

On November 1, Alan Company signed a 120-day, 10% note payable, with a face value of \$22,500. What is the adjusting entry for the accrued interest at December 31 on the note? (use 360 days a year.)

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Introduction

When managing financial records, particularly notes payable, understanding how to accurately record accrued interest is essential. In this scenario, Alan Company entered into a 120-day note payable agreement on November 1, with a face value of \$22,500 and an annual interest rate of 10%. The key question is: what is the correct adjusting entry to record the interest accrued at December 31, given that the note is still outstanding? This article provides a comprehensive explanation of the calculation process, the relevant accounting principles, and the journal entry required.

Understanding the Details of the Note Payable

Before diving into the calculations, it's important to understand the specifics of the note:

- Issue date: November 1
- Term: 120 days
- Interest rate: 10% annually
- Face value: \$22,500
- Accounting period: Up to December 31
- Year basis: 360-day year (common in banking and financial calculations)

Step 1: Calculating the Daily Interest Rate

Interest is accrued on a daily basis, so the first step is to determine the interest rate per day.

Formula:

$\frac{1}{360}$

$$\text{Daily interest rate} = \frac{\text{Annual interest rate}}{\text{Number of days in year}}$$

Calculation:

$$\frac{10\%}{360} = \frac{0.10}{360} \approx 0.00027778 \text{ (or } 0.027778\% \text{ per day)}$$

Step 2: Determining the Number of Days from November 1 to December 31

Given the note is issued on November 1, and the interest needs to be accrued up to December 31, count the days:

- November: 30 days (since the note is issued on November 1, include November 1)
- December: 31 days

Total days:

$$30 + 31 = 61 \text{ days}$$

Note: Using a 360-day year simplifies the calculation, so the days are counted as per the basis.

Step 3: Calculating the Accrued Interest

The interest for the period can be calculated using the formula:

$$\text{Interest} = \text{Face value} \times \text{Annual interest rate} \times \frac{\text{Number of days accrued}}{360}$$

Calculation:

$$\text{Interest} = \$22,500 \times 10\% \times \frac{61}{360}$$

Breaking it down:

$$\$22,500 \times 0.10 = \$2,250$$

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$$\text{Interest} = \$2,250 \times \frac{61}{360} \approx \$2,250 \times 0.1694 \approx \$381.15$$

Result:

The accrued interest up to December 31 is approximately \$381.15.

Step 4: Recording the Adjusting Entry

In accordance with accrual accounting principles, interest expense must be recorded in the period it is incurred, even if it has not yet been paid. Therefore, at December 31, Alan Company needs to record an adjusting journal entry to recognize the interest accrued.

Journal Entry:

Account Title	Debit	Credit
Interest Expense	\$381.15	
Interest Payable		\$381.15

Explanation:

- Interest Expense increases to reflect the cost incurred during the period.
- Interest Payable increases (liability) to acknowledge the amount owed but not yet paid.

Step 5: Significance of the Adjusting Entry

This journal entry ensures that Alan Company's financial statements accurately reflect the company's liabilities and expenses at the end of the accounting period. It aligns expenses with revenues (matching principle) and ensures that the company's liabilities are not understated.

Additional Considerations in Note Accounting

1. Interest Calculation Basis

Using a 360-day year is standard in many financial contexts, especially in banking. However, some companies may use a 365-day year, which would slightly change the calculation.

2. Payment of Interest

The interest accrued will typically be paid when the note matures or at specified intervals. The initial note's face value and interest rate determine the total interest payable, but adjustments like this are necessary to reflect the interest accrued up to the reporting date.

3. Final Settlement

At maturity (after 120 days from November 1, around March 1), Alan Company will pay the face value plus the total interest accrued over the entire period.

Summary

In summary, the key steps to determine the adjusting entry for accrued interest at December 31 on a note payable are:

- Calculate the daily interest rate based on the annual rate and the 360-day basis.
- Count the number of days from the note's issue date to the reporting date.
- Compute the interest accrued over this period.
- Record an adjusting journal entry recognizing interest expense and interest payable.

Final Adjusting Entry:

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Debit: Interest Expense \$381.15

Credit: Interest Payable \$381.15

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This entry ensures that Alan Company's financial records accurately reflect the accrued interest as of December 31, adhering to proper accounting standards.

Conclusion

Properly accounting for notes payable and accrued interest is vital for accurate financial reporting. By following a systematic approach—understanding the terms of the note, calculating daily interest, and making appropriate adjusting entries—companies can ensure their financial statements reflect their true financial position. In this scenario, Alan Company's accrued interest at December 31 amounts to approximately \$381.15, which should be recorded as an interest expense and a liability until it is paid.

Frequently Asked Questions

How do you calculate the accrued interest on the note payable as of December 31?

To calculate the accrued interest, multiply the face value (\$22,500) by the annual interest rate (10%), then by the fraction of the year from November 1 to December 31 (61 days). Using a 360-day year: $\text{Interest} = \$22,500 \times 10\% \times (61/360) \approx \381.25 .

What is the adjusting journal entry to record accrued interest

on December 31?

The adjusting entry is: Debit Interest Expense \$381.25 and Credit Interest Payable \$381.25.

Why is it necessary to record accrued interest at year-end on this note?

Recording accrued interest ensures that expenses are matched to the period in which they are incurred, providing an accurate financial picture in accordance with the matching principle.

How does the 360-day year assumption affect the interest calculation?

Using a 360-day year simplifies calculations by assuming each month has 30 days, which is common in financial reporting, affecting the proportion of interest accrued over the period.

If the note was signed on November 1, how many days accrue interest by December 31?

Interest accrues for 61 days—from November 1 to December 31—in a 360-day year calculation.

What is the significance of the face value in calculating interest on the note?

The face value (\$22,500) is the principal amount on which interest is calculated, representing the amount owed at maturity before any payments or adjustments.

Additional Resources

On November 1, Alan Company signed a 120-day, 10% note payable, with a face value of \$22,500. What is the adjusting entry for the accrued interest at December 31 on the note? (Use 360 days a year.)

Understanding how to account for accrued interest on notes payable is essential for accurate financial reporting. In this guide, we'll walk through the process step-by-step, illustrating how to determine the interest accrued from November 1 to December 31 and how to record the appropriate adjusting journal entry. This analysis is particularly relevant for accountants, financial managers, and students seeking clarity on adjusting entries related to short-term notes.

Overview of the Scenario

In this case, Alan Company issued a note payable on November 1 with the following details:

- Principal (Face value): \$22,500
- Interest rate: 10% annually

- Term: 120 days
- Issue date: November 1
- Maturity date: (Not explicitly required for this calculation but can be deduced)
- Interest calculation basis: 360 days per year (a common assumption in financial calculations)

Our goal is to determine the interest accrued from November 1 to December 31 and prepare the corresponding adjusting journal entry at December 31.

Step 1: Calculate the Total Interest on the Note

The total interest for the entire 120-day period can be calculated using the formula:

$$\text{Interest} = \text{Principal} \times \text{Rate} \times \frac{\text{Time (days)}}{360}$$

Plugging in the known values:

- Principal = \$22,500
- Annual interest rate = 10% (or 0.10)
- Total days = 120

So,

$$\text{Total interest} = 22,500 \times 0.10 \times \frac{120}{360}$$

Calculating:

$$\text{Total interest} = 22,500 \times 0.10 \times \frac{1}{3} = 22,500 \times 0.10 \times 0.3333 \approx 750$$

Total interest over 120 days = \$750

Step 2: Determine the Interest Accrued from November 1 to December 31

Next, we need to calculate the interest accrued up to December 31. Since the note is issued on November 1, the period from November 1 to December 31 covers:

- November: 30 days (assuming 30 days for simplicity or as per the 360-day basis)
- December: 30 days

Total days from November 1 to December 31:

$$30 + 30 = 60 \text{ days}$$

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Using the same formula for the accrued interest:

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$$\text{Accrued interest} = 22,500 \times 0.10 \times \frac{60}{360}$$

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Calculating:

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$$22,500 \times 0.10 \times \frac{1}{6} = 22,500 \times 0.10 \times 0.1667 \approx 375$$

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Interest accrued as of December 31 = \$375

Step 3: Recognize the Need for an Adjusting Entry

Since interest is earned as time passes, but not yet paid at December 31, an adjusting entry is necessary to recognize the expense and the liability.

Key points:

- The interest expense increases by \$375
- The interest payable (a liability) increases by \$375

This ensures that the financial statements reflect the expense incurred during the period, even though the cash has not yet been paid.

Step 4: Prepare the Adjusting Journal Entry

The journal entry on December 31 to record accrued interest is:

Debit: Interest Expense — \$375

Credit: Interest Payable — \$375

This entry increases expenses on the income statement and recognizes a liability on the balance sheet.

Step 5: Impact on Financial Statements

Income Statement

- Interest Expense: increases by \$375, reducing net income.

Balance Sheet

- Liabilities: Interest Payable increases by \$375, reflecting the obligation to pay interest in the future.

Additional Considerations

Use of 360-Day Year

Using 360 days simplifies calculations and is common in financial reporting, especially in banking and notes payable scenarios. It's important to specify this assumption to ensure consistency.

When to Record the Entry

- The adjusting entry is recorded at the end of the accounting period, December 31.
- When the interest is paid (e.g., at maturity), the entry will be reversed or adjusted accordingly.

Completing the Note's Life

- The remaining interest (from January 1 to the note's maturity date) will be accrued and paid at the note's maturity.
- The total interest of \$750 will be split across the periods, with the initial \$375 recognized by December 31.

Summary: Key Takeaways

- The interest on a note payable is accrued over time, even if not yet paid.
- The calculation relies on the principal, annual interest rate, and the number of days.
- Using a 360-day year standard simplifies interest calculations.
- The adjusting entry ensures that expenses and liabilities are accurately reflected at period-end.

Final Thoughts

Understanding how to adjust for accrued interest is fundamental for accurate financial reporting. This process involves calculating the interest accrued over a specific period, recognizing the related expenses and liabilities, and ensuring that financial statements properly reflect the company's obligations and expenses. By following the step-by-step method outlined above, accountants can confidently handle similar scenarios involving notes payable and accrued interest.

In summary, the adjusting entry for the accrued interest at December 31 on Alan Company's note payable is:

Debit: Interest Expense — \$375
Credit: Interest Payable — \$375

This ensures that the financial statements accurately portray the company's liabilities and expenses related to the note payable as of December 31.

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