, simply that the number of days in the period is ascertained by counting each full month in the period as thirty days regardless of the number of days in the month. The odd days are added. For example: In the period from April 1st to July 15th there are three months and fifteen days, or one hundred and five days.

Investments in bonds and bonds and mortgages are made for long periods of time. Arrangements are made in advance of the needs and there is abundant opportunity to adjust the interest periods

## ACCRUED INTEREST

to the dates most satisfactory to all concerned. The interest is, therefore, paid periodically and at stated periods, usually semi-annually.

Loans are made at any time. Some may be paid at any time. It is obvious, therefore, that a month-and-day basis of calculating interest would not be equitable. The practice is to charge interest for the actual number of days the money is lent. A simple rule for finding the number of days is to count the nights intervening.

In each case a day is one-three-hundred-sixtieth of a year. The tables are known as 360-day tables.

For the purpose of illustrating the method of calculating the interest accrued receivable on bonds owned by a hypothetical bank let us assume that its entire investment in bonds at the close of December 31, 1917, consisted of the bonds shown in Table No. 1.



## RECEIVABLE AND PAYABLE

Par Value	Name of Bond	Interest Payable	Book Value
\$10,000	Balto. & Ohio 1st...4%	A. & O. 1st	\$8,000
15,000	Lehigh Valley 1st...6%	J. & D. 1st	19,500
30,000	New York Cent. Deb..4%	M. & N. 1st	22,500
20,000	No. Pac. R. & Imp..4½%	J. & J. 1st	16,000
10,000	Mo. Pac. 1st & Ref...5%	F. & A. 1st	9,000
5,000	Phila. & Rdg. con...4%	M. & S. 1st	4,300
8,000	N. Y. City.....4½%	J. & D. 1st	7,520
20,000	Liberty Loan .....3½%	J. & D. 15th	20,000
15,000	Liberty Loan .....4%	M. & S. 15th	14,450
<hr/>			<hr/>
\$133,000			\$121,270

TABLE No. 1

## ACCRUED INTEREST

Name of Bond	Due	Date of Last Interest Payment	Time to Jan. 1st	Par Value	Rate	Accrued Interest
B. & O. 1st 4.....1948		Oct. 1	3 months	\$10,000	4	\$100.00
L. & V. 1st 6.....1948		Dec. 1	1 month	15,000	6	75.00
N. Y. Cent. Deb. 4..1934		Nov. 1	2 months	30,000	4	200.00
No. Pac. R. & I. 4½.2047		July 1	6 months	20,000	4½	450.00
Mo. Pac. 1st & R. 5.1923		Aug. 1	5 months	10,000	5	208.33
P. & R. Conv. 4....1937		Sept. 1	4 months	5,000	4	66.66
N. Y. City 4½.....1965		Dec. 1	1 month	8,000	4½	30.00
Liberty Loan 3½.....1947		Dec.15	10 mo. 15 d.	20,000	3½	29.17
Liberty Loan 4.....1942		Nov.15	1 mo. 15 d.	15,000	4	75.00
<hr/>						\$1,234.16

TABLE No. 2

## RECEIVABLE AND PAYABLE

Let us also assume that it has been the practice to credit interest to earnings only when received and that it is planned to begin to accrue interest daily on January 1st. It will then be necessary to calculate the interest earned by the bonds, but not yet received, as at the close of business December 31st. It will be helpful to construct a table so that the calculations may be made in a uniform manner. They will appear as in Table No. 2.

In order to present the matter as simply as possible the par values and the nominal interest rates were used in the above calculations. On this basis the total amount of interest accrued but not entered is \$1,234.16. Entries should be passed as follows:

*Debit*

*Interest Accrued Receivable—Bonds* .....\$1,234.16

*Credit*

*Interest Earned—Bonds* .....\$1,234.16

## ACCRUED INTEREST

### INTEREST ACCRUED RECEIVABLE ON BONDS.

Date	3½%	4%	4½%	5%	6%	Total	Int. Accrued Rec. Net
Inventory . .	\$20,000	\$10,000	\$20,000	\$10,000	\$15,000		
Dec. 31, 191—		30,000	8,000				
		5,000					
		15,000					
Totals	\$20,000	\$60,000	\$28,000	\$10,000	\$15,000	\$133,000	\$1,234.16

TABLE No. 3

## RECEIVABLE AND PAYABLE

The tickets should contain an explanation somewhat as follows:

*To credit earnings with the amount of interest earned on investments to January 1, 191—, as per schedule attached.*

Then attach a copy of the calculation shown in the above table.

Next, enter the bonds on the accrual sheets described in the text and illustrated on pages 30 and 31. The accrual sheet will appear as in Table No. 3.

Then proceed as described in the text beginning at page 17.

## DISCOUNT

The situation is exactly the reverse in the case of discounts. We have a great many notes varying in amounts and in length of unexpired terms. The discount for the unexpired term is unearned even though it has been credited to earnings.

In order to determine the amount of



## ACCRUED INTEREST

this unearned discount, we must determine the time to maturity of each note and calculate the discount. The simplest method is to reduce each note to a one-day basis by multiplying the amount by the number of unexpired days. Summarizing records should be set up in the manner as shown in Table No. 4.

If discounts are all made at the same rate much work may be saved by taking the total of the tickler for each day instead of the individual notes, as in Table No. 5.

If this plan is followed, it might be well to check the notes to the tickler before starting so as to be sure that all notes are entered and entered correctly.

Since these summary sheets are prepared by rates, the totals of each will furnish inventory figures for the unearned discount sheet shown on pages 46 and 47.

It would be well to prepare the interest and discount summaries so that they can



## RECEIVABLE AND PAYABLE

(Notes Discounted @ 6%.      Unearned Discount to January, 191—.)

Name	Maturity	Days	Amount	Am't for 1 day	Am't of unearned Discount for each note
A. B. . . . .	Jan. 3	3	\$10,000	\$30,000	\$5.00
C. D. . . . .	Jan. 13	13	4,500	58,500	9.75
E. F. . . . .	Feb. 3	34	1,000	34,000	5.67
G. H. . . . .	Mar. 10	69	2,000	138,000	23.00
				\$260,500	\$43.42

TABLE No. 4

## ACCRUED INTEREST

Maturity	Days to run	Total Amt.	Amt. for 1 day	Amt. of unearned discount
Jan. 2.....	2	\$150,000	\$300,000	\$50.00
Jan. 3.....	3	125,000	375,000	62.50
Jan. 4.....	4	10,000	40,000	6.67
Jan. 5.....	5	8,000	40,000	6.67
Jan. 6.....	6	3,000	18,000	3.00
			<hr style="width: 50%; margin-left: auto; margin-right: 0;"/>	<hr style="width: 50%; margin-left: auto; margin-right: 0;"/>
			\$773,000	\$128.84

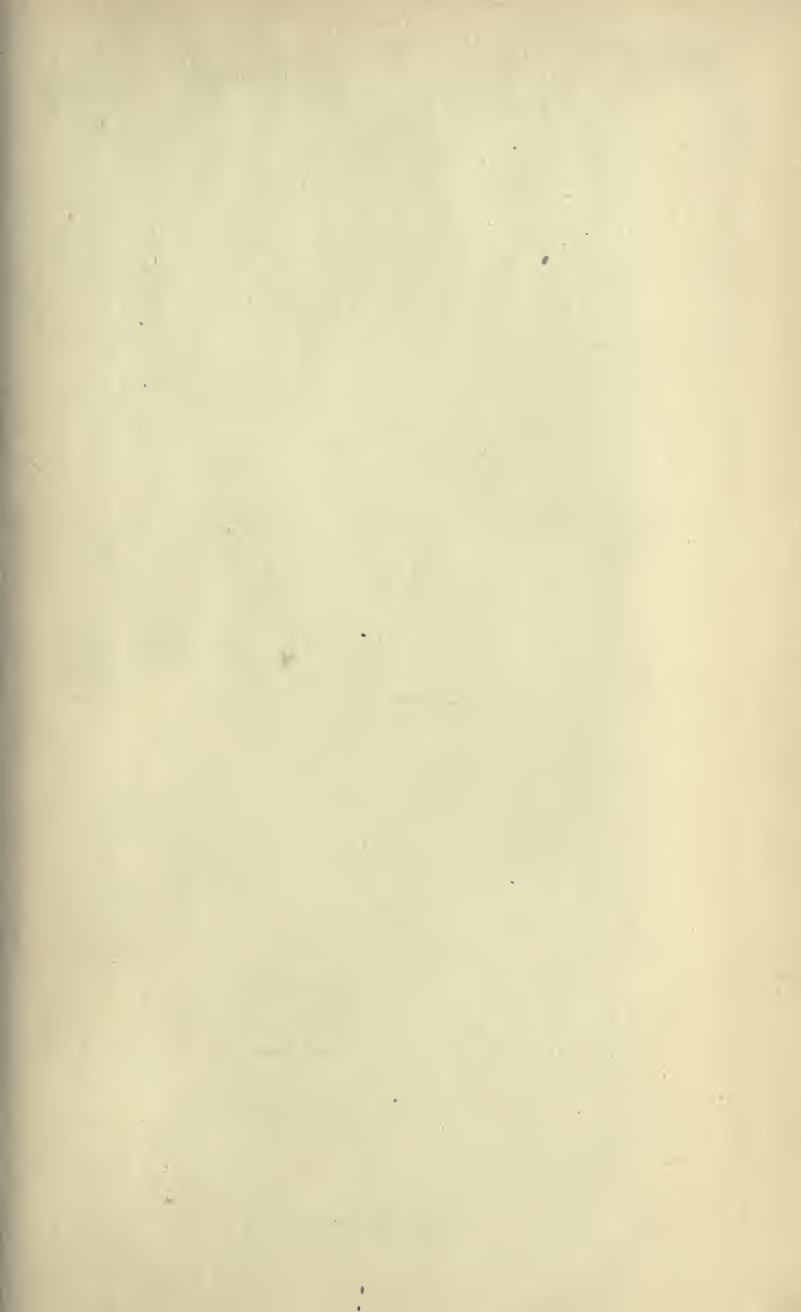
TABLE No. 5

## RECEIVABLE AND PAYABLE

be preserved for future reference. If the work is proved by calculating the discount on each note or group of notes and also on the total for one day the working papers may not be referred to again. One can never tell, however, when old working papers will be needed to settle some knotty problem. They should be held until the interest accrued receivable and the unearned discount accounts have been proved two or three times.







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