



# SFSA CASTEEL REPORTER

Steel Founders' Society of America

a monthly publication

serving SFSA steel casting industry Members

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[www.sfsa.org](http://www.sfsa.org)

## MAY — 2002

*100<sup>th</sup> Annual Meeting  
The Broadmoor  
Colorado Springs, CO  
September 21-25*

- *Marlin Fitzwater - keynote*
- *President's Address*
- *2003 Market Forecast*
- *Marty Regalia - economist*
- *Vision-Does It Matter?*
- *Trade*
- *SFSA Foundation Report*
- *The beauty of Colorado!*



*Come to the SFSA 100<sup>th</sup> Anniversary celebration at our Annual Meeting. We all need to celebrate this important event and I would urge you to plan to come. Our success is due to your support, as discussed in the Casteel Commentary. Take the time and opportunity to join your friends and enjoy this milestone in our Industry.*

### C & LA Research Review Meeting

There will be a meeting covering C&LA research on July 23 & 24 at the Ramada O'Hare, Rosemont. Mark you calendars to attend.

### American Foundry Society

See attached press release on "Casting Industry's 'Best' Recognized in North American Contest".

### E-Mailed Reporter

You can still have your e-mail address added to our system if you'd rather receive the Casteel Reporter by e-mail. If so, please complete this page and fax back to Kathi at 847-382-8287.

Name \_\_\_\_\_

Company \_\_\_\_\_

E-Mail Address \_\_\_\_\_

### Market News

Market conditions in the steel casting industry remain poor. Activity, as measured in the SFSA trend cards for bookings and shipments of carbon and low alloy and high alloy, are negative with bookings for March 2002 off last March 2001. This weak picture is confirmed in the Census numbers for iron and steel foundries showing continued declines in new orders and shipments. Steel shipments are up but this is undoubtedly the result of the tariffs imposed as a result of the 201 trade case.

In non defense capital goods, orders have stabilized but are off 10% from the peak in June 2001. Inventory reductions have improved the ratio of inventories to orders or shipments. The general economy continues to grow slowly, suggesting a recovery for industry but the timing is uncertain. Steel casting demand will continue to improve this year, the important question is how fast and how much? With the reduction in capacity, if the value of the dollar falls as domestic demand improves, steel casting demand could increase rapidly.

### Casteel Commentary

*In late spring and early summer, we are often invited to hallmark events in the lives of friends and family. High school graduations, college graduations, weddings, and funerals all command our attendance and support. We celebrate these events even when they fall at inconvenient times and locations. There are some times when we draw on our savings, disrupt our schedules and reorder our plans to participate. When an event celebrates an important event with people that we care about, it takes priority and deserves our support.*

*Steel Founders' Society of America is celebrating its hundredth anniversary! It has served our Industry, our economy and our Society by improving steel casting technology, increasing steel casting performance, and securing market opportunities for our members. It has worked to advocate sound public policies to improve safety, reduce environmental costs and damage, and remove barriers to competition. Through the conferences and research projects, it has raised our technical capabilities to be the best in the world. Starting with the abrasive and demanding Brigg's era to the current age, SFSA has been synonymous with sound engineering and innovative technology.*

*SFSA has also been a meeting place to make friends in the Industry, share common concerns, and create new opportunities. The Society has been a warm place of cooperation for the benefit of our Industry, its customers and ultimately, our community. The fellowship of steel foundrymen in SFSA is the envy of the world. Our sharing and openness as an Industry has allowed us to have greater market penetration per capita than any other industrial economy. We have developed the steel casting technology that is used all over the world.*

*You, as members, are responsible for our achievements and successes. It is not staff and budgets, but members and participation that is the key to SFSA's stature and accomplishments. Without the ongoing contribution of members, their leadership and guidance, their openness and sharing, and their work and participation, SFSA would not be here. Our Industry has suffered through traumatic times, both in the great depression in the 1930's and again in the severe recession of the 1980's. We are again being tested as our markets are depressed, the strong dollar makes global supply attractive, and our precarious state makes capital scarce and expensive. We will survive this current challenge and emerge as a strong and vibrant industry.*

*We need to celebrate this important event, 100 years of your success. Our theme is "A Century of Service". Like other important celebrations, it may not come at a convenient time or during a prosperous time in the Industry. But like graduations and weddings, we may need to draw on our savings, rearrange our schedules and celebrate our history. I would encourage you to join the celebration at the Annual Meeting. Don't miss it!*

*Raymond*

## STEEL FOUNDERS' SOCIETY OF AMERICA MEETINGS CALENDAR

### 2002

- June 5-6 Executive Committee, Technical Steering, SFSA Foundation, and Board of Directors meetings, Hilton Hotel, Northbrook, IL
- July 23-24 C&LA Research Review Meeting, Ramada Hotel O'Hare, Chicago
- August 19-20 Marketing Committee - Rosemont, IL
- September 12-13 Western Division Meeting and Tour of ME Global - Tempe, AZ
- September 21-25 SFSA's 100<sup>th</sup> Anniversary Annual Meeting - The Broadmoor, Colorado Springs, CO
- November 5 Specifications Committee  
November 6-9 National T&O Conference - Hotel Inter-Continental, Chicago, IL
- December 2-3 Marketing Committee - Rosemont, IL

### 2003

- September 13-17 SFSA Annual Meeting, The Ritz-Carlton Resort, Amelia Island, FL
- November 5-8 National T&O Conference - Hotel Inter-Continental, Chicago, IL

### 2004

- September 11-15 Annual Meeting - site to be selected
- November 3-6 National T&O Conference - Hotel Inter-Continental, Chicago, IL

**STEEL FOUNDERS' SOCIETY OF AMERICA  
BUSINESS REPORT**

**SFSA Trend Cards** 3 Mo Avg                      Mar                      Feb  
(%-12 mos. Ago)

**Carbon & Low Alloy**

Shipments	-20.5	-22.2	-7.7
Bookings	-18.2	-24.6	-17.1

**High Alloy**

Shipments	-3.4	11.2	-28.0
Bookings	-6.1	0.0	-18.5

**Department of Commerce  
Census Data**

**Iron & Steel Foundries (million \$)**

Shipments	1,220	1,199	1,213
New Orders	1,207	1,177	1,174
Inventories	1,729	1,713	1,731

**Nondefense Capital Goods (billion \$)**

Shipments	59.5	59.1	59.2
New Orders	57.7	55.6	57.3
Inventories	118.1	116.2	118.3

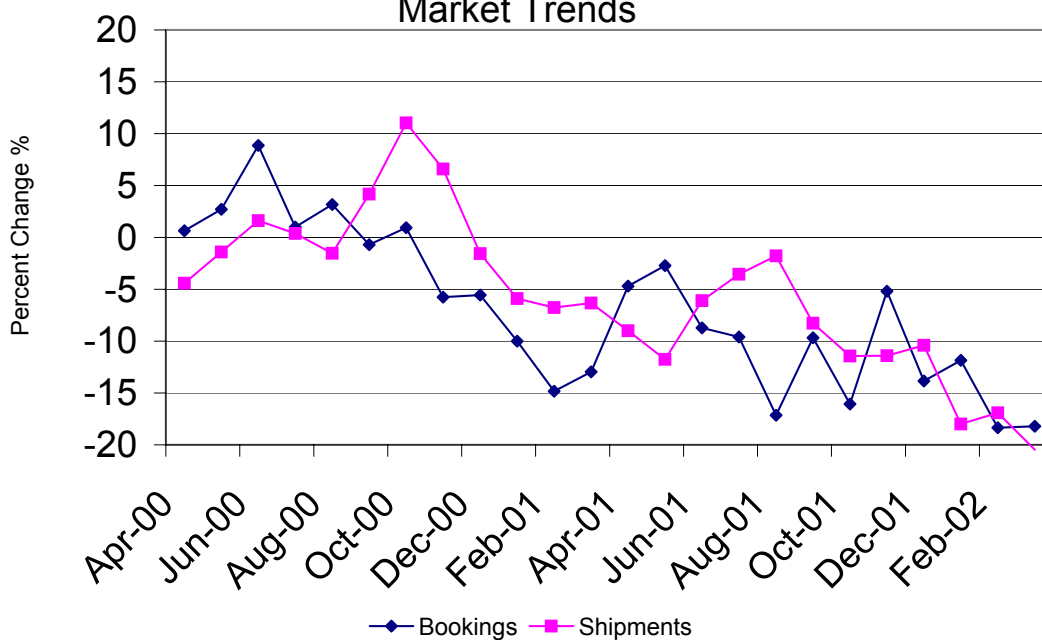
**Nondefense Capital Goods  
less Aircraft (billion \$)**

Shipments	55.2	54.5	55.0
New Orders	54.1	52.4	54.3
Inventories	94.8	93.9	94.5
Inventory/Orders	1.75	1.79	1.74
Inventory/Shipments	1.72	1.72	1.72
Orders/Shipments	0.98	0.96	0.99

**American Iron and Steel Institute**

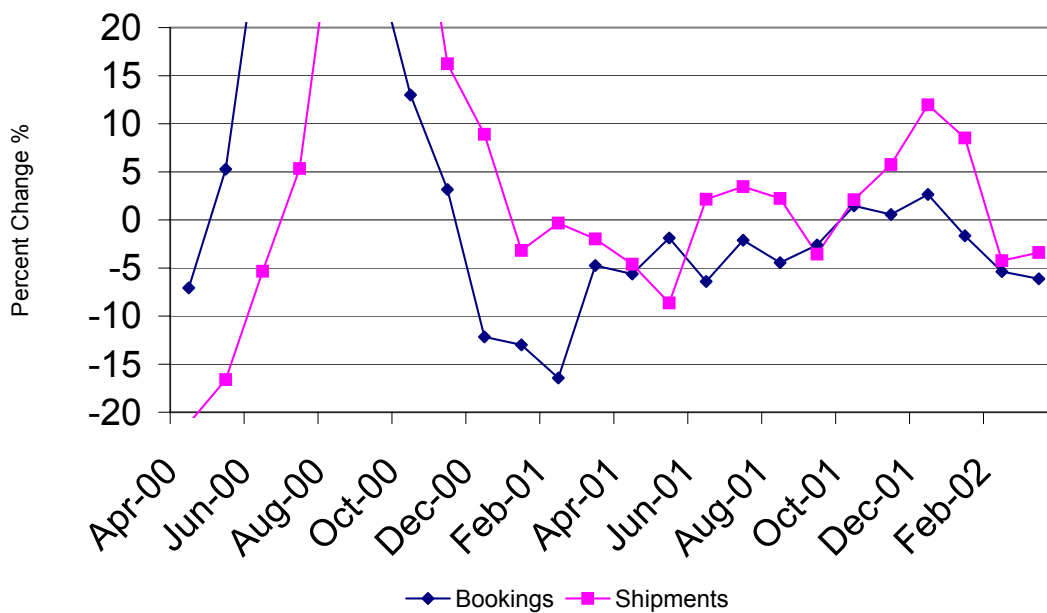
Raw Steel Shipments (million net tons)	7.9	8.3	7.5
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### Carbon & Low Alloy Casting Market Trends



SFSA Postcards

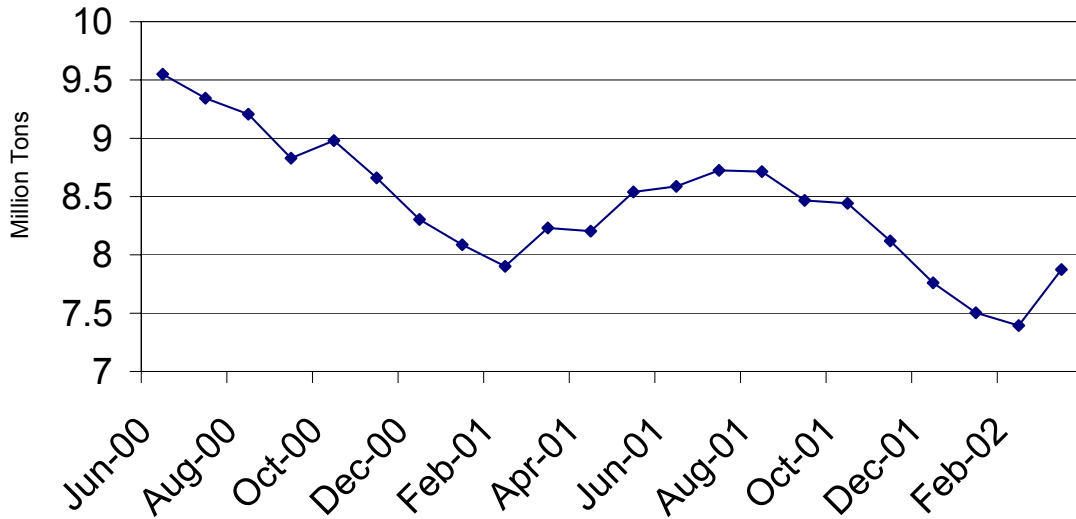
### High Alloy Casting Market Trends



SFSA Postcards

## Raw Steel Shipments

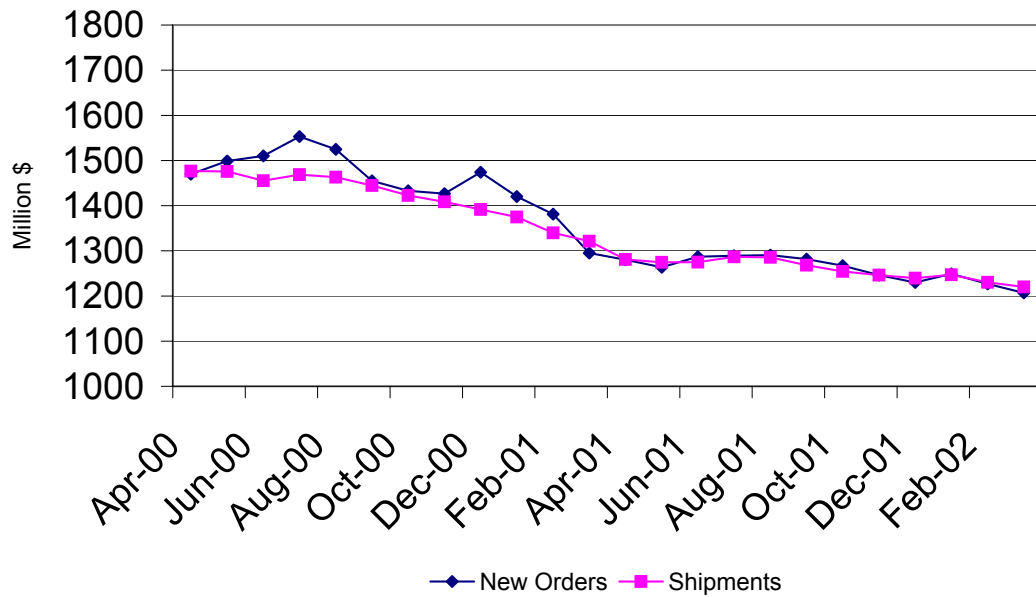
3 month average



AISI Data

## Iron and Steel Castings

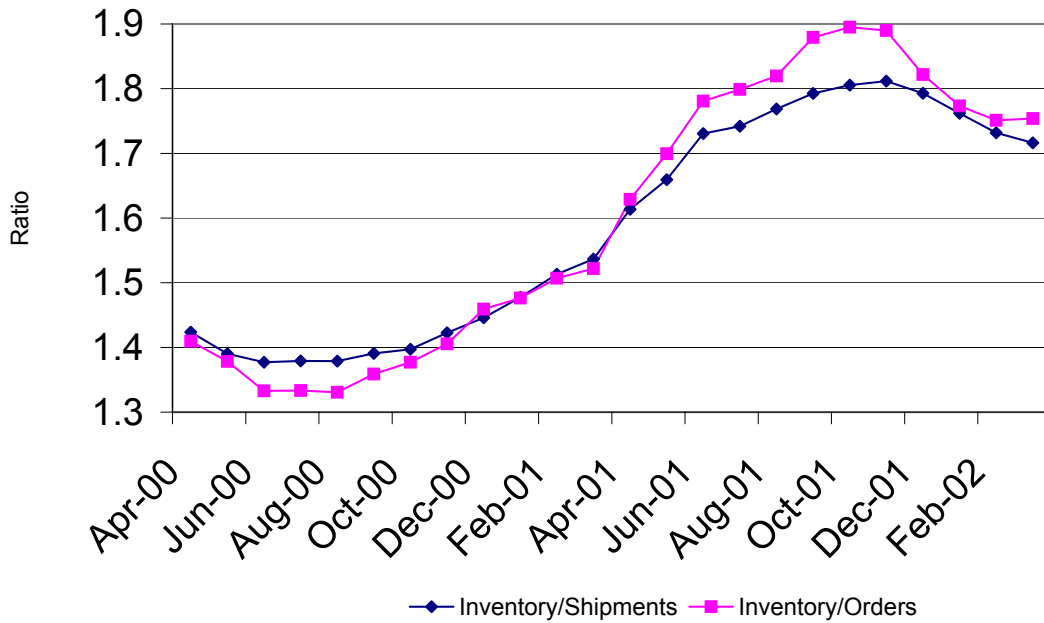
3 month average



SFSA

### Nondefense Capital Goods less Aircraft

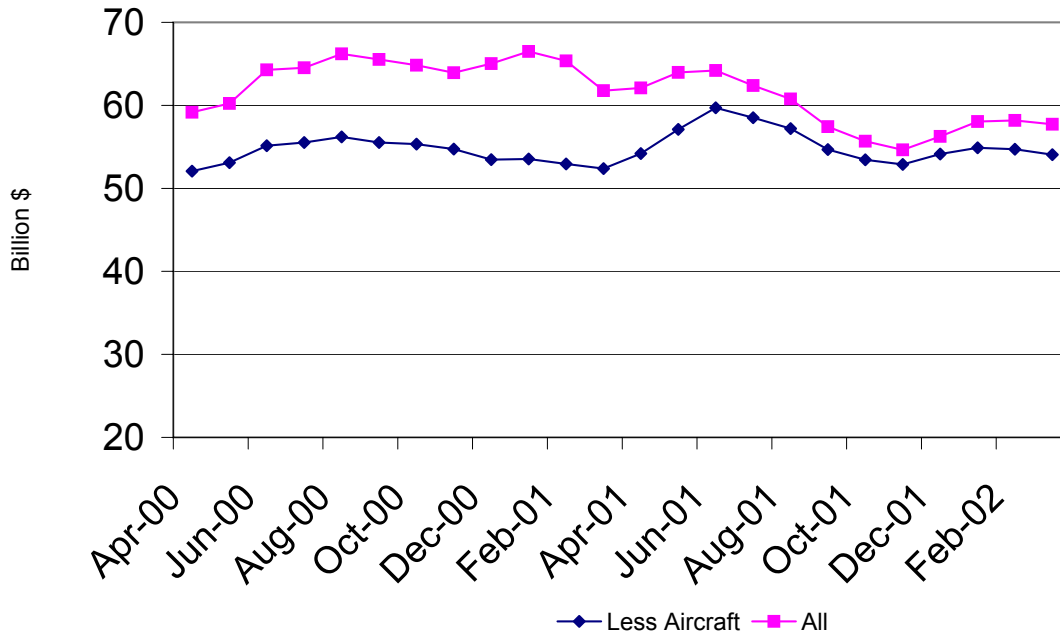
3 month average



Department of Commerce

### Nondefense Capital Goods New Orders

3 month average



Department of Commerce

# American Foundry Society, Inc.

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800/537-4237 \* FAX: 847/824-7848 \* [www.afsinc.org](http://www.afsinc.org)

**NOTE:** Additional information and high-quality digital images on each of the winning components (including the "Casting-of-the Year" presentation) are available at [www.afsinc.org/contest](http://www.afsinc.org/contest)

FOR IMMEDIATE RELEASE

Contact: Mike Lessiter  
mlessiter@afsinc.org  
847/827-7725

## **Casting Industry's 'Best' Recognized in North American Contest**

**DES PLAINES, Ill.**...Fifteen component designs, including a "Casting of the Year," received top recognition in the North American metalcasting industry in 2002 at the American Foundry Society's 106<sup>th</sup> annual Casting Congress & CastExpo this month in Kansas City. The 15 components recognized in the "2002 AFS Casting Contest," sponsored by the AFS Marketing Div. and *Engineered Casting Solutions* magazine, represent the best in the metalcasting industry, which is comprised of 2700 operations and 220,000 employees.

The 15 firms recognized were the producers of the highest-scoring entrants in this industry-wide contest. An independent panel of judges evaluated each cast component on criterion that centered on the functional benefits and savings delivered to the manufacturing community.

### **2002 Casting of the Year**

Receiving the highest "Casting of the Year" honor was **Prototype Casting, Inc., Denver**. Prototype Casting received the contest's highest recognition for a set of magnesium castings produced for the InFocus (Wellsville, Ore.) LP 140 notebook projector. Produced via the rubber/plaster mold process, the castings weigh just 0.22 lb and 0.05 lb and feature a typical wall thickness of 1.2 mm. The entire process (through post-machining) required only 20 days from the moment CAD files were transferred to the foundry.

Judges' comments included: "An excellent example of near-net-shape, thin-wall casting possibilities"... "Very impressive, spectacular component cast cost-effectively in a conventional process"... "Extremely thin, difficult and rangy part"... "Clearly a better product when compared to an injection molded part."

The other casting suppliers and their award-winning components are summarized below:

### **Best-in-Class 2002**

- **Pacific Cast Technologies, Inc., Albany, Ore.** (thrust beam for the Boeing Delta IV satellite launch vehicle). Converted from an aluminum forging to a titanium investment casting, this 91-in. part is the longest titanium casting in aircraft/launch vehicle history. The 330-lb component improved fracture toughness by 30%, and saved 1000 lb, which was critical to achieving the launch vehicle's higher payload (12.2 tons) objectives.
- **General Motors Powertrain, Defiance, Ohio and Saginaw, Mich.** (inline 5 cylinder block and inline 6 cylinder head for GM's new Vortec 3500 and 4200 light truck engine, respectively). Produced via the lost foam casting process, these aluminum components (86 lb for the block and 49 lb for the head) provided annual savings of more than \$3 million for the award-winning Vortec engine. GM saved nearly \$25 million in capital equipment investment for machining that was eliminated due to the as-cast features possible through the process.



- **Madison-Kipp Corp., Madison, Wis.** (fuel rail housing for passenger cars). Produced in the semi-solid aluminum casting process, this 1-lb casting design replaced a steel tube fabrication. The component met 7000-lb crash test load and elongation requirements while minimizing mass and costs. The increased dimensional accuracy of critical features produced close-tolerance machining.
- **Aarrowcast, Inc., Shawano, Wis. / Caterpillar Agricultural Products, Dekalb, Ill.** (track roller frame for Caterpillar tractor undercarriage). This two-piece ductile iron casting (530 lb) was converted from a 38-piece steel fabrication and resulted in overall cost savings, higher strength and an improved part appearance.
- **Intermet Corp. Hannibal Plant, Hannibal, Mo.** (instrument panel frame for General Motors' luxury car platform). This two-piece, 15-lb magnesium die casting replaced a stamped steel assembly at a 75% weight savings and saved overall cost by eliminating complex assembly operations.
- **Wescast Industries, Inc.—Wingham Foundry, Wingham, Ontario.** (exhaust manifold for Mazda). By redesigning from a stainless steel fabrication to a 14.5-lb sand casting design, the final component featured 4-mm walls, eliminated 15 welds and reduced cost by 50%.
- **Grede Foundries—Milwaukee Steel Div., Milwaukee** (articulating hinge for a logging application). These two steel castings (564 lb and 450 lb) replaced a welded assembly that consisted of 25 and 40 pieces respectively. The sand-cast design reduced total assembly weight by 15%, speeded assembly time and improved tolerance control.
- **Citation—Texas Foundries, Lufkin, Texas** (lower control arm for DaimlerChrysler's 2500/3500 Dodge Ram). Converted from a four-piece stamped steel weldment to an austempered ductile iron sand-cast component, this single 34-lb casting reduced weight by 5 lb. The automaker projects a \$1.5-million savings in tooling over the life of the program due to the conversion.
- **Consolidated Casting Corp., Hutchins, Texas** (tab ring liner for Honeywell gas-powered combustor assembly). These 0.62-lb components were investment-cast in a nickel alloy and replaced 16 individual machine tabs that required 64 welds. The design change reduced assembly time by 26 minutes and offered a 50% per part cost reduction.

#### **Honorable Mentions**

- **John Deere Foundry Waterloo, Waterloo, Iowa** (suspension lower control arm for the John Deere 8020 series tractor). Originally conceived as a steel forging, engineers redesigned the 145-lb part to be produced in the sand casting process with austempered ductile iron. The cast design allowed bores to be cored out, greater overall design flexibility, and reduced weight and machining time.
- **Wellsville Foundry, Inc., Wellsville, Ohio** (heat exchanger component). This single gray iron casting—featuring 217 fins—was converted from a series of fabrications and assemblies. The 115-lb nobake molding cast design offered a significant lead-time reduction, durability improvement (it is nonleaking due to elimination of welds) and provided a significant cost savings.
- **Piad Precision Casting Corp., Greensburg, Pa.** (rack block and gear for fire truck pumps). Converted from a machined bar stock application, these 3-lb aluminum-bronze castings produced via the permanent mold casting process allowed cast-to-size teeth with gear diameters and tooth profiles cast within  $\pm 0.005$  in. A 20% cost savings was realized over the initial stainless steel design.
- **Columbiana Foundry Co., Columbiana, Ohio** (axle housing for Goodman Equipment). Converted from a machined weldment, this 380-lb steel casting offered a 33% cost savings due to the elimination of the assembly time of the weldment.
- **Irish Foundry & Manufacturing, Inc, Seattle** (water softener components). Converted from a three-piece fabrication, these two aluminum castings (6.5 and 22 lb) produced via the lost foam casting process reduced machining costs by 50% and offered an overall 60% cost reduction.

**The deadline for the 3<sup>rd</sup> annual Casting Contest is December 1, 2002.**

*Readers may request a free casting contest brochure. Please forward reader service inquiries to Mike Lessiter (mlessiter@afsinc.org), American Foundry Society, 505 State St., Des Plaines, IL 60016.*

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