H&P Heintz & Parry

Chapter 22

Corporations: Bonds

Learning Objective 1

Describe the types of bonds, ways bonds differ from common stock, and how the sales price of bonds is determined.

A Broader View

A Broader View

Debt Can Be Dangerous

Horizon Lines, Inc., is the leading Jones Act container shipping and logistics company in the United States, with 20 ships and 22,000 cargo containers. In 2010, it had revenue of almost $1.2 billion and assets of $786 million. Yet, the auditors' report on this large, apparently strong company's 2010 financial statements included the following passage: "… there is uncertainty that Horizon Lines, Inc. will remain in compliance with certain debt covenants throughout 2011 and will be able to cure the acceleration clause contained in the convertible notes. These conditions and their impact on the Company's liquidity raise substantial doubt about Horizon Lines Inc.'s ability to continue as a going concern." In other words, the independent auditors doubted that Horizon Lines would be able to survive as a business, because the company might not be able to meet its debt obligations.

This is a good example of the risk dimension of debt. By issuing stock, a company gives up ownership interest in the business. But when bonds and other types of debt are issued, a company runs the risk of going bankrupt if it cannot make the payments on its debts. Careful analysis and planning are needed in deciding how to finance a business.

Bonds

- A written promise to pay a specific sum of money at a specific future date
  - It is a debt of the corporation
    - If not paid, creditors can force the company into bankruptcy
  - Usually issued in denominations of $1,000 each
    - Enables the corporation to obtain large amounts of money by selling bonds to many investors
  - Bonds can be classified as to:
    - Security
    - Timing of payment of principal
    - Identification of ownership

Security

- Bonds are either secured or unsecure
  - Secured bonds
    - Backed by specific corporate assets
    - Example: Mortgage bond
  - Unsecured bonds
    - Backed solely by the general credit of the corporation, rather than by specific assets
    - Also called “debenture bonds”

Timing of Payment of Principle

- Principal is to be paid at maturity
  - Term bonds – Bonds that all have the same maturity date
  - Serial bonds – Bonds issued in a series so that a specified amount of the bond matures each year

Timing of Payment of Principle (cont.)

- Principal is to be paid at maturity
  - Convertible bonds – Bonds that give the holder the option of exchanging the bonds for capital stock of the corporation
  - Callable bonds – Bonds that give the issuing corporation the option of calling the bonds for redemption before the maturity date

Identification of Ownership

- Principal is to be paid at maturity
  - Registered bonds
    - Bonds whose ownership is recorded in the corporate records
      - Name and address of each owner
  - Coupon bonds (bearer bonds)
    - Bonds whose ownership generally is not recorded by the corporation
      - The holder of the bond presents the interest coupons for payment as they come due

Comparison of Bonds with Common Stock

- Bondholders
  - Creditors of a corporation
  - Life of bond limited (10-25 years)
- Stockholders
  - Owners of a corporation
  - Unlimited life

Comparison of Bonds with Common Stock (cont.)

Characteristic	Bonds	Common Stock
Holder	Creditor	Shareholder with voice in management
Life	Defined/limited	Unlimited—same as corporation
Financial statement presentation	Liabilities—long-term debt	Stockholders' equity
Payments	Interest and principal required	No guarantee—dividends depend on corporate income and policies
Risk	If interest/principal not paid, can cause bankruptcy	If weak performance, can lower stock price
Net income and taxes	Interest deductible for net income and taxes—reported on income statement	Dividends not deductible for net income and taxes—reported on statement of retained earnings
Leverage	If rate of return > interest rate, net income is enhanced	None

Advantage of Bonds

- One advantage of using bonds is **leverage**:
  - Using other people's money to enhance the company's earnings.
  - Can be achieved by earning a greater rate of return with funds that were borrowed than the rate the company paid for those funds.
  - Example: a corporation can issue bonds at 6% interest, and use the funds to earn a rate of 15%: means strong positive leverage.

Determining Sales Price

- **EXAMPLE**: Watkin Corp. wants to sell $400,000 of 8%, 10-year bonds.
  - Two factors affect price:
  - Stated or coupon rate of interest on the bond
  - Current market rate of interest on similar investments

What if the market rate is 9%?

Determining Sales Price (cont.)

- **EXAMPLE**: Watkin Corp. wants to sell $400,000 of 8%, 10-year bonds.
  - Two factors affect price:
    - Stated or coupon rate of interest on the bond
    - Current market rate of interest on similar investments

If our bonds offer only 8% and other bonds are offering 9%, investors will not want our bonds.

Determining Sales Price

- **EXAMPLE**: Watkin Corp. wants to sell $400,000 of 8%, 10-year bonds.
  - Two factors affect price:
    - Stated or coupon rate of interest on the bond is 8%
    - Current market rate of interest on similar investments is 9%

Our bonds will sell at a **discount**

Determining Sales Price

- **EXAMPLE**: Watkin Corp. wants to sell $400,000 of 8%, 10-year bonds.
  - Two factors affect price:
    - Stated or coupon rate of interest on the bond is 8%
    - Current market rate of interest on similar investments is 7%

If the market rate is only 7%, the bonds will sell at a **premium**.

Determining Sales Price

- **EXAMPLE**: Watkin Corp. wants to sell $400,000 of 8%, 10-year bonds.

When...				The Selling Price…
Stated Rate	=	Market Rate,	=	Face Value
Stated Rate	>	Market Rate,	>	Face Value (Premium)
Stated Rate	<	Market Rate,	<	Face Value (Discount)

Learning Objective 2

Account for bonds issued at face value.

Issuing Bonds at Face Value

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is THE SAME as the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at face value.

Let's look at the issuance journal entry.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	**20-1 Apr.**	**1**	**Cash**		**400,000**	
2			**Bonds Payable**			**400,000**
3			Issued bonds at face value			
4						
5						
6						
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8						
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Bonds payable is reported as a long-term liability on the balance sheet.

Issuing Bonds at Face Value (cont.)

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is THE SAME as the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at face value.

Interest Payment:

Face Value × Stated Interest Rate

$400,000 × 8%

$32,000/Year

Since interest payments are paid every 6 months, ½ of the yearly interest is included with each payment.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	20-1 **Oct.**	**1**	**Bond Interest Expense**		**16,000**	
2			**Cash**			**16,000**
3			Paid semiannual interest			
4			on bonds			
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Since the next interest payment will be after the year end, we must stop at year end and record the accrued interest.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	**20-1 Dec.**	**31**	**Bond Interest Expense**		**8,000**	
2						
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8						
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October 1–December 31 = 3 months
$400,000 × 8% = $32,000/year
$32,000 × 1/4 year (3 months) = $8,000

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	**20-1 Dec.**	**31**	**Bond Interest Expense**		**8,000**	
2			**Bond Interest Payable**			**8,000**
3						
4						
5						
6						
7						
8						
9						
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GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	**20-2** **Jan.**	**1**	**Bond Interest Payable**		**8,000**	
2			**Bond Interest Expense**			**8,000**
3						
4						
5						
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9						
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The adjustment is reversed on January 1.

Learning Objective 3

Account for bonds issued at a premium.

Issuing Bonds at a Premium

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is GREATER than the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at 106.

$400,000 × 106%

Bonds will sell for $424,000

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	20-1 Apr.	1	**Cash**		**424,000**	
2			**Bonds Payable**			**400,000**
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Bonds Payable is recorded at the FACE VALUE of the bonds.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	**20-1 Apr.**	**1**	**Cash**		**424,000**	
2			**Bonds Payable**			**400,000**
3			**Premium on Bonds Payable**			**24,000**
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Premium on Bonds Payable is an adjunct-liability account.

Balance Sheet (Partial)

Long-term liabilities:		
Bonds payable	**$400,000**	
Premium on bonds payable	**24,000**	**$424,000**

Bonds Payable + Premium = Carrying Value

Issuing Bonds at a Premium (cont.)

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is GREATER than the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at 106.

$400,000 × 8% × 1/2 = $16,000 interest payment

Selling at a premium does not affect the amount of the interest payments.

Issuing Bonds at a Premium (cont.)

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is GREATER than the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at 106.

$\$400,000 \times 8\% \times 1/2 = \$16,000$ interest payment

This is not the interest expense recognized every 6 months.

Issuing Bonds at a Premium (cont.)

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is GREATER than the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at 106.

$400,000 × 8% × 1/2 = $16,000 interest payment

The $24,000 premium received reduces the amount of interest expense.

The premium is amortized over the life of the bond.

Amortizing Bond Premiums

- Two methods of amortizing premiums or discounts:
  - Effective interest
    - Recommended method
    - Covered in the Appendix
  - Straight line
    - Simple to apply
    - Generally provides acceptable results

Amortizing Bond Premiums (cont.)

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is GREATER than the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at 106.

FORMULA:

$$\frac{\textbf{Premium}}{\textbf{Life of Bonds}} \times \textbf{1/2 Year}$$

$$\frac{\$24{,}000}{10\ \text{Years}} \times 1/2\ \text{Year} = \$1{,}200$$

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	**20-1 Oct.**	**1**	**Bond Interest Expense**		**14,800**	
2						
3						
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Interest Payment – Amortization of Premium
($16,000 – $1,200)

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	**20-1 Oct.**	**1**	**Bond Interest Expense**		**14,800**	
2			**Premium on Bonds Payable**		**1,200**	
3			**Cash**			**16,000**
4			Paid semiannual interest			
5			and amortized premium			
6						
7						
8						
9						
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GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	20-1 Dec.	31	**Bond Interest Expense**		**7,400**	
2			**Premium on Bonds Payable**		**600**	
3			**Bond Interest Payable**			**8,000**
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At year end, 3 months of accrued interest expense and premium amortization are recognized.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	20-2 Jan.	1	**Bond Interest Payable**		**8,000**	
2			**Premium on Bonds Payable**			**600**
3			**Bond Interest Expense**			**7,400**
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The adjustment is reversed on January 1.

PREMIUM AMORTIZATION

Date	Interest Expense Debit	Premium on Bonds Payable	Cash Credit	Bonds Payable Balance	Premium on Bonds Payable Balance	Carrying Value of Bonds
4/1/-1				$400,000	$24,000	$424,000

When the bonds are issued,
the carrying value is $424,000.
($400,000 face value + $24,000 premium)

PREMIUM AMORTIZATION

Date	Interest Expense Debit	Premium on Bonds Payable	Cash Credit	Bonds Payable Balance	Premium on Bonds Payable Balance	Carrying Value of Bonds
4/1/-1				$400,000	$24,000	$424,000
10/1/-1	$14,800	$1,200				

$1,200 of the premium is amortized every six months.

PREMIUM AMORTIZATION

Date	Interest Expense Debit	Premium on Bonds Payable	Cash Credit	Bonds Payable Balance	Premium on Bonds Payable Balance	Carrying Value of Bonds
4/1/-1				$400,000	$24,000	$424,000
10/1/-1	$14,800	$1,200	$16,000	400,000	22,800	422,800

The carrying value is reduced by $1,200 every 6 months.

PREMIUM AMORTIZATION

Date	Interest Expense Debit	Premium on Bonds Payable	Cash Credit	Bonds Payable Balance	Premium on Bonds Payable Balance	Carrying Value of Bonds
4/1/-1				$400,000	$24,000	$424,000
10/1/-1	$14,800	$1,200	$16,000	400,000	22,800	422,800
4/1/-2	14,800	1,200	16,000	400,000	21,600	421,600
10/1/-2	14,800	1,200	16,000	400,000	20,400	420,400
4/					2,400	402,400
10/					1,200	401,200
4/					0	400,000

By the maturity date of the bond, the premium is gone and the carrying value has reached the face value of the bond.

Learning Objective 4

Account for bonds issued at a discount.

Issuing Bonds at a Discount

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is LESS than the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at 95.

$400,000 × 95%

Bonds will sell for $380,000

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	**20-1 Apr.**	**1**	**Cash**		**380,000**	
2			**Discount on Bonds Payable**		**20,000**	
3			**Bonds Payable**			**400,000**
4						
5						
6						
7						
8						
9						
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Discount on Bonds Payable
is a contra-liability account.

Balance Sheet (Partial)

Long-term liabilities:		
Bonds payable	$400,000	
Discount bonds payable	20,000	$380,000

Bonds Payable – Discount = Carrying Value

Issuing Bonds at a Discount (cont.)

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is LESS than the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at 95.

$400,000 × 8% × 1/2

Interest payments of $20,000 every 6 months

Selling bonds at a discount does not affect the amount of interest paid.

Issuing Bonds at a Discount (cont.)

- **EXAMPLE**: On April 1, 20-1, the stated rate of 8% is LESS than the current market rate. Watkin Corp. will sell the $400,000, 10-year bonds at 95.

$20,000 discount will be amortized over the life of the bond.

$$\frac{\$20{,}000}{10 \text{ years}} \times 1/2 = \$1{,}000$$

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	20-1 Oct.	1	**Bond Interest Expense**		**17,000**	
2			**Discount on Bonds Payable**			**1,000**
3			**Cash**			**16,000**
4			Paid semiannual interest			
5			and amortized discount			
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Discount amortization increases the interest expense.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	20-1 Dec.	31	**Bond Interest Expense**		**8,500**	
2			**Bond Interest Payable**			**8,000**
3			**Discount on Bond Payable**			**500**
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At year end, three months of accrued interest expense and discount amortization are recognized.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1	20-2 Jan.	1	**Bond Interest Payable**		**8,000**	
2			**Discount on Bonds Payable**		**500**	
3			**Bond Interest Expense**			**8,500**
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The adjustment is reversed on January 1.

DISCOUNT AMORTIZATION

Date	Interest Expense Debit	Discount on Bonds Payable	Cash Credit	Bonds Payable Balance	Discount on Bonds Payable Balance	Carrying Value of Bonds
4/1/-1				$400,000	$20,000	$380,000
10/1/-1	$17,000	$1,000	$16,000	400,000	19,000	381,000

Every 6 months, the discount is reduced by $1,000, causing the carrying value to rise by $1,000.

DISCOUNT AMORTIZATION

Date	Interest Expense Debit	Discount on Bonds Payable	Cash Credit	Bonds Payable Balance	Discount on Bonds Payable Balance	Carrying Value of Bonds
4/1/-1				$400,000	$20,000	$380,000
10/1/-1	$17,000	$ 1,000	$16,000	400,000	19,000	381,000
4/1/-2	17,000					382,000
10/1/-2	17,000					383,000
4/1/10	17,000					398,400
10/1/10	17,000	1,000	$16,000	400,000	1,000	399,200
4/1/11	17,000	1,000	$16,000	400,000	0	400,000

At the maturity date of the bond, the discount is gone and the carrying value is now equal to the face value.

Learning Objective 5

Account for bond redemption and bond sinking funds.

Bond Redemption

- Corporations may redeem bonds:
  - At the maturity date
    - By paying the face value of the note
  - Before maturity
    - By paying the call price if “callable”
    - By paying the market price if not callable
    - Usually results in a gain or a loss from the difference between the amount paid to redeem the bonds and the carrying value of the bonds

Bond Redemption (cont.)

- **EXAMPLE**: Watkin Corp. redeems $40,000 of the $400,000 of 10-year bonds that were sold at face value. The $40,000 of bonds were redeemed at 103.

$40,000 × 103% = $41,200

Watkin will pay $41,200 to redeem $40,000 of bonds—a $1,200 loss.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1			**Bonds Payable**		**40,000**	
2			**Loss on Bonds Redeemed**		**1,200**	
3			**Cash**			**41,200**
4						
5						
6						
7						
8						
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What if these bonds had originally been sold at 106 (premium)?

Bond Redemption (cont.)

- To determine if there is a gain or loss, we must compare the carrying value at the time of redemption with the amount paid to redeem the bonds.

Carrying Value =

Face Value + **Unamortized Premium**

$40,000 +

We must determine how much of the premium remains unamortized at the date of redemption (8 years later).

Unamortized Premium

- Bonds were originally sold a$42,400

$40,000 × 106%

Unamortized Premium (cont.)

Bonds were originally sold at	$42,400	
Face value	− 40,000	
Premium	$ 2,400	
Amortized over	÷ 10	years
	$ 240	per year
	× 8	years
Amortized so far	$ 1,920	

$2,400 premium – $1,920 amortized so far = $480 remaining unamortized premium

Bond Redemption (cont.)

- To determine if there is a gain or loss, we must compare the carrying value at the time of redemption with the amount paid to redeem the bonds.

Carrying Value =

Face Value	+	Unamortized Premium
$40,000	+	**$480**

Carrying value of $40,480 –
Cash paid to redeem the bonds of
$41,200 ($40,000 × 103%) = $720 loss

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1			**Bonds Payable**		**40,000**	
2			**Premium on Bonds Payable**		**480**	
3			**Loss on Bonds Redeemed**		**720**	
4			**Cash**			**41,200**
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Bond Redemption (cont.)

- **EXAMPLE**: Watkin Corp. redeems $40,000 of the $400,000 of bonds that were sold at face value. The $40,000 of bonds were redeemed at 97.

$40,000 × 97% = $38,800

Watkin will pay $38,800 to redeem $40,000 of bonds—a $1,200 gain.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1			**Bonds Payable**		**40,000**	
2			**Gain on Bonds Redeemed**			**1,200**
3			**Cash**			**38,800**
4						
5						
6						
7						
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What if these bonds had originally been sold at 95 (discount)?

Bond Redemption (cont.)

- To determine if there is a gain or loss, we must compare the carrying value at the time of redemption with the amount paid to redeem the bonds.

Carrying Value =

Face Value	**–**	**Unamortized Discount**
$40,000	**–**	

We need to determine how much of the discount remains unamortized at the time of redemption, 7 years later.

Unamortized Discount

- Bonds were originally sold at $38,000

$$\$40{,}000 \times 95\%$$

Unamortized Discount (cont.)

Bonds were originally sold at	$38,000	
Face value	− 40,000	
Premium	$ 2,000	
Amortized over	÷ 10	years
	$ 200	per year
	× 7	years
Amortized so far	$ 1,400	

$1,600 discount - $1,400 amortized so far = $600 remaining unamortized

Bond Redemption (cont.)

- To determine if there is a gain or loss, we must compare the carrying value at the time of redemption with the amount paid to redeem the bonds.

Carrying Value =

Face Value	–	Unamortized Discount
$40,000	–	$600

Carrying value of $39,400 –
Cash paid to redeem the bonds of
$39,200 ($40,000 × 98%) = $200 gain

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1			**Bonds Payable**		**40,000**	
2			**Discount on Bonds Payable**			**600**
3			**Gain on Bonds Redeemed**			**200**
4			**Cash**			**39,200**
5						
6						
7						
8						
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Bond Sinking Funds

- A formal, written agreement for issuing bonds is a bond indenture
- Often requires a bond sinking fund
  - The issuer is to accumulate and invest funds over a period of years to provide the amount needed at maturity

Bond Sinking Funds (cont.)

- **EXAMPLE**: Watkin Corp. is required to make deposits of $30,000 to a trustee each year.

Let's look at the journal entry.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1			**Bonds Sinking Fund**		**30,000**	
2			**Cash**			**30,000**
3						
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5						
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Watkin's trustee reports earnings of $2,800 for the year.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1			**Bonds Sinking Fund**		**30,000**	
2			**Cash**			**30,000**
3						
4			**Bonds Sinking Fund**		**2,800**	
5			**Sinking Fund Earnings**			**2,800**
6						
7						
8						
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Watkin bonds are redeemed at maturity by the trustee.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1			**Bonds Sinking Fund**		**30,000**	
2			**Cash**			**30,000**
3						
4			**Bonds Sinking Fund**		**2,800**	
5			**Sinking Fund Earnings**			**2,800**
6						
7			**Bonds Payable**		**400,000**	
8			**Bond Sinking Fund**			**400,000**
9						
10						

$960 is remaining in the sinking fund after the bonds are redeemed.

GENERAL JOURNAL

	DATE		DESCRIPTION	PR	DEBIT	CREDIT
1			**Bonds Sinking Fund**		**30,000**	
2			**Cash**			**30,000**
3						
4			**Bonds Sinking Fund**		**2,800**	
5			**Sinking Fund Earnings**			**2,800**
6						
7			**Bonds Payable**		**400,000**	
8			**Bond Sinking Fund**			**400,000**
9						
10			**Cash**		**960**	
11			**Bond Sinking Fund**			**960**