

Finishing Facts

News From OSHA

OSHA Lowers Penalties For Serious Violations

The Occupational Safety and Health Administration (OSHA) is lowering the minimum penalties for willful serious violations by small businesses. The action is supposed to ease the financial burden on small employers.

Small employers are those with 50 or fewer employees. The proposed penalty for a serious willful violation for those employers will be no less than the statutory minimum of \$5,000.

Last June, OSHA announced a five-fold increase to \$25,000 for a willful serious violation, to deter "bad actors." Because of concerns from some states with their own plans, OSHA will use a graduated scale to set penalties, depending on the number of employees in a company.

For willful serious violations, the adjustment factor for size in the proposed penalty will be applied as shown:

| Employees | % Reduction |
|-------------|-------------|
| 10 or less | 80 |
| 11-20 | 60 |
| 21-30 | 50 |
| 31-40 | 40 |
| 41-50 | 30 |
| 51-100 | 20 |
| 101-250 | 10 |
| 251 or more | 0 |

There can be an additional 10-percent reduction based on the employer's history. This adjustment can be made if the employer has not been cited by OSHA for any serious, willful or repeated violations in the past three years.

In addition, a gravity of high, moderate or low will be assigned. The gravity will be based on the severity of the violation (*i.e.*, the probability of serious injury or death) determined during an inspection. The proposed penalty will then be determined from the accompanying table.

Test Your Plating I.Q. #316

By John Laurilliard, CEF, Philadelphia, PA

Nickel Plating (true or false)

1. The Watts nickel bath was named for James Watts, the inventor of the steam engine. (T) (F)
2. The principal function of boric acid is to control the pH of the solution in the immediate vicinity of the anode, to promote anode corrosion. (T) (F)
3. A standard Watts bath has a nickel concentration range of about 9-11 oz/gal. (T) (F)
4. Sulfamate nickel solutions produce low-stress ductile deposits. (T) (F)
5. Hydrogen peroxide is often added to nickel solutions to oxidize and precipitate excess monovalent nickel. (T) (F)

Answers are on page 81.

Penalties to be Proposed

| Total % Reduction For Size and/or History | Gravity | | |
|---|----------|----------|----------|
| | High | Moderate | Low |
| 0 | \$78,000 | \$55,000 | \$40,000 |
| 10 | \$63,000 | \$49,500 | \$36,000 |
| 20 | \$56,000 | \$44,000 | \$32,000 |
| 30 | \$49,000 | \$38,500 | \$28,000 |
| 40 | \$42,000 | \$33,000 | \$24,000 |
| 50 | \$35,000 | \$27,500 | \$20,000 |
| 60 | \$28,000 | \$22,000 | \$16,000 |
| 70 | \$21,000 | \$16,500 | \$12,000 |
| 80 | \$14,000 | \$11,000 | \$8,000 |
| 90 | \$7,000 | \$5,500 | \$5,000 |

Corrections Announced For Confined Space Rules

Some corrections and clarifications to the confined space standards for shipyards have been made by OSHA, according to Peter Moleux, P.E., R.E.P., chairman of AESF's OSHA Committee. In the March 16 *Federal Register*, it states that OSHA:

- Specifies the order of atmospheric tests that must be completed before workers can enter a confined space with a potentially dangerous atmosphere—oxygen content, flammability, toxicity.

- Clarifies when flammable atmospheres must be kept at or above the upper explosive limit (UEL) when they already are at, or exceed those levels.
- Describes who must test atmospheres before "hot work," such as welding, can be done. A marine chemist must test and certify that the atmosphere is safe before workers can perform hot work on tank vessels. For other hot-work spaces that do not need to be certified by a marine chemist, a competent person must still visually inspect the space and test the atmosphere.

Environmental Pressures Can Spur Competitiveness

A study of the role of environmental regulations in determining competitive advantage found that in six industries, environmental investments created some change in the competitive structure of the industry, according to the March-April issue of *Pollution Prevention News*. The project, conducted in 1993-94, was a joint effort of the Management Institute for Environment and Business, St. Gallen University in

Switzerland, and three offices of the U.S. Environmental Protection Agency (EPA).

The study found that environmental pressures created opportunities for companies to gain competitive advantage in domestic and international markets. Industries generally initiated innovations—including material substitutions, process changes, and changes in product formulations—in response to environmental pressures from regulations, or from consumers and professional advocacy campaigns. The innovations resulted in cost reductions, yield improvements, market share increases, and/or export expansion.

The six industries (with aggregate worldwide sales of \$160 billion/yr) were:

- Paint and coatings
- Pulp and paper
- Computers and electronic components
- Refrigerators
- Batteries
- Printing inks

Ultrahigh-pressure Waterjet Is Faster and Better

The National Defense Center for Environmental Excellence (NDCEE), run by Concurrent Technologies Corporation, Johnstown, PA, has helped the Corpus Christi Army Depot (CCAD) find a “cleaner, cheaper, smarter” method of cleaning parts. NDCEE recently demonstrated

that an ultrahigh-pressure waterjet (UHPWJ) system can strip parts about 25 times faster than traditional methods. The process allows the recycling of previously unusable parts and nearly eliminates environmental discharge.

Traditional stripping and cleaning methods often damage engine parts (many costing \$2,000–\$15,000), causing them to be unusable. The UHPWJ system has a near-zero rejection rate.

According to NDCEE, the payback for the new system is one year, when applied to stripping T-700 Blackhawk helicopter parts, primarily cooling plates.

Study Shows Corrosion Has a High Price Tag

The annual cost of metallic corrosion in the U.S. economy is about \$300 billion, according to an updated report released recently by Battelle, and the Specialty Steel Industry of North America. The report estimates that about one-third of the cost of corrosion (\$100 billion) is avoidable and could be saved by broader application of corrosion-resistant materials, and application of best anti-corrosive practice from design through maintenance.

The estimates result from a partial update by Battelle scientists of the findings of a study conducted by Battelle and the National Institute of Standards and Technology titled

“Economic Effects of Metallic Corrosion in the United States.” The original work (in 1978) was based on an estimate that in 1975 metallic corrosion cost the U.S. \$82 billion (4.9 percent of the Gross National Product), and about \$33 billion was avoidable because best practices were not used at the time.

Powder Sales Still Setting Records

North American sales of thermoset general decorative powder coatings for the fourth quarter of 1994 rose 12 percent in pounds over the same period in 1993. Total sales for 1994 ended 14 percent ahead of 1993, an all-time high, according to the Powder Coating Institute. In total dollars, sales ended with a 17.5 percent increase over 1993. The report noted a 10-percent increase in powder coating installations in 1994.

Chromagraphic Wins NCCA Design Award

The “Cadillac K Special Door Molding,” manufactured by Chromagraphic Processing Company, Williamsport, PA, was named grand prize winner in the 27th annual National Coil Coaters Association (NCCA) Design Showcase Awards. The award will be presented at the NCCA Fall Meeting, October 17–20, at the Westin Hotel O’Hare, Rosemont, IL.

The winning entry is the front- and rear-door window trim on the Cadillac DeVille. Also contributing on the winning submission were BF Goodrich, Elf Atochem, Eldon Extrusions, Coshocton Steel, A. Schulman, Inc., and Durochrome. The molding will be featured on the cover of the September issue of *Modern Metals*.

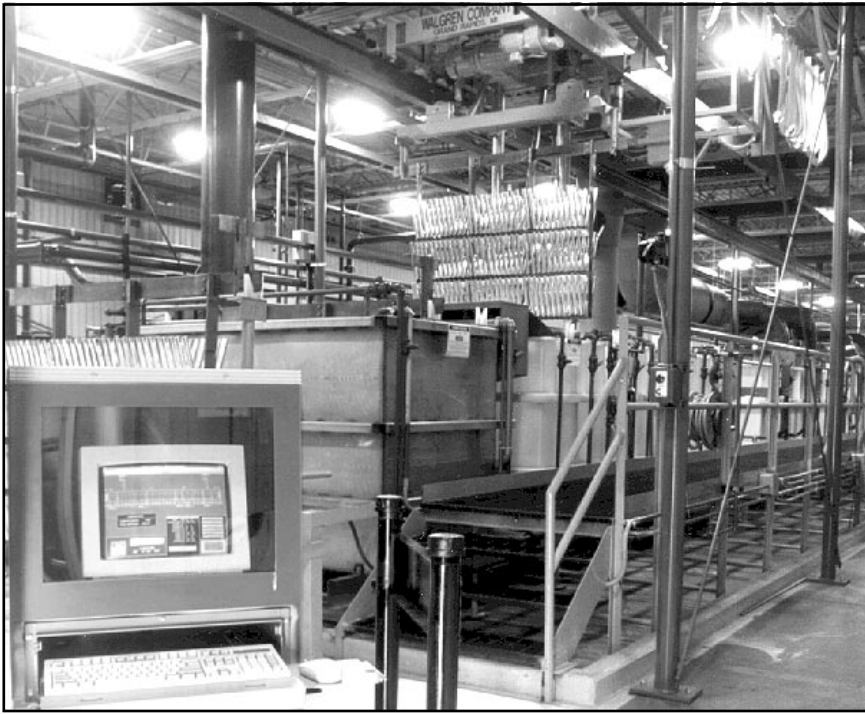
Steel Shipments Show Increase in 1995

The steel industry of the U.S. shipped 7,799,115 net tons of steel in February 1995, compared to 7,141,793 in February 1994, according to the American Iron and Steel Institute. February shipments were, however, 4.1 percent below the 8,129,229 net tons shipped in January 1995.

NACE International Proceedings Available

NACE International, Houston, TX, has published *Corrosion and Corro-*

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Walgreen Company, Grand Rapids, MI, recently completed a fully automated anodizing system at Floturn, Inc., Cincinnati, OH. Floturn is a manufacturer and marketer of diamond-turned photoconductors (drums) for laser printers, dry paper copiers and color printers. The line includes a computer-controlled overhead hoist.

sion Control of Aluminum and Steel in Lightweight Automotive Applications. The book is a compilation of 32 technical papers presented at NACE's annual forum CORROSION/95. The proceedings represent the first international effort to combine both the environmental (lightweight/recyclability) and durability (increased lifetime expectancy) effects for steel and aluminum in automotive body construction.

The book sells for \$65 (\$45 for NACE members). For information, contact NACE Member Services (Phone: 713/492-0535; FAX 713/579-6694).

Company News

o **Advance Circuits, Inc.**, Minnetonka, MN, has presented **LeaRonald, Inc.**, Freeport, NY, with its "Supplier Excellence Award," in recognition of outstanding contributions made by the company—in particular, LeaRonald's Minneapolis sales and service team.

o **Herberts GmbH** held a press conference on June 22 to officially announce the opening of its new aqua-coatings factory in Wuppertal, Germany. The factory is the largest investment in the company's history.

o **Engineering News-Record**, a trade magazine of the engineering and construction industry, has ranked **Geraghty & Miller, Inc.**, Denver, CO, 43rd among the top 500 design firms in the U.S.—10th among those specializing in hazardous waste management. Based on total billings in 1994, Geraghty & Miller moved up seven places from the previous year.

o **Automa-Tech Les Techniques De L'Automation**, a French producer of automated exposure and related equipment for electronics manufacturing, has named **DK Associates, Inc.**, Tempe, AZ, as its North American agent for the printed circuit, surface mount, and semiconductor markets.

o **Pratt & Lambert Industrial Coatings**, Buffalo, NY, has earned **Ford Motor Company's** Q1 status, a designation that a supplier's quality systems meet the automaker's quality standards. Pratt & Lambert Industrial Coatings, a division of Pratt & Lambert United, manufactures powder coatings and liquid coatings for a variety of industrial applications.

o **Occidental Chemical Corporation** (OxyChem) is producing hypophosphorous acid at a new plant in Niagara Falls, NY. Among the applications for the product are its uses as a catalyst for polyester fiber, reducing agent in organic synthesis, anti-oxidant in synthetic fiber manufacture, textile color lightener, reducing agent in electroless plating processes, reagent for organic synthesis to remove aromatic amino groups, and intermediate for other hypophosphites.

o **RBP Chemical Corporation**, Milwaukee, WI, has contracted with **CSS International Corporation** to be its distributor for the Asian market.

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CSS provides complete import, export and consulting services for manufacturers of materials and products related to the electronics industry. It has branches in the U.S. and Korea.

○ **Magnetic Analysis Corporation** will sell a line of magnetic particle and dye penetrant products in the U.S., manufactured by **Tiede GmbH & Co.**, Essingen, Germany. Tiede manufactures magnetic particle and dye inspection equipment and supplies for surface defect detection in the iron and steel industries.

○ **Ciba Geigy Corporation** has approved funding for the addition of new facilities in Newport, DE, to manufacture a new family of pigments. The construction of the first phase of the "Phenix Project" is expected to start in late summer. The Phenix Project includes a new family of orange to violet pigments, known as Diketo Pyrrolo Pyrrol (DPP), developed by Ciba for automotive finishes, plastics and paints. The expansion will double the company's capacity and will cost \$50 million. The new facility is expected to be on line in early 1997.

Funding was also approved for the modernization of the company's Quinacridone (QA) pigment manufacturing facility. QA pigments are red and red shades, and have been made in Newport since the 1950s.



Titanium Hearth Technologies has acquired an electron beam facility in Nevada, which will allow it to increase its titanium recycling and refining capacity to more than 20 million lb/yr.

○ **Titanium Hearth Technologies** (THT), Exton, PA, has acquired **Viking Metallurgical's** titanium recycling and refining electron beam facility in Verdi, NV. The acquisition of the Verdi facility, which houses a 2.4 megawatt electron beam cold hearth furnace, will allow THT to increase its titanium recycling and refining capacity to more than 20 million lb/yr. The Verdi facility can melt three-five million lb of titanium

annually, complementing THT's refining operations in Morgantown, PA, with a refining capacity of more than 16 million lb.

○ **Activated Carbon Resources, Inc.**, Westport, CT, has received approval from the **Alabama Department of Environmental Management** (ADEM) to build a manufacturing facility to recycle spent activated carbon. Activated carbon is a filtration medium used in industrial applications for the clean-up of industrial wastewater, treatment of drinking water, purification of air, and odor control of industrial processes. It is also used to remove gasoline and gasoline vapors from groundwater, caused by leaking underground storage tanks. The announcement said ADEM is working with the company to select a suitable site.

○ **Davy International**, Sheffield, England, and **POSEC**, the new engineering and construction arm of Korea's **POSCO**, have formed a joint venture company called **Davy Distington, Ltd.** The new company, located in Sheffield, will exploit the continuous casting technology of Davy Distington. The announcement said the partners intend to expand rapidly, to serve increased business from within POSCO, and other international steel customers. Davy

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International is a member of the **Engineering Division of Trafalgar House, Plc.**

o **Advanced Heat Treat** of Waterloo, IA, is opening a new 12,000 ft² facility in Monroe, MI, between Detroit and Toledo, OH, near I-75. With completion expected this fall, the plant will employ 25 people. Services will include quick turn-around ion-nitriding case-hardening, stress relief, and synthetic media blasting for steel, fiberglass, aluminum and polyurethane.

o **Ardrox, Inc.**, Lake Bluff, IL, a supplier of specialty chemicals for the manufacturing industries, has changed its name to **Brent America, Inc.**, a member of **Brent International Group** of the U.K. Product names will not change, and the Ardrex trade name will continue to be used where appropriate.

o **Washington Steel Corporation** has completed the installation of a \$7 million alloy addition system at its stainless steel facility in Houston, PA. The alloy addition system is part of a \$25 million upgrade at the facility. The company is also installing sequence casting capability, expanding the environmental control system, and increasing the melt shop's heat

sizes. The remaining improvements are scheduled for completion in August.

o **Aercology**, Old Saybrook CT, has named **PureQuest International, Inc.** to be the distributor of its products for Florida and the Caribbean area. The company will handle Aercology's line of modular dust/smoke collectors, mist collectors, and electrostatic precipitators. PureQuest is located in Ocala, FL.

o **United States Filter Corporation**, Palm Desert, CA, has acquired **The Permutit Company, Ltd.**, and **The Permutit Company, Pty. Ltd. (The Permutit Group)** from **Thames Water, Plc.**, of the UK. The transaction was effected through a share purchase agreement, whereby U.S. Filter's UK subsidiary acquired all capital stock for about \$10 million.

In Memoriam

Clyde E. McNeely, founder and chief executive officer of Chilton Plating Company, Inc., Chilton, WI, died on April 28. A member of AESF since 1959, he was active in the Milwaukee Branch.

George Ondecker, a past president of the Garden State Branch, died recently. He was 67. Until his retirement in 1993, he owned and operated Ondecker Metal Finishers, an electroplating company, in Newark, NJ.

Edward C. Bertucio of Western Reserve Manufacturing Co., East Greenwich, RI, died recently. He was a past president of the Baltimore-Washington Branch, and had been active on AESF national committees in the past. He was also a member of the American Society for Testing and Materials, the National Association of Corrosion Engineers, and the American Society of Metals.

AESF recently learned of the death of **George G. Knepp** of the Los Angeles Branch. A member of the Branch since 1979, he passed away on November 27, 1994.

Answers to quiz from page 77.

1. False. The Watts bath was named for, and developed by, Oliver P. Watts, professor at Wisconsin University.
2. False. Boric acid controls the pH of the cathode film, to produce ductile, smooth, whiter, unburned nickel deposits.
3. True.
4. True.
5. False. Hydrogen peroxide is often added to nickel solutions at a pH of 5.2-5.5 to oxidize ferrous iron into ferric iron, and precipitate it as ferric hydroxide.