

## Bonds Payable

Large companies need large amounts of money to finance operations. They may borrow long-term from banks or issue bonds payable to the public to raise the money. Bonds payable are groups of long-term notes payable issued to multiple lenders, called bondholders. By issuing bonds payable, a company can borrow millions of dollars from thousands of investors, rather than depending on a loan from one single bank or lender. Each investor can buy a specified amount of bonds.

تحتاج الشركات الكبيرة مبالغ كبيرة لتمويل عملياتها التشغيلية. هذه الشركات قد تقترض أموالاً طويلة الأجل من البنوك أو قد تُصدر سندات مستحقة الأجل للجمهور لجمع المال.

السندات المستحقة هي مجموعة من السندات طويلة الأجل يتم إصدارها لمقرضين متعددين، يُدعون حاملي السندات. بإصدار السندات المستحقة، يمكن للشركة أن تقترض ملايين الدولارات من آلاف المستثمرين، أكثر من اعتمادها على قرض من بنك واحد أو مُقرض واحد. كل مُستثمر يمكن أن يشتري كمية مُحددة من السندات.

Each bondholder gets a bond certificate, which shows the name of the company that borrowed the money, exactly like a note payable. The certificate states the principal, which is the amount the company has borrowed. The bond's principal amount is also called maturity value, or par value. The company must then pay each bondholder the principal amount at a specific future date, called the maturity date.

كل حامل سند يحصل على شهادة سند، والتي تُظهر اسم الشركة التي اقترضت المال، تماماً مثل أوراق الدفع. تذكر الشهادة أصل المبلغ، والذي هو المبلغ الذي اقترضته الشركة. مبلغ أساس الدين يُدعى أيضاً قيمة الاستحقاق، أو القيمة الاسمية. يجب على الشركة أن تدفع لكل حامل سند المبلغ الأساس بتاريخ مستقبلي محدد يُدعى تاريخ الاستحقاق.

There are many similarities between the accounting for short-term notes payable and long-term notes payable. People buy bonds to earn interest. The bond certificate states the interest rate that the company will pay and the dates the interest is due, generally semi-annually (twice a year).

هناك الكثير من التشابهات بين المحاسبة عن أوراق الدفع قصيرة الأجل وأوراق الدفع طويلة الأجل. فالأشخاص يشترون السندات ليكسبوا الفوائد. شهادة السند تبين نسبة الفائدة والتي على الشركة دفعها وتواريخ استحقاق الفوائد، عادة نصف سنوية (مرتين بالسنة).

## Bond terms

Bond terminology is important to understand.

من المهم جداً فهم مصطلحات السندات

**Principal amount (also called maturity value, or par value):** The amount the borrower must pay back to the bondholders on the maturity date.

المبلغ الأساس (يُدعى قيمة الاستحقاق، أو القيمة الاسمية): المبلغ الذي على المقرض إعادته لحملة السندات بتاريخ الاستحقاق.

**Maturity date:** The date on which the borrower must pay the principal amount to the bondholders.

تاريخ الاستحقاق: التاريخ الذي على المقرض دفع المبلغ الأساس لحملة السندات.

**Stated interest rate:** The annual rate of interest that the borrower pays the bondholders.

معدل الفائدة المنصوص عليه: المعدل السنوي للفائدة الذي يدفعها المقرض لحملة الأسهم

There are various types of bonds, including the following:

هناك أنواع متعددة من السندات، تتضمن التالي:

• **Term bonds** all mature at the same specified time. For example, \$100,000 of term bonds may all mature 5 years from today.

سندات لأجل تستحق جميعها بزمان محدد واحد. مثلاً، 100000 سندات لأجل تستحق جميعها بعد 5 سنوات من اليوم.

• **Serial bonds** mature in installments at regular intervals. For example, a \$500,000, 5-year serial bond may mature in \$100,000 annual installments over a 5-year period.

سندات متسلسلة تستحق بأقساط ضمن فترات منتظمة. مثلاً 500000 سندات متسلسلة قد تستحق بأقساط سنوية مبلغها 100000 خلال فترة 5 سنوات.

• **Secured bonds** give the bondholder the right to take specified assets of the issuer if the issuer fails to pay principal or interest. A mortgage on a house is an example of a secured bond.

السندات بضمان: تعطي حامل السند الحق بأخذ أصول معينة من محرر السند إذا أخفق بدفع أصل المبلغ أو الفوائد. رهن المنزل هو مثال على سند بضمان.

• **Debentures** are unsecured bonds that aren't backed by assets. They are backed only by the goodwill of the bond issuer.

سندات Debentures هي سندات غير مضمونة بأصول ملموسة. هي مدعومة بالسمعة التجارية لمُحرر السند.

#### Bond Pricing

##### Maturity (Par) Value

- \$1000 bond issued for \$1000
- No discount or premium

##### Discount

- \$1000 bond issued for \$980
- Issued below maturity value

##### Premium

- \$1000 bond issued for \$1015
- Issued above maturity value

A bond can be issued at any price agreed upon by the issuer and the bondholders. There are three basic categories of bond prices. A bond can be issued at:

السند يمكن أن يتم إصداره بأي سعر متفق عليه من قبل مُصدر السند وحملة السندات. هناك ثلاث فئات لأسعار السندات. السند يمكن أن يتم إصداره بـ:

• **Maturity (par) value.** Example: A \$1,000 bond issued for \$1,000. A bond issued at par has no discount or premium.

قيمة الاستحقاق (القيمة الاسمية): مثال: سند بقيمة \$1000 يتم إصداره بـ \$1000. السند المصدر بقيمة اسمية يكون بلا حسم ولا علاوة.

• **Discount (or Bond Discount),** a price below maturity (par) value. Example: A \$1,000 bond issued for \$980. The discount is \$20 (\$1,000 – \$980).

حسم أو حسم سند: السعر أقل من قيمة الاستحقاق أو القيمة الاسمية. مثال: سند بقيمة \$1000 يتم إصداره بـ \$980. الحسم هو \$20 (\$980-\$1000)

• **Premium (or Bond Premium)**, a price above maturity (par) value. Example: A \$1,000 bond issued for \$1,015. The premium is \$15 (\$1,015 – \$1,000).

علاوة أو علاوة السند: السعر أعلى من قيمة الاستحقاق. مثال: سند بـ \$1000 يتم إصداره بـ \$1015. العلاوة \$15 (\$1015-\$1000)

The issue price of a bond does not affect the required payment at maturity. In all of the preceding cases, the company must pay the maturity value of the bonds when they mature.

سعر الإصدار للسند لا يؤثر على المبلغ المطلوب بتاريخ الاستحقاق. في كل الحالات السابقة، على الشركة أن تدفع قيمة الاستحقاق للسندات عندما تستحق.

Bond prices are quoted as a percentage of maturity value. For example,

- A \$1,000 bond quoted at 100 is bought or sold for 100% of maturity value, (\$1,000. x 1.00)
- A \$1,000 bond quoted at 101.5 has a price of \$1,015 (\$1,000 × 1.015).
- A \$1,000 bond quoted at 89.75 has a price of \$897.50 (\$1,000 × .8975).

The issue price of a bond determines the amount of cash the company receives when it issues the bond. In all cases, the company must pay the bond's maturity value to retire it at maturity.

أسعار السندات تُقدّر (تُسعر) كنسبة من قيمة الاستحقاق. كمثال،

- سند \$1000 يُسعر بـ 100 يُشترى أو يُباع بنسبة 100% من قيمة الاستحقاق
- سند \$1000 يُسعر بـ 101.5 يكون له سعر 1015 (\$1000 × 1.015)
- سند \$1000 يُسعر بـ 89.75 يكون له سعر 897.50 (\$1000 × 0.8975)

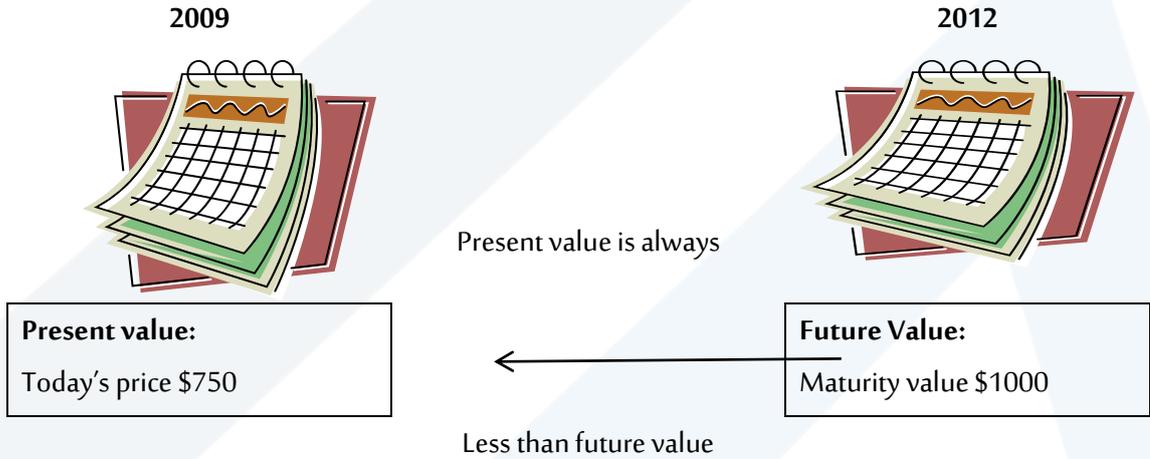
سعر الإصدار للسند يُحدّد كمية النقد التي تتلقاها الشركة عندما تُصدر السند. بكل الحالات، الشركة عليها أن تدفع قيمة السند الاسمية بتاريخ الاستحقاق.

## Present Value

Money earns income over time, a fact called the time value of money. Let's see how the time value of money affects bond prices. Assume that a \$1,000 bond reaches maturity three years from now and carries no interest. Would you pay \$1,000 to purchase this bond? No, because paying \$1,000 today to receive \$1,000 later yields no income on your investment. How much would you pay today in order to receive \$1,000 in three years? The answer is some amount less than \$1,000. Suppose \$750 is a fair price. By investing \$750 now to receive \$1,000 later, you will earn \$250 over the three years. The diagram that follows illustrates the relationship between a bond's price (present value) and its maturity amount (future value).

المال يكسب دخل بمرور الوقت، الحقيقة تقول القيمة الزمنية للنقود. لنرى كيف القيمة الزمنية للنقود تؤثر على أسعار السند. افترض بأن سند بقيمة \$1000 يصل إلى الاستحقاق بعد ثلاث سنوات من الآن ولا يحمل أي فوائد. هل ستدفع \$1000 لشراء ذلك السند؟ لا، لأن دفع \$1000 اليوم لاستلام \$1000 لاحقاً لا ينتج عنه أي دخل لاستثمارك.

كم ستدفع اليوم لتستلم \$1000 خلال ثلاث سنوات؟ الجواب هو مبلغ أقل من \$1000. افترض أن \$750 هو سعر عادل. من خلال استثمار \$750 اليوم لاستلام \$1000 لاحقاً، ستكسب \$250 خلال ثلاث سنوات. الشكل التالي يشرح العلاقة بين سعر السند (القيمة الحالية) ومبلغ الاستحقاق (القيمة المستقبلية).



Bonds are sold at their market price, which is the present value of the interest payments the bondholder will receive while holding the bond plus the bond principal paid at the end of the bond's life.

تُباع السندات بسعرها السوقي، والذي هو القيمة الحالية لدفعات الفائدة التي سيتلقاها حامل السند طالما هو محتفظ بالسند بالإضافة لأساس السند الذي سيتم دفعه بنهاية حياة السند.

#### Two interest rates work together to set the price of a bond:

هناك معدلين للفائدة يعملان معاً لتحديد سعر السند:

- **The stated interest rate** determines the amount of cash interest the borrower pays each year. The stated interest rate is printed on the bond and does not change from year to year.  
معدل الفائدة المنصوص عنه يحدد كمية الفائدة النقدية التي سيدفعها المقترض كل عام. معدل الفائدة المنصوص عنه تتم طباعته ولا يتغير من عام لآخر.
- **The market interest rate (also known as the effective interest rate)** is the rate that investors demand to earn for loaning their money. The market interest rate varies daily. A company may issue bonds with a stated interest rate that differs from the market interest rate, due to the time gap between the decision of what the stated rate should be and the actual issuance of the bonds.  
معدل الفائدة السوقي (وأيضاً يُسمى معدل الفائدة الفعال) هو معدل يطلبه المستثمرون كريح لإقراض أموالهم. وهذا المعدل السوقي للفائدة يتغير يومياً. قد تصدر الشركة سندات بسعر فائدة منصوص عليه يختلف عن معدل الفائدة السوقي بناء على الفجوة الزمنية بين قرار ما الذي يجب أن تكون عليه نسبة الفائدة المنصوص عليها والإصدار الفعلي للسندات.

If the stated rate is equal to the market rate, the bonds will be issued at their maturity value. If the stated rate is less than the market rate, the bonds will sell below maturity value – a discount. Conversely, if the stated rate is greater than the market rate, bonds will be issued above maturity value – a premium. This is because the bonds are paying better interest than the market indicates; the market pays more because the bond is paying more interest.

إذا كان المعدل المنصوص عليه مساوياً للسعر السوقي، فإن السندات يجب أن تُصدر بقيمتها الاسمية.

إذا كان المعدل المنصوص عليه أقل من المعدل السوقي، فإن السندات يجب أن تُباع بأقل من قيمة الاستحقاق- بخصم إصدار بالمقابل، إذا كان المعدل المنصوص عليه أكبر من المعدل السوقي، فإن السندات يجب أن تُصدر بأعلى من قيمة الاستحقاق- بعلاوة إصدار. وهذا بسبب أن السندات تدفع فوائد أعلى مما أعلن السوق؛ السوق يدفع أكثر بسبب أن السند يدفع فوائد أكثر.

### Bond Interest Rates

Stated Interest rate	Market interest rate
<ul style="list-style-type: none"> <li>Determines amount of cash interest borrower pays each year</li> <li>Remains constant</li> </ul>	<ul style="list-style-type: none"> <li>Rate investors demand for loaning money</li> <li>Varies daily</li> </ul>

Stated interest rate		Market interest rate		Issue price of bonds payable
9%	=	9%	→	Maturity value
9%	<	10%	→	Discount (below maturity value)
9%	>	8%	→	Premium (above maturity value)

Bond prices depend on market rate of interest, stated rate of interest, and time:

#### Requirement:

- Determine whether the following bonds payable will be issued at maturity value, at a premium, or at a discount.
  - The **market interest rate** is 7%. Denver issues bonds payable with a **stated rate** of a 6.5%
  - Houston **issued** 7% bonds payable when the **market rate** was 6.75%
  - Cincinnati **issued** 8% bonds when the **market interest rate** was 8%
  - Miami Company issued bonds payable that pay **stated interest** of 7%. At issuance, the **market interest rate** was 8.25 %

The market interest rate is 7%. Denver issues bonds payable with a stated rate of a 1/2%	Discount
Houston issued 7% bonds payable when the market rate was 6 3/4%	Premium
Cincinnati issued 8% bonds when the market interest rate was 8%	Par value
Miami Company issued bonds payable that pay stated interest of 7%. At issuance, the market interest rate was 8 1/4%	Discount

### Measure interest expense on bonds using the straight-line amortization method.

#### Accounting for Bonds Issued at Maturity Value

The journal entry to record issuing a bond payable at maturity value includes a debit to Cash and a credit to Bonds payable. In this example, maturity value is \$100,000 and the interest rate is 8%. These bonds pay interest semi-annually as do most bonds. Every six months, the company pays interest of \$4,000 to the bondholders. This is computed by the interest formula --  $\$100,000 \times 8\% \times \frac{1}{2}$ . Interest expense is debited and Cash is credited.

Date	Description	Debit	Credit
Issue date	Cash	100000	
	Bonds payable		100000
	To record issuance of 8% bonds at maturity value		
Int.pmt dates	Interest expense	4000	
	Cash ( $\$100000 \times 8\% \times \frac{1}{2}$ )		4000
	To record semi-annual interest payment		

When the bonds mature, Bonds payable is debited, which will zero out the account. Cash is credited to record payment to the bondholders.

Date	Description	Debit	Credit
Maturity date	Bonds payable	100000	
	Cash		100000
	To record payment of bonds at maturity		

#### Accounting for Bonds Issued at a Discount

Market conditions may force a company to accept a discount price for its bonds. Suppose a company issues \$100,000 of its 8%, 10-year bonds at 98. The company receives \$98,000 ( $\$100,000 \times 0.98$ ) at issuance and makes this journal entry, which debits Cash for the amount received and credits Bonds payable for the maturity value of the bond. The difference of \$2,000 is the discount, and has its own account. Discount on bonds payable is a contra account to Bonds payable.

Date	Description	Debit	Credit
Issue date	Cash	98000	
	Discount on bonds payable (Contra account to Bonds payable)	2000	
	Bonds payable		100000
	To record issuance of 100000, 10 year, 8% bonds at 98		

### Carrying Value of Bonds Payable

Bonds payable minus the discount gives the carrying amount of the bonds. The company would report these bonds payable as shown here immediately after issuance.

<u>Long-term liabilities</u>		
Bonds payable	\$100000	
Less: Discount on bonds payable	(\$2000)	
Carrying value		\$98000

The company borrowed \$98,000, but still must pay \$100,000 when the bonds mature 10 years later. What happens to the \$2,000 discount? The discount is additional interest expense. The discount becomes interest expense through a process called amortization, the gradual reduction of an item over time. We can amortize a bond discount by dividing it into equal amounts for each interest period. This method is called straight-line amortization and it works very much like the straight-line depreciation method. This journal entry shows this process. The Discount is credited (reduced) by \$100. This is computed by dividing the \$2,000 discount by 10 years, the life of the bond, multiplied by 6/12 of a year. The credit to Cash is the same as before -  $\$100,000 \times 8\% \times 6/12$ . Interest expense is debited for the interest payment plus the discount amortization.

Date	Description	Debit	Credit
Int.pmt dates	Interest expense	4100	
	Discount on bonds payable (2000\10×6\12)		100
	Cash ( $\$100000 \times 8\% \times 6/12$ )		4000

### Accounting for Bonds Issued at a Premium

To illustrate a bond premium, let's change the example. Assume the bonds are priced at 104 (104% of maturity value). In that case, the company receives \$104,000 cash upon issuance. Bonds payable and the Premium account each carry a credit balance. The Premium is a companion account to Bonds payable.

Date	Description	Debit	Credit
Issue date	Cash	104000	
	Premium on bonds payable (Companion account to Bonds payable)		4000
	Bonds payable		100000
	To record issuance of 100000, 10 year, 8% bonds at 104		

### Carrying Value of Bonds Payable

The Premium on bonds payable is added to the Bonds payable to determine the bond carrying amount. The company would report these bonds payable as shown here immediately after issuance.

<u>Long-term liabilities</u>		
Bonds payable	\$100000	
Plus: Premium on bonds payable	\$4000	
Carrying value		\$104000

The company borrowed \$104,000, but only has to pay \$100,000 when the bonds mature 10 years later. What happens to the \$4,000 Premium account? The Premium reduces Interest expense through amortization.

This journal entry shows this process. The Premium is debited (reduced) by \$200. This is computed by dividing the \$4,000 premium by the number of years of the bond's life, 10, multiplied by 6/12 of a year. The credit to Cash is the same as before - \$100,000 x 8% x 6/12. Interest expense is debited for the interest payment minus the premium amortization.

Date	Description	Debit	Credit
Int.pmt dates	Interest expense	3800	
	Premium on bonds payable (4000\10×6\12)	200	
	Cash (\$100000×8%×6\12)		4000

After the first interest payment entry is posted, the Premium account will be reduced by \$200. The resulting carrying value is \$103,800 = the \$100,000 maturity value plus the \$3,800 premium.

### Carrying Value

Bonds payable	Premium						
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%; text-align: right;">100000</td> </tr> </table>		100000	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: right;">200</td> <td style="width: 50%; text-align: right;">\$4000</td> </tr> <tr> <td style="width: 50%;"></td> <td style="width: 50%; text-align: right;">3800</td> </tr> </table>	200	\$4000		3800
	100000						
200	\$4000						
	3800						
<div style="border: 1px solid black; display: inline-block; padding: 5px;">             Carrying value after first interest payment= \$103800           </div>							

### Adjusting Entries for Bonds Payable

Companies may issue bonds payable when they need cash. The interest payments seldom occur on December 31, so interest expense must be accrued at year end. The accrual entry should also amortize any bond discount or premium.

Suppose a company issued \$100,000 of 8%, 10-year bonds at a \$2,000 discount on October 1, 2010. The interest payments occur on March 31 and September 30 each year. On December 31, the company accrues interest and amortizes bond discount for three months. Interest payable is credited for three months (October, November, and December). Discount on bonds payable must also be amortized for these three months.

The next semiannual interest payment occurs on March 31, 2011, and the company makes the journal entry on the next slide.

Date	Description	Debit	Credit
31\12	Interest expense	2050	
	Discount on bonds payable $(2000\20)\times 3\6$		50
	Interest payable $(\$100000\times 8\%\times 3\12)$		2000

The next semi-annual interest payment occurs on March 31, 2011, and the company makes this journal entry. Interest payable is debited to zero out the adjusting entry. Cash is credited for the full semi-annual interest payment. The discount is amortized for three months. Interest expense is a “plug” number – the number that makes the entry balance.

Date	Description	Debit	Credit
31\3	Interest payable	2000	
	Interest expense	2050	
	Discount on bonds payable $(2000\10)\times 3\12$		50
	Cash $(\$100000\times 8\%\times 6\12)$		4000

Suppose a company issue bonds on March 31, 2010

Date	Description	Debit	Credit
30\9\2010	Interest expense	4100	
	Discount on bonds payable $(2000\20)$		100
	Cash $(\$100000\times 8\%\times 6\12)$		4000

Date	Description	Debit	Credit
31\12\2010	Interest expense	2050	
	Discount on bonds payable $(2000\20)\times 3\6$		50
	Interest payable $(\$100000\times 8\%\times 3\12)$		2000

Date	Description	Debit	Credit
31\3\2011	Interest payable	2000	
	Interest expense	2050	
	Discount on bonds payable $(2000\10)\times 3\12$		50
	Cash $(\$100000\times 8\%\times 6\12)$		4000

**BE14-2** The **Colson** Company issued \$300,000 of 10% bonds on January 1, 2014. The bonds are due January 1, 2019, with interest payable each July 1 and January 1. The bonds are issued at face value. Prepare Colson's journal entries for (a) the January issuance, (b) the July 1 interest payment, and (c) the December 31 adjusting entry.

(a)	Cash.....	300,000	
	Bonds Payable .....		300,000
(b)	Interest Expense .....	15,000	
	Cash (\$300,000 X 10% X 6/12) .....		15,000
(c)	Interest Expense .....	15,000	
	Interest Payable.....		15,000

**BE14-3** Assume the bonds in BE14-2 were issued at 98. Prepare the journal entries for (a) January 1, (b) July 1, and (c) December 31. Assume The Colson Company records straight-line amortization semiannually.

(a)	Cash (\$300,000 X 98%) .....	294,000	
	Discount on Bonds Payable .....	6,000	
	Bonds Payable .....		300,000
(b)	Interest Expense .....	15,600	
	Discount on Bonds Payable		
	(\$6,000 X 1/10 = \$600) .....		600
	Cash (\$300,000 X 10% X 6/12) .....		15,000
(c)	Interest Expense .....	15,600	
	Discount on Bonds Payable		
	(\$6,000 X 1/10 = \$600) .....		600
	Interest Payable.....		15,000

**BE14-4** Assume the bonds in BE14-2 were issued at 103. Prepare the journal entries for (a) January 1, (b) July 1, and (c) December 31. Assume The Colson Company records straight-line amortization semiannually.

(a)	Cash (\$300,000 X 103%).....	309,000	
	Bonds Payable .....		300,000
	Premium on Bonds Payable .....		9,000
(b)	Interest Expense .....	14,100	
	Premium on Bonds Payable	900	
	(\$9,000 X 1/10 = \$900) .....		
	Cash (\$300,000 X 10% X 6/12).....		15,000
(c)	Interest Expense .....	14,100	
	Premium on Bonds Payable	900	
	(\$9,000 X 1/10 = \$900) .....		
	Interest Payable .....		15,000

**BE14-5** Devers Corporation issued \$400,000 of 6% bonds on **May 1, 2014**. The bonds were dated January 1, 2014, and mature January 1, 2017, with interest payable July 1 and January 1. The bonds were issued at **face value** plus accrued interest. Prepare Devers's journal entries for (a) the May 1 issuance, (b) the July 1 interest payment, and (c) the December 31 adjusting entry.

(a)	Cash	408,000	
	Bonds Payable .....		400,000
	Interest Payable (\$400,000 X 6% X 4/12).....		8,000
(b)	Interest Expense .....	4,000	
	Interest Payable	8,000	
	Cash (\$400,000 X 6% X 6/12) .....		12,000
(c)	Interest Expense .....	12,000	
	Interest Payable .....		12,000

**BE14-6** On January 1, 2014, JWS Corporation issued \$600,000 of 7% bonds, due in 10 years. The bonds were issued for \$559,224, and pay interest **each July 1 and January 1**. JWS uses the effective-interest method. Prepare the company's journal entries for (a) the January 1 issuance, (b) the July 1 interest payment, and (c) the December 31 adjusting entry. Assume an effective-interest rate of 8%.

(a)	Cash.....	559,224	
	Discount on Bonds Payable .....	40,776	

	Bonds Payable .....		600,000
(b)	Interest Expense ( $\$559,224 \times 8\% \times 6/12$ ).....	22,369	
	Cash ( $\$600,000 \times 7\% \times 6/12$ ) .....		21,000
	Discount on Bonds Payable .....		1,369

discount				Balance sheet			
Jan. 1	40,776	Dec. 31	1369			<b>Long term liabilities</b>	
Bal.	<u>39407</u>					Bonds payable	600000
						- discount on bonds payable	(39407)
						Carrying value	560593

Or carrying value=  $559224 + 1369 = 560593$

(c)	Interest Expense ( $\$560,593 \times 8\% \times 6/12$ ).....	22,424	
	Interest Payable .....		21,000
	Discount on Bonds Payable .....		1,424

**BE14-7** Assume the bonds in BE14-6 were issued for \$644,636 and the effective-interest rate is 6%. Prepare the company's journal entries for (a) the January 1 issuance, (b) the July 1 interest payment, and (c) the December 31 adjusting entry.

(a)	Cash.....	644,636	
	Bonds Payable .....		600,000
	Premium on Bonds Payable .....		44,636
(b)	Interest Expense ( $\$644,636 \times 6\% \times 6/12$ ).....	19,339	
	Premium on Bonds Payable ( $21000 - 19339$ ).....	1,661	
	Cash ( $\$600,000 \times 7\% \times 6/12$ ) .....		21,000

Premium				Balance sheet			
Dec. 31	1,661	Jan.1	44636			<b>Long term liabilities</b>	
		Bal.	<u>42975</u>			Bonds payable	600000
						+ premium on bonds payable	<u>42975</u>
						Carrying value	642975

Or carrying value=  $644636 - 1661 = 642975$

(c)	Interest Expense ( $\$642,975 \times 6\% \times 6/12$ ).....	19,289	
	Premium on Bonds Payable .....	1,711	
	Interest Payable		21,000

**BE14-8** Teton Corporation issued \$600,000 of 7% bonds on **November 1**, 2014, for \$644,636. The bonds were dated November 1, 2014, and mature in 10 years, with interest payable each **May 1** and **November 1**. Teton uses the effective-interest method with an effective rate of 6%. Prepare Teton's December 31, 2014, adjusting entry.

Interest Expense ( $\$644,636 \times 6\% \times 2/12$ ).....	6,446	
Premium on Bonds Payable .....	554	
Interest Payable ( $\$600,000 \times 7\% \times 2/12$ ).....		7,000

**BE14-9** At December 31, 2014, Hyasaki Corporation has the following account balances:

Bonds payable, due January 1, 2023	\$2,000,000
Discount on bonds payable	88,000
Interest payable	80,000

Show how the above accounts should be presented on the December 31, 2014, balance sheet, including the proper classifications.

<b><u>Current liabilities</u></b>	
Bond Interest Payable .....	<u>\$ 80,000</u>
<b><u>Long-term liabilities</u></b>	
Bonds Payable, due January 1, 2023 .....	\$2,000,000
<b>Less:</b> Discount on Bonds Payable .....	<u>(88,000)</u>
	<u>\$1,912,000</u>

**BE14-12** Coldwell, Inc. issued a \$100,000, 4-year, 10% note at face value to Flint Hills Bank on January 1, 2014, and received \$100,000 cash. The note requires annual interest payments each December 31. Prepare Coldwell's journal entries to record **(a)** the issuance of the note and **(b)** the December 31 interest payment

<b>(a)</b>	Cash.....	100,000	
	Notes Payable .....		100,000
<b>(b)</b>	Interest Expense .....	10,000	
	Cash (\$100,000 X 10%).....		10,000

**BE14-13** Samson Corporation issued a **4-year, \$75,000, zero-interest-bearing** note to Brown Company on January 1, 2014, and received cash of \$47,664. The implicit interest rate is 12%. Prepare Samson's journal entries for **(a)** the January 1 issuance and **(b)** the December 31 recognition of interest.

<b>(a)</b>	Cash.....	47,664	
	Discount on Notes Payable .....	27,336	
	Notes Payable .....		75,000
<b>(b)</b>	Interest Expense .....	5,720	
	Discount on Notes Payable (\$47,664 X 12%) .....		5,720

Discount				Balance sheet			
Jan 1.	27336	Dec.31	5720			<b>Long term liabilities</b>	
Bal.	<u>21616</u>					Notes payable	75000
						-discount on bonds payable	<u>(21616)</u>
						Carrying value	53384

<b>(b)</b>	Interest Expense .....	6,406	
	Discount on Notes Payable (\$53,384 X 12%) .....		6,406

Discount				Balance sheet			
Jan 1.	27336	Dec.31	5720			<b>Long term liabilities</b>	
		Dec. 31	6406			Notes payable	75000
Bal.	<u>15210</u>					-discount on bonds payable	<u>(15210)</u>
						Carrying value	59790

<b>(b)</b>	Interest Expense .....	7,175	
	Discount on Notes Payable (\$59,790 X 12%) .....		7,175

Discount				Balance sheet			
Jan 1.	27336	Dec.31	5720			<b>Long term liabilities</b>	
		Dec. 31	6406			Notes payable	75000
		Dec. 31	7175			-discount on bonds payable	(8035)
Bal.	8035					Carrying value	66965

(b)	Interest Expense .....	8,035	
	Discount on Notes Payable (\$66,965 X 12%) .....		8,035

Discount				Balance sheet			
Jan 1.	27336	Dec.31	5720			<b>Long term liabilities</b>	
		Dec. 31	6406			Notes payable	75000
		Dec. 31	7175			-discount on bonds payable	(0)
		Dec. 31	8035			Carrying value	75000
Bal.	0						

Notes Payable .....	75,000	
Cash .....		75,000

**E14-14** McCormick Corporation issued a 4-year, \$40,000, 5% note to Greenbush Company on January 1, 2014, and received a computer that normally sells for \$31,495. The note requires annual interest payments each December 31. The market rate of interest for a note of similar risk is 12%. Prepare McCormick's journal entries for (a) the January 1 issuance and (b) the December 31 interest

(a)	Equipment .....	31,495	
	Discount on Notes Payable .....	8,505	
	Notes Payable .....		40,000
(b)	Interest Expense (\$31,495 X 12%) .....	3,779	
	Cash (\$40,000 X 5%) .....		2,000
	Discount on Notes Payable .....		1,779

Discount				Balance sheet			
Jan 1.	8,505	Dec.31	1,779			<b>Long term liabilities</b>	
Bal.	6725					Notes payable	40000
						-discount on bonds payable	(6725)
						Carrying value	33274

(b)	Interest Expense (\$33,274 X 12%) .....	3,993	
	Cash (\$40,000 X 5%).....		2,000
	Discount on Notes Payable .....		1,993

**E14-3 (Entries for Bond Transactions)** Presented below are two independent situations.

- On January 1, 2014, Simon Company issued \$200,000 of 9%, 10-year bonds at par. Interest is payable quarterly on April 1, July 1, October 1, and January 1.
- On June 1, 2014, Garfunkel Company issued \$100,000 of 12%, 10-year bonds dated January 1 at par plus accrued interest. Interest is payable semiannually on July 1 and January 1.

For each of these two independent situations, prepare journal entries to record the following.

(a) The issuance of the bonds, (b) The payment of interest on July 1, (c) The accrual of interest on December 31.

1. Simon Company:			
(a)	1/1/14	Cash.....	200,000
		Bonds Payable.....	200,000
(b)	1/7/14	Interest Expense(\$200,000 X 9% X 3/12).....	4,500
		Cash .....	4,500
(c)	31/12/14	Interest Expense .....	4,500
		Interest Payable .....	4,500

2. Garfunkel Company:			
(a)	1/6/14	Cash.....	105,000
		Bonds Payable.....	100,000
		Interest Expense(\$100,000 X 12% X 5/12)....	5,000
(b)	1/7/14	Interest Expense .....	6,000
		Cash (\$100,000 X 12% X 6/12) .....	6,000
(c)	12/31/14	Interest Expense .....	6,000
		Interest Payable .....	6,000

**E14-4 (Entries for Bond Transactions—Straight-Line)** Celine Dion Company issued \$600,000 of 10%, 20-year bonds on January 1, 2014, at 102. Interest is payable semiannually on July 1 and January 1. Dion Company uses the **straight-line method** of amortization for bond premium or discount. Prepare the journal entries to record the following (a) The issuance of the bonds, (b) The payment of interest and the related amortization on July 1, 2014, (c) The accrual of interest and the related amortization on

December 31, 2014.

(a)	1/1/14	Cash (\$600,000 X 102%).....	612,000	
		Bonds Payable .....		600,000
		Premium on Bonds Payable		12,000
(b)	1/7/14	Interest Expense.....	29,700	
		Premium on Bonds Payable (\$12,000 ÷ 40) .....	300	
		Cash (\$600,000 X 10% X 6/12).....		30,000
(c)	31/12/14	Interest Expense.....	29,700	
		Premium on Bonds Payable.....	300	
		Interest Payable.....		30,000

**E14-5 (Entries for Bond Transactions—Effective-Interest)** Assume the same information as in E14-4, except that Celine Dion Company uses **the effective-interest method** of amortization for bond premium or discount. Assume an effective yield of 9.7705%. Prepare the journal entries to record the following (a) The issuance of the bonds, (b) The payment of interest and related amortization on July 1, 2014, (c) The accrual of interest and the related amortization on December 31, 2014.

(a)	1/1/14	Cash (\$600,000 X 102%) .....	612,000	
		Bonds Payable.....		600,000
		Premium on Bonds Payable.....		12,000
(b)	1/7/14	Interest Expense (\$612,000 X 9.7705% X 1/2).....	29,898	
		Premium on Bonds Payable .....	102	
		Cash (\$600,000 X 10% X 6/12) .....		30,000

Premium on Bonds				Balance sheet			
July 1.	102	Jan 1.	12,000				
		Bal.	11,898				
				<b>Long term liabilities</b>			
				Notes payable			
				+Premium on bonds payable			
				Carrying value			
				611,898			

Or we can calculate carrying amount of bonds as following:

<b>Carrying amount of bonds at July 1, 2014:</b>	
Carrying amount of bonds at January 1, 2014	\$612,000
Amortization of bond premium(\$30,000 – \$29,898)	(102)
Carrying amount of bonds at July 1, 2014	<u>\$611,898</u>

(c)	31/12/14	Interest Expense (\$611,898 X 9.7705% X 1/2) .....	29,893	
		Premium on Bonds Payable .....	107	
		Interest Payable .....		30,000

Premium on Bonds				Balance sheet			
July 1.	102	Jan 1.	12,000			<b>Long term liabilities</b>	
Dec 31.	107					Notes payable	600000
		Bal.	11,791			+Premium on bonds payable	11,791
						Carrying value	<u>611,791</u>

Or we can calculate carrying amount of bonds as following:

<b>Carrying amount of bonds at Dec 31, 2014:</b>	
Carrying amount of bonds at July 1, 2014	\$611,898
Amortization of bond premium(\$30,000 – \$29,893)	<u>(107)</u>
Carrying amount of bonds at dec 31, 2014	<u>\$611,791</u>

**E14-6 (Amortization Schedule—Straight-Line)** Devon Harris Company sells 10% bonds having a maturity value of \$2,000,000 for \$1,855,816. The bonds are dated January 1, 2014, and mature January 1, 2019. Interest is payable annually on January 1. Set up a schedule of interest expense and discount amortization under the straight-line method. (Round answers to the nearest cent.)

Schedule of Discount Amortization Straight-Line Method				
Year	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Bonds
Jan. 1, 2014	\$2,000,000 X 10%		$(\$2,000,000 - \$1,855,816) \div 5$	\$1,855,816
Dec. 31, 2014	\$200,000	\$228,837	\$28,837	1,884,653
Dec. 31, 2015	200,000	228,837	28,837	1,913,490
Dec. 31, 2016	200,000	228,837	28,837	1,942,327
Dec. 31, 2017	200,000	228,837	28,837	1,971,164
Dec. 31, 2018	200,000	228,836	28,836	2,000,000

**E14-7 (Amortization Schedule—Effective-Interest)** Assume the same information as E14-6 Set up a schedule of interest expense and discount amortization under the **effective-interest method**.

The effective-interest or yield rate is 12%.

Schedule of Discount Amortization Effective-Interest Method (12%)				
Year	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Bonds
Jan. 1, 2014				\$1,855,816
Dec. 31, 2014	\$2,000,000 X 10%	\$1,855,816 X 12%		
	200,000	\$222,698	\$22,698	1,878,514
Dec. 31, 2015	\$2,000,000 X 10%	1,878,514×12%		
	200,000	225,422	25,422	1,903,936
Dec. 31, 2016	\$2,000,000 X 10%	1,903,936×12%		
	200,000	228,472	28,472	1,932,408
Dec. 31, 2017	\$2,000,000 X 10%	1,932,408×12%		
	200,000	231,889	31,889	1,964,297
Dec. 31, 2018	\$2,000,000 X 10%	1,964,297×12%		
	200,000	235,703	35,703	2,000,000

**E14-8** Presented below are three independent situations

(a) CeCe Winans Corporation incurred the following costs in connection with the issuance of bonds: (1) printing and engraving costs, \$12,000; (2) legal fees, \$49,000; and (3) commissions paid to underwriter, \$60,000. What amount should be reported as Unamortized Bond Issue Costs, and where should this amount be reported on the balance sheet?

(b) George Gershwin Co. sold \$2,000,000 of 10%, 10-year bonds at 104 on January 1, 2014. The bonds were dated January 1, 2014, and pay interest on July 1 and January 1. If Gershwin uses **the straight-line method** to amortize bond premium or discount, determine the amount of interest expense to be reported on July 1, 2014, and December 31, 2014.

(c) Ron Kenoly Inc. issued \$600,000 of 9%, 10-year bonds on June 30, 2014, for \$562,500. This price provided a **yield of 10%** on the bonds. Interest is payable **semiannually** on December 31 and June 30. If Kenoly uses the **effective-interest method**, determine the amount of interest expense to record if financial statements are issued on **October 31, 2014**.

(a)	Printing and engraving costs of bonds	\$12,000
	Legal fees	49,000
	Commissions paid to underwriter	<u>60,000</u>
	Amount to be reported as Unamortized Bond Issue Costs	<u>\$121,000</u>

The Unamortized Bond Issue Costs, \$121,000, should be reported as a deferred charge in the **Other Assets section** on the balance sheet.

(b)	Interest paid for the period from January 1 to June 30, 2014; $(\$2,000,000 \times 10\% \times 6/12)$	\$100,000
	<b>Less:</b> Premium amortization for the period from January 1 to June 30, 2014 [[ $(\$2,080,000 - \$2,000,000) \div 10 \text{ years} \times 6/12$ ]	<u>(4,000)</u>
	Interest expense to be recorded on July 1, 2014	<u>\$ 96,000</u>
(c)	Carrying amount of bonds on June 30, 2014	<u>\$562,500</u>
	Effective-interest rate for the period from June 30 to October 31, 2014 $(.10 \times 4/12)$	<u>0.033333</u>
	Interest expense to be recorded on October 31, 2014	<u>\$ 18,750</u>

June 30, 2014	cash	562,500	
	Discount on Notes Payable.....	37,500	
	Notes Payable.....		600,000
Oct 31, 2014	Interest Expense $(\$562,500 \times 10\% \times 4/12)$ .....	18,750	
	Cash $(\$600,000 \times 9\% \times 4/12)$ .....		18,000
	Discount on Notes Payable.....		750

Discount				Balance sheet			
June 1.	37,500	oct.31	750			<b><u>Long term liabilities</u></b>	
Bal.	36,750					Notes payable	600,000
						-discount on bonds payable	<u>(36,750)</u>
						Carrying value	563,250

**E14-9 (Entries and Questions for Bond Transactions)** On **June 30, 2014**, Mischa Auer Company issued \$4,000,000 face value of **13%, 20-year** bonds at \$4,300,920, a **yield of 12%**. Auer uses **the effective-interest** method to amortize bond premium or discount. The bonds pay **semiannual** interest on **June 30** and **December 31**. (Round answers to the nearest cent.)

(a) Prepare the journal entries to record the following transactions.

- (1) The issuance of the bonds on June 30, 2014.
- (2) The payment of interest and the amortization of the premium on December 31, 2014.
- (3) The payment of interest and the amortization of the premium on June 30, 2015.
- (4) The payment of interest and the amortization of the premium on December 31, 2015.

(b) Show the proper balance sheet presentation for the liability for bonds payable on the December 31, 2015, balance sheet.

(c) Provide the answers to the following questions.

- (1) What amount of interest expense is reported for 2015?
- (2) Will the bond interest expense reported in 2015 be the same as, greater than, or less than the amount that would be reported if the **straight-line** method of amortization were used?
- (3) Determine the total cost of borrowing over the life of the bond.
- (4) Will the total bond interest expense for the life of the bond be greater than, the same as, or less than the total interest expense if the straight-line method of amortization were used?

	<b>June 30, 2014</b>		
(a)1.	Cash.....	4,300,920	
	Bonds Payable.....		4,000,000
	Premium on Bonds Payable.....		300,920
	<b>December 31, 2014</b>		
(a)2.	Interest Expense(\$4,300,920X 12% X 6/12).....	258,055	
	Premium on Bonds Payable .....	1,945	
	Cash (\$4,000,000 X 13% X 6/12).....		260,000
	<b>June 30, 2015</b>		
(a)3.	Interest Expense[(\$4,300,920– \$1,945) X 12% X 6/12]	257,939	
	Premium on Bonds Payable .....	2,061	
	Cash (\$4,000,000 X 13% X 6/12).....		260,000

December 31, 2015		
(a)4.	Interest Expense [(\$4,300,920 – \$1,945 – \$2,061) X 12% X 6/12] .....	257,815
	Premium on Bonds Payable .....	2,185
	Cash (\$4,000,000 X 13% X 6/12).....	260,000

(B) the proper balance sheet presentation for the liability for bonds payable on the December 31, 2015

<u>Long-term Liabilities</u>	
Bonds payable, 13% (due on June 30, 2034)	\$4,000,000
Premium on bonds payable*	
*(\$4,300,920 – \$4,000,000) – (\$1,945 + \$2,061 + \$2,185) = \$294,720	<u>294,728</u>
Book value of bonds payable	<u>\$4,294,728</u>

(c)1	Interest expense for the period from January 1 to June 30, 2015	\$257,939
	Interest expense for the period from July 1 to December 31, 2015	<u>257,815</u>
	Amount of interest expense reported for 2015	<u>\$515,754</u>

2. The amount of bond interest expense reported in 2015 will be greater than the amount that would be reported if the straight-line method of amortization were used.

Under the straight-line method, the amortization of bond premium is \$15,046 (\$300,920/20).

Bond interest expense for 2015 is the difference between the amortized premium, \$15,046, and the actual interest paid, \$520,000 (\$4,000,000 X 13%). Thus, the amount of bond interest expense is \$504,954 (\$520,000 – \$15,046), which is smaller than the bond interest expense under the **effective-interest** method.

3.	Total interest to be paid for the bond (\$4,000,000 X 13% X 20)	\$10,400,000
	Principal due in 2034	<u>4,000,000</u>
	Total cash outlays for the bond	14,400,000
	Cash received at issuance of the bond	<u>(4,300,920)</u>
	Total cost of borrowing over the life of the bond	<u>\$10,099,080</u>
4.	They will be the same.	

**E14-10 (Entries for Bond Transactions)** On January 1, 2014, Aumont Company sold 12% bonds having a maturity value of \$500,000 for \$537,907.37, which provides the bondholders with a 10% yield. The bonds are dated **January 1, 2014**, and **mature January 1, 2019**, with interest payable December 31 of **each year**. Aumont Company allocates interest and unamortized discount or premium on the effective-interest basis. (Round answers to the nearest cent.)

- Prepare the journal entry at the date of the bond issuance.
- Prepare a schedule of interest expense and bond amortization for 2014–2016.
- Prepare the journal entry to record the interest payment and the amortization for 2014.
- Prepare the journal entry to record the interest payment and the amortization for 2016.

January 1, 2014			
(a)	Cash .....	537,907.37	
	Premium on Bonds Payable .....		37,907.37
	Bonds Payable .....		500,000

**(b) Schedule of Interest Expense and Bond Premium Amortization**

Effective-Interest Method 12% Bonds Sold to Yield 10%				
Date	Cash Paid	Interest Expense	Premium Amortized	Carrying Amount of Bonds
1/1/14	–	–	–	\$537,907.37
31/12/14	\$500,000 X 12%	\$537,907.37×10%	\$6,209.26	531,698.11
	\$60,000	\$53,790.74		
31/12/15	\$500,000 X 12%	531,698.11×10%	6,830.19	524,867.92
	60,000	53,169.81		
31/12/16	\$500,000 X 12%	524,867.92×10%	7,513.21	517,354.71
	60,000	52,486.79		

December 31, 2014			
(c)	Interest Expense .....	53,790.74	
	Premium on Bonds Payable .....	6,209.26	
	Cash.....		60,000
December 31, 2016			
(d)	Interest Expense .....	52,486.79	
	Premium on Bonds Payable .....	7,513.21	
	Cash.....		60,000

**P14-1 (Analysis of Amortization Schedule and Interest Entries)** The following amortization and interest schedule reflects the issuance of **10-year** bonds by Capulet Corporation on January 1, 2008, and the subsequent interest payments and charges. The company's year-end is December 31, and financial statements are prepared once yearly

Amortization Schedule				
Year	Cash	Interest	Amount Amortized	Carrying Value
1/1/2008			\$5,651	\$94,349
2008	11,000	\$11,322	5,329	94,671
2009	11,000	11,361	4,968	95,032
2010	11,000	11,404	4,564	95,436
2011	11,000	11,452	4,112	95,888
2012	11,000	11,507	3,605	96,395
2013	11,000	11,567	3,038	96,962
2014	11,000	11,635	2,403	97,597
2015	11,000	11,712	1,691	98,309
2016	11,000	11,797	894	99,106
2017	11,000	11,894	0	100,000

- (a) Indicate whether the bonds were issued at a premium or a discount and how you can determine this fact from the schedule.
- (b) Indicate whether the amortization schedule is based on the straight-line method or the effective-interest method, and how you can determine which method is used.
- (c) Determine the stated interest rate and the effective-interest rate.
- (d) On the basis of the schedule above, prepare the journal entry to record the issuance of the bonds on January 1, 2008.
- (e) On the basis of the schedule above, prepare the journal entry or entries to reflect the bond transactions and accruals for 2008. (Interest is paid January 1.)
- (f) On the basis of the schedule above, prepare the journal entry or entries to reflect the bond transactions and accruals for 2015. Capulet Corporation does not use reversing entries.
- (a) The bonds were sold at a discount of \$5,651. Evidence of the discount is the January 1, 2008 book value of \$94,349, which is less than the maturity value of \$100,000 in 2017.
- (b) The interest allocation and bond discount amortization are based upon the effective-interest method; this is evident from the increasing interest charge. Under the straight-line method the amount of interest would have been \$11,565.10 [ $\$11,000 + (\$5,651 \div 10)$ ] for each year of the life of the bonds.

(c) The stated rate is 11% ( $\$11,000 \div \$100,000$ ). The effective rate is 12% ( $\$11,322 \div \$94,349$ ).

	<b><u>January 1, 2008</u></b>		
<b>(d)</b>	Cash .....	94,349	
	Discount on Bonds Payable .....	5,651	
	Bonds Payable .....		100,000
	<b><u>December 31, 2008</u></b>		
<b>(e)</b>	Interest Expense .....	11,322	
	Discount on Bonds Payable .....		322
	Interest Payable .....		11,000
	<b><u>January 1, 2015 (Interest Payment)</u></b>		
<b>(f)</b>	Interest Payable.....	11,000	
	Cash.....		11,000
	<b><u>December 31, 2015</u></b>		
	Interest Expense .....	11,712	
	Discount on Bonds Payable .....		712
	Interest Payable .....		11,000