

## FACT SHEET:

# Personal Protective Equipment

One of the problems that confronts women in both traditional and nontraditional jobs is the lack of protective clothing and equipment made in their sizes. Work clothes and equipment are too rarely designed and manufactured with women in mind. Most are made for the average size man.

As women have moved into formerly all-male occupations, the problem has been dramatized. Women find themselves wearing gloves that are too large and may catch in machinery, too-long boots whose protective steel toes begin only after the wearer's toes end, ill-fitting respirators that fail to keep out dangerous fumes, and hard hats that slip off and leave the head unprotected.

Equipment like this not only fails in its purpose but can actually cause accidents. The Coal Employment Project, an organization concerned with women in mining, reported hearing of a woman who lost a hand when her too-large glove caught in a machine.

### Hazards for traditional jobs

Less obvious, but just as real, are the hazards for women in female-intensive jobs. Properly fitting gloves and respirators are needed to protect hospital laboratory technicians from toxic chemicals and infectious tissue specimens. Gloves, respirators and even protective shoes are needed by some women in arts and crafts jobs. Women who work in refrigerated areas, as in meatpacking plants, must have insulated gloves and thermal clothing, and meatpackers who work with knives wear chain mail gloves like the knights of old.

Sometimes inappropriate clothing may not be dangerous, but is simply aggravating. Women coal miners complain feelingly of having to wear men's coveralls which force a woman to undress completely when she has to go the bathroom. "Often," wrote one, "I'd have to take off a hard hat with a welding shield, gloves, tool belt, and safety belt in order to get down to my regular work pants. ...if you're also wearing overalls and have to unbuckle the bib or unzip and shrug off the top in the small space

of a porta-john with no place to put removed clothing or tools, it's especially frustrating."

In recent years, the work of organizations such as the Coal Employment Project and WOHRC itself has helped to enlighten manufacturers about women's

they will not order through companies that do not carry women's sizes; women workers need to be more informed so that they can insist on the equipment they really need or, if self-employed, buy it themselves. The survey discovered that almost half the companies contacted will sell by mail order to individuals as well as on a wholesale basis.

Following are the results of the survey:

**Head and face protection.** This is the least likely to be provided in female sizes. Only 14 percent of the companies surveyed made such items as hard hats, bump caps, welding helmets, hair protective devices, hoods, perspiration bands and hats with face shields in sizes that women can use.

However, some items such as hard hats and bump caps were found to have adjustable inside headbands which fit a wide range of head sizes. Many hard hats also had adjustable harnesses to ensure fit.

Still, many women are reported wearing men's hard hats which they must stuff with paper to prevent wobbling.

**Safety goggles.** About one-third of safety glass companies make women's sizes, but only a few goggle companies make sizes that women can use. Goggles, face shields and side shields that are too large can be especially dangerous because they can leave room for particles to fly in and injure the eye.

A Wisconsin Workers Compensation Accident Investigation made during the 1970s cited the case of a woman who suffered such an injury while she was cleaning her milling machine with a low-pressure air hose. Even though she wore safety goggles with side shields, they were so big that they slipped down her nose leaving her eyes partially unprotected.

**Gloves.** WOHRC found that gloves are one of the two items most frequently found in women's sizes. Still, only 50 percent of manufacturers provide them, and many companies fail to manufac-



**This welder's outfit includes items that all come in women's sizes. They are a leather bib apron, gloves, visor and the face shield held by the model.**

needs. A recent WOHRC survey of 116 companies found that manufacturers of footwear, eye safety devices and gloves were the most responsive. However, for all protective clothing and equipment, fewer than half of the companies surveyed made items appropriate for women.

Even when they do, WOHRC found, there is another problem: Many workers and employers do not know where to order. Under OSHA regulations it is the employer who is responsible for issuing the protective clothing and equipment, and many workers simply accept what is provided.

Employers need to be educated so that



An adjustable hard hat, ear muffs to screen out noise, safety glasses, latex gloves, a lightweight coverall and a NIOSH-approved respirator that filters out organic vapors are shown by a model at a WOHRC PPE "fashion show."

ture their full line in women's sizes. Too often women's sizes must be specially ordered, and employers, unaware of this, do not make them available.

Still another problem is the lack of information about materials needed to protect workers from specific chemicals. One recent study found that out of 28 protective gloves, not one offered complete protection against all of the 27 commonly used laboratory solvents tested.

**Respirators.** WOHRC found respirators the most striking example of the failure to provide personal protective equipment in women's sizes. This is especially significant in the face of OSHA's current policy to de-emphasize engineering controls of the environment in favor of the less expensive personal protective devices.

The WOHRC survey found available in sizes appropriate for women only 22 percent of air line respirators, which are the most effective since they carry fresh air to a wearer working in a contaminated area. Only 29 percent of respirators with mechanical filters come in appropriate sizes, and only 20 percent of those with chemical cartridges that filter out specific pollutants. No powered

air purifying respirators are available in sizes useful for women.

Improperly fitting respirators are particularly serious because their wearers often do not realize that they are not being adequately protected.

**Tools and safety equipment.** No hand tool companies were found that produce tools for woman-size hands. The wrong size tools can create undue pressure on vulnerable nerves and blood vessels, aggravating hand and wrist ailments such as tenosynovitis and carpal tunnel syndrome.

However, about a third of the companies manufacture safety belts useful for women, and more than 40 percent provide safety harnesses for women.

**Body protection.** About one-third to one-half of the manufacturers surveyed make coveralls and protective coats, pants, sleeves, vests, leggings and aprons in women's sizes.

To meet complaints such as those of the women miner above about coverall design, Kay Caddel of the Texas Tech Textile Research Center working under a contract from the U.S. Bureau of Mines, has developed a coverall which zips from knee to knee, so that it does not have to be taken off to go the bathroom. It also has a padded back area especially helpful to women miners who must bend over in low tunnels. The Center has also developed a sizing chart for women's work clothes.

Further information about these may be obtained from Jim Peay, Bureau of Mines, Cochran Mill Road, P.O. Box 18070, Pittsburgh, PA 15236.

**Boots and shoes.** Foot protection is one area in which manufacturers seem to have come closest to meeting women's needs. Almost 70 percent of those surveyed by WOHRC make steel-toed shoes in women's sizes and 75 percent make women's rubber boots. Far lesser numbers, however, make women's toe guards, knee pacs, shoe guards and other devices.

The problem with women's protective footwear has continued to be the lack of safety standards by which they can be judged. OSHA has adopted the standard set by the American National Standards Institute (ANSI), but this was originally developed only for men. In 1976, the National Institute for Occupational Safety and Health found in a study of

women's safety shoes that, even using relaxed standards, "women's safety-toe shoes will not meet even the least stringent requirements of the men's safety-toe footwear standards."

In 1978, ANSI developed a standard for women's safety shoes, but this has not yet been adopted by OSHA. Some manufacturers, however, now advertise their women's work boots as being in compliance with one class or another of the ANSI standard.

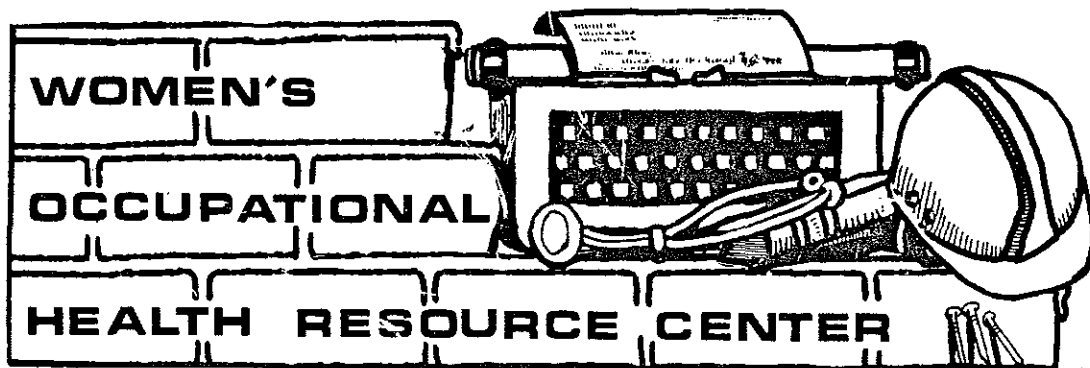
**The unmet need.** Much needs to be done before women workers have full access to adequate personal protective equipment.

- More data is needed on women's body measurements so that clothing and equipment can be designed realistically.
- Women workers themselves need to be involved in the design of the clothes and equipment so that their desires and observations can be incorporated into the final product.
- More equipment must be manufactured based on these measurements and needs.
- Women workers and their employers need better channels to inform them of equipment that already exists.
- Improved standard setting and certification procedures need to be developed.
- Workers need to be better educated about the importance of personal protective equipment.

Even though the best way to deal with workplace hazards is to prevent them in the first place, P.P.E. will always remain an important secondary line of defense.

*For further information and reprints:*

Columbia University  
WOMEN'S OCCUPATIONAL HEALTH  
RESOURCE CENTER  
School of Public Health  
60 Haven Avenue, B-1  
New York, New York 10032  
Telephone: (212) 694-3737



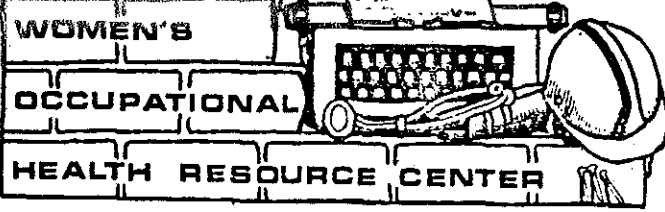
School of Public Health, Columbia University  
21 Audubon Avenue, Fl. 3, New York, N.Y. 10032

# PERSONAL PROTECTIVE EQUIPMENT

## PLEASE NOTE

THE WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER HAS NOT EVALUATED THIS EQUIPMENT AND THIS INFORMATION DOES NOT CONSTITUTE AN ENDORSEMENT OF THE EQUIPMENT OR THE MANUFACTURER.

February 1, 1981



**WOMEN'S  
OCCUPATIONAL  
HEALTH RESOURCE CENTER**

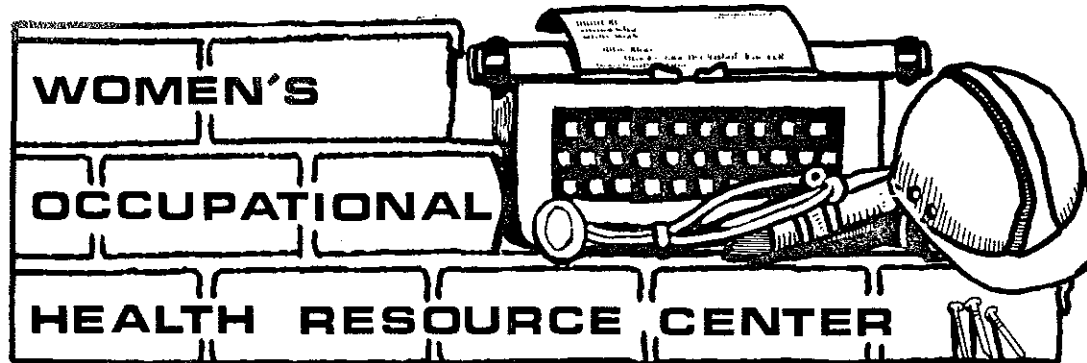
PLEASE NOTE

THE WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER HAS NOT EVALUATED THIS EQUIPMENT AND THIS INFORMATION DOES NOT CONSTITUTE AN ENDORSEMENT OF THE EQUIPMENT OR THE MANUFACTURER.

**Product**                      **Company** (corresponding names & addresses attached)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
APRONS			XS		X						X		X		X	X			
BELTS & SAFETY CLOTHING					XW S		XS	X	X		XS	X	XS	X	X				X
DOSIMETERS/X-RAY MONITORS						X													
EAR PROTECTION		X		X				X			X		X	X	X		X		X
FACE SHIELDS					X			X			X		X	X	X		X	X	
FIRE FIGHTING SUITS										X							X		
GAS MASKS	X									X									
GLOVES			XS		XS		XW			X	XW	XS	X	X	X	X			X
GOGGLES		X					X	X			X	X	X	X	X			X	X
HELMETS/HOODS		X			X			X				X		X	X				X
LAB CLOTHING												XW S							
OXYGEN SYSTEMS					X														
RESPIRATORS																			
SAFETY BELTS/HARNESSES	X	X			XS		X	X		X	X	X	X	X	XS		X		
SAFETY BOOKS					X														
SAFETY GLASSES												X							
SAFETY TOOLS		X					XW	X			X	X	X	X			X		X
SHOES/FOOTWEAR					X		X				X			X					
SLEEVES							XW			X			X		XS			XW	
																X			

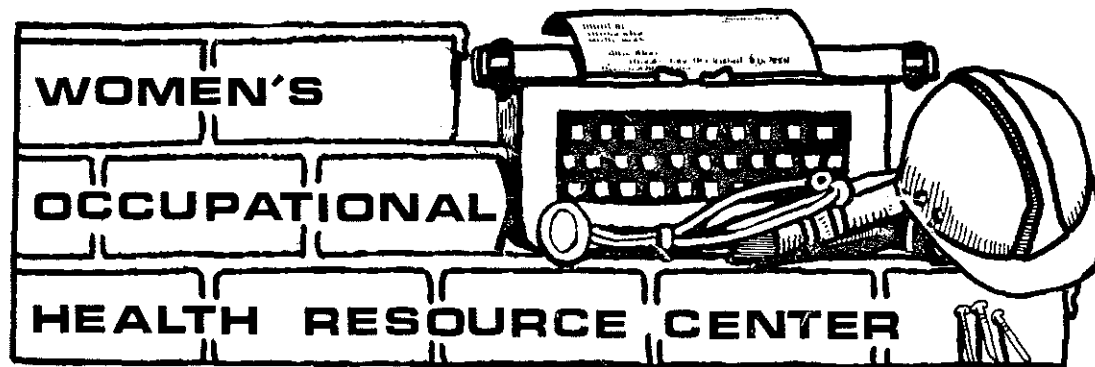
X= company carries  
S= small men's sizes  
W= women's sizes



NOTE: This list of companies supplying safety equipment does not constitute an endorsement by the Women's Occupational Health Resource Center. We have not yet evaluated the equipment. The companies carry small sizes but they are not designed specifically for women.

SAFETY EQUIPMENT SUPPLIERS

- |  |   |
|--|---|
| <p>1. AAA Emergency Supplies<br/>637 N. Broadway<br/>White Plains, NY 10603</p> <p>2. American Optical Corporation<br/>Safety Products Division<br/>Southbridge, MA 01550</p> <p>3. American Working Women's Supply Co.*<br/>P.O.Box 100<br/>Deer Park, NY 11729<br/>(gloves &amp; aprons)</p> <p>4. Bilsom International, Inc.<br/>11800 Sunrise Valley Dr.<br/>Reston, VA 22091<br/>(earplugs)</p> <p>5. Direct Safety Company<br/>6005 Martway<br/>P.O.Box 2994<br/>Shawnee Mission, KS 66201<br/>800-255-4416<br/>800-255-4550<br/>(913) 432-8770 (Kansas - collect)</p> <p>6. Dosimeter Corp. of America<br/>P.O.Box 42377<br/>Cincinnati, OH 45242<br/>(513) 793-6051</p> <p>7. Eastco Industrial Safety Corp.<br/>26-15 123 St.<br/>Flushing, NY 11354<br/>(212) 762-2600</p> | <p>8. Eastern Safety Equipment Co., Inc.<br/>45-17 Pearson St.<br/>Long Island City, NY 11101<br/>(212) 392-4100</p> <p>9. East Wind Industries Inc.<br/>200 Elm St.<br/>Trenton, NJ 08611<br/>(609)393-2060</p> <p>10. Globe Coats<br/>Pittsfield, NH 03263<br/>(603)435-8323</p> <p>11. Interex Corporation<br/>3 Strathmore Rd.<br/>Natick, MA 01760<br/>(617) 237-6650<br/>800-225-5910</p> <p>12. Lab Safety Supply Co.<br/>P.O.Box 1363<br/>Plant Location 10 S. Locust<br/>Janesville, WI 53545<br/>800-356-0783<br/>(608)754-2345 (from Alaska,<br/>Hawaii, and Wisconsin)</p> <p>13. Mine Safety Appliances Corp.<br/>1100 Globe Ave.<br/>Mountainside, NJ 07092<br/>(212)267-6997</p> |
|--|---|

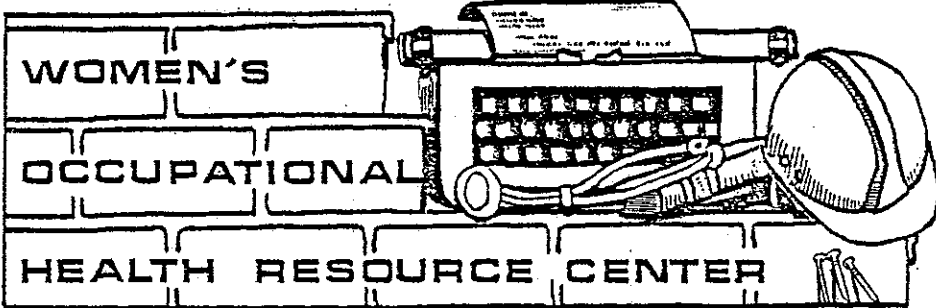


12

- 2 -

14. Pulsoman Safety Equipment Corp.  
30-48 Linden Place  
Flushing, NY 11354  
(212)939-3200
15. Scott Aviation  
(A Division of A-T-O, Inc.)  
225 Erie Street  
Lancaster, NY 14086
16. Surety Rubber Company  
Box 97  
611 N. High St.  
Carrollton, OH 44615  
(216)627-2166
17. United States Safety Service Co.  
1535 Walnut St.  
P.O.Box 1237  
Kansas City, MO 64141  
(816)842-8500
18. Weather-Rite, Inc.  
125 Enterprise Ave.  
Secaucus, NJ 07094  
(201)348-0400
19. Willson Products Co.  
24 Harbor Park Drive  
Port Washington, NY 11050  
(516)621-8800  
Willson Products (Mfr.)  
(215)376-6161

\*The WOHRC is presently conducting a survey of 360 companies to update our information on which companies manufacture and distribute personal protective equipment and tools specifically for women workers. This updated information will be available by late spring or early summer of 1981.



American Health Foundation  
 320 E. 43rd Street  
 New York, NY 10017  
 (212) 953-1900

Executive Director:  
 Jeanne M. Stellman, Ph.D.

FACTSHEET: Clerical Workers  
 Number of women employed: 10 million  
 % of all workers who are women: 80%  
 Almost one third of all employed women are clerical workers.

AMERICAN HEALTH FOUNDATION  
 320 E. 43rd Street  
 New York, New York 10017

POTENTIAL HAZARDS OF OFFICE AND CLERICAL WORK

The exact nature and extent of office hazards are not known. They will, of course, vary from office to office. While office work is far less hazardous than many other kinds of work, there still is no reason for any health risk to be present. The control of adverse office conditions can usually be readily accomplished.

HAZARD	SOURCES AND EXPLANATIONS
Excessive sitting	Improperly designed chairs can lead to backache; can aggravate hemorrhoids, varicose veins, and other conditions relating to the circulation of blood.
Fatigue, muscular and mental	Boredom as well as intense concentration can be fatiguing. Eyestrain from insufficient illumination or glare as well as muscle strain can also contribute.
Noise	Noise can be annoying and/or harmful. High levels, like those of keypunches and computers, can adversely affect hearing, while low levels may be stressful and interfere with communication.
Muscle strain	"Writer's cramp" from overexertion of small hand muscles may arise. Typists and keypunch operators may strain tendons of wrist (tenosynovitis).

AIR CONTAMINANTS

Ozone	Many copying machines and some switchboards may generate this toxic gas, which is a form of oxygen. Characterized by a sweetish smell, it can lead to irritation of eyes, nose, and throat. Exposure should be minimized, and exhaust vents installed near machines.
Spores, dusts, and asbestos	Rarely, insulation in air shafts may become exposed, leading to the spread of cancer-causing asbestos. This should be immediately eliminated. Improperly cleaned and maintained air conditioners can harbor and spread spores, which can produce allergic responses in susceptible individuals.
Benzene and toluene	These contaminants are found in rubber cement and some "cleaners." Contents should be checked. Benzene is associated with various blood diseases, and toluene can cause a drunken state, which increases the risk of accidents.
Methanol and ammonia	Used in many duplicating-machine solvents, these substances can be very irritating to the eyes, nose, and throat.
Organic solvents (such as trichloroethylene)	May be found in various stencil machines, "erasing" compounds, and other office products. Contents should be checked and can be identified for toxicity by reference to books listed in the Bibliography.