Share the air: small business and the Clean Air Act. [Supplement, Vol. 18, No. 5] [October 1994]

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Small Business and the Clean Air Act

ROBERT QUEEN

Even the most basic of human needs — bread — can affect the air we breathe. The fermenting yeast that makes dough rise produces alcohol fumes, which can contribute to the formation of ozone.

Small and savvy

Clean air is coming to Wisconsin in a small way that promises big dividends.

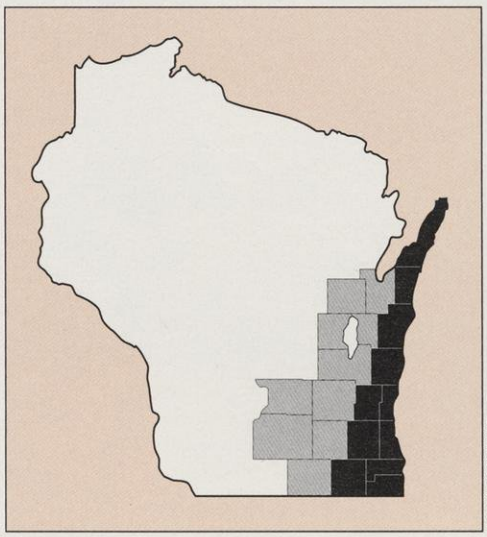
In a nine-county area along the shore of Lake Michigan, some 850 service stations are installing special systems at the pump to capture harmful gasoline vapors before they escape into the air. Dry cleaners are reevaluating spot removal with the environment in mind. Even bakeries are trapping the alcohol fumes produced by fermenting yeasts to prevent ozone.

What's going on? When air pollution stubbornly refused to drift away despite the best efforts of power plants, steel mills and other large industries to control emissions, the U.S. Congress decided it was time to sweat the small stuff.

The 1990 amendments to the Clean Air Act recognize that small businesses and individuals contribute to air pollution. New air quality requirements mean auto body shops, copy and print shops, graphic arts shops and other small concerns will be taking a closer look at the way they do business and handle waste.

The steps small businesses take to prevent air pollution add up to big results. In this special section, you'll meet some small business innovators who use new technologies to protect the air we share. You'll learn about the resources and support available for small businesses that must comply with the Clean Air Act. And you'll discover what you can do as an individual to prevent air pollution.

(below) Without careful monitoring and control, the volatile chemicals used in dry cleaning can escape into the air. (left) The dark area on the map shows where ozone is most troublesome; the shaded area encompasses a 21-county region where ozone studies are being conducted. The Clean Air Act affects all of Wisconsin.



JEANNE GOMOLL

A spotless reputation

How one dry cleaner uses innovative pollution control methods to keep his customers happy, his employees healthy and the air much fresher than it used to be.

Sara Burr

In 1986 Inez and David Baskerville purchased the family dry cleaning business that Dave's dad founded in 1969. Today, Fabricare of Waukesha has five shops and 40 employees in Waukesha County. It operates in a more stringent regulatory environment in 1994 than it did in 1969. Technology innovations help Fabricare meet air quality guidelines stemming from the 1990 federal Clean Air Act. Fabricare has:

- installed a refrigeration condenser to cool solvents and reduce emissions of VOCs.
- employees monitor the presence of perchloroethylene ("perc") with a hand meter that gives a heads up on leakage along the "perc" line when dry cleaning equipment is operating. Perchloroethylene is a solvent widely used in dry cleaning that has been identified by the U.S. Environmental Protection Agency (EPA) as a possible carcinogen.
- employees wear air monitoring "badges" to test internal air quality during the work shift. Baskerville has instituted a bi-monthly badge test program that identifies when employees should take measures to avoid prolonged exposure to "perc."

Today Fabricare uses evaporators to dispose of wastewater containing small amounts of dry cleaning solvents. In the past, the company disposed of the wastewater by storing it in barrels that a vendor carted away. The new equipment reduces outside dependence on vendors, is easier to manage and is environmentally safer. Installing evaporators was a smart economic move for Fabricare: Each $2,000 unit has a 10-year life span, yet costs are recouped for purchase and installation within two years.

Like many well-managed cleaning operations, Fabricare has installed dry cleaning machines that require less "perc" to do the job. This type of equipment reduces air emissions, waste and employee exposure to "perc."

Fabricare of Waukesha complies with the requirements of the Clean Air Act by reporting annual perchloroethylene purchases to the DNR and the EPA. Staff perform weekly monitoring, leak detection and repair requirements.

Baskerville has taken an active interest in Wisconsin's Small Business Assistance Program. He finds the program's brochures, newsletter and participation in industry trade shows very helpful. He has volunteered his time to help the program by reviewing DNR publications, ensuring they are easy for dry cleaning owners to understand.

He considers the Clean Air Act to be a reasonable environmental regulation. The requirements do not pose major burdens to his business, and they benefit his customers and his employees by limiting the amount of "perc" exposure.

According to Baskerville, the dry cleaning industry as a whole is "concerned about the environment and deserves a better shake for its effort to prevent contamination."

As an entrepreneur striving to succeed in a competitive market, David Baskerville goes the extra mile to protect the environment, his employees and his customers.

DNR environmental educator Sara Burr specializes in air quality issues from her office in Madison.

WHAT ARE VOCs?

The acronym stands for **V**olatile **O**rganic **C**ompounds. Gasoline, dry cleaning fluids, industrial solvents, even nail polish and house paint contain compounds derived from petroleum. These compounds produce hazardous vapors. On hot, sunny days, the vapors react with nitrogen oxides (produced by burning fuel) to create smog. Many VOCs are carcinogens, substances that can cause cancer.

JEAN B. MEYER

Measuring "perc" with a hand meter.

JEAN B. MEYER

Alternatives for alternators

Three Wisconsin businesses get together and find a better, cleaner way to manufacture motorcycle parts.

Sara Burr

In pursuit of clean air and a crisp bottom line, several Wisconsin companies are creating new markets for clean air technology.

Harley-Davidson, the Wisconsin motorcycle manufacturer, wanted to find a way to produce an engine part called an alternator stator without emitting any VOCs. Harley turned to Trison Machinery, Ltd., a small Wauwatosa manufacturer, for help.

ROBERT QUEEN

Three companies on a mission to cut emissions: Trison, Copps and Harley-Davidson.

SHARE THE AIR

The monarch butterfly, a symbol of natural grace and beauty, serves as a reminder that the air is something we share — with each other, and with all life on Earth.

Monarch caterpillars feed on milkweed, which can be damaged by minute concentrations of ozone. When pollution destroys or alters habitat, we lose species; when we lose species, our world becomes something less than what it was. Monarchs and milkweeds are witnesses to our efforts to "share the air."

Trison, founded by Fred and Lois Roloff with their three sons, designs, builds, installs and tests manufacturing systems for the production of electric motors and transformers. These systems, or "work cells," are fully automated pieces of equipment. A series of manufacturing processes can take place inside a single work cell.

Part of the process of making an alternator stator involves winding copper wire around a frame, impregnating the piece with a resin, then heating the piece to bond the wire to the frame. When heated, the resin gives off VOCs.

Trison consulted with Copps Industries, Inc., of Mequon about the VOC problem.

Copps then developed a heat-activated epoxy which, when cured, emits only 0.001 grams of VOCs per pound of resin — a very small amount.

Trison used Copps' "zero VOCs" epoxy resin in the work cell it designed for Harley-Davidson. The work cell functions without the high VOC emissions typically associated with the manufacture of alternator stators. It is more energy efficient, cures the varnished windings rapidly, and produces a better quality alternator stator.

Innovation like this is a classic example of entrepreneurship. Two small local firms join together to find solutions for a major customer, and in the process find that they have created a new market opportunity for themselves. Today, Trison and Copps are on the leading edge of clean air technology —

ROBERT QUEEN

Riding the wind: Innovations in manufacturing have made this motorcycle a cleaner machine.

UW PHOTO MEDIA

The alternator stator.

a market that's expanding not only in southeast Wisconsin, but across the nation and around the world.

The economic importance of that growing market was underscored at the First North American Conference and Exhibition on Emerging Clean Air Technologies and Business Opportunities, held in Toronto in the fall of 1994. The conference highlighted the world's largest clean air technology markets including Canada, the United States and Mexico. The North American industry has $15 billion in sales and is projected to grow at an annual rate of at least five percent. Markets are opening in Eastern Europe, the Pacific Rim and Latin America. According to the conference organizers, global growth of clean air markets is expected to produce an industry exceeding $50 billion by the year 2000.

Wisconsin is uniquely positioned to claim an early share of this market, thanks to innovative companies like Trison, Copps and Harley-Davidson. In the future, more Wisconsin entrepreneurs in search of efficiency on behalf of the environment will find fertile ground for cleaning the air with fresh ideas, new products and improved manufacturing processes.

For more information about clean air technologies, contact Dr. Sara Burr, Bureau of Information and Education, Department of Natural Resources, P.O. Box 7921, Madison, WI 53707; fax 608/264-6293; e-mail burrs@dnr-mai.dnr.wisc.gov.

A helping hand for small business

With assistance from a new state program, complying with air rules is a breeze.

Robert Baggot

Two issues of concern surfaced when the Department of Natural Resources began developing a grant program for gas stations to install vapor recovery systems. The first was the cost of the vapor recovery technology; the second, the cash flow problems retailers making the investment would face. Staff from Wisconsin's Small Business Assistance Program brought together regulators and representatives of the gasoline retailers to discuss options.

As a result of those discussions, the grant program was designed to provide advance funding rather than reimbursement. Small gasoline stations find the program supports their cash flow rather than draining it. Now it's easier for them to make a smooth transition to a cleaner technology.

Wisconsin's Small Business Assistance Program coordinates the resources of state agencies and the University of Wisconsin to help firms that employ 100 or fewer people comply successfully with the Clean Air Act. The program offers support to small businesses as they adopt new technologies and business practices to bring their operations into compliance.

ROBERT QUEEN

Recovering gasoline vapors at the pump.

DNR's Vapor Recovery Grant Program is an example of how government can better respond to small businesses. Some simple administrative changes to a government program created a friendly, helpful service.

The new clean air regulations affect a variety of industries dominated by small companies. Wisconsin's 650 dry cleaners must find ways to comply with the rules. In the nine-county region along Lake Michigan where air pollution problems are the worst in the state, about 500 auto body refinishers and approximately 100 small lithographic printers must come to grips with the goals of the Clean Air Act.

The Department of Natural Resources works with advisory committees from these industries to develop clean air rules for small companies. As rules are adopted to implement the Clean Air Act, businesses will face new responsibilities, which may include special record keeping and monitoring requirements, using alternative materials in processes, making capital investments in equipment, or completing training and certification requirements.

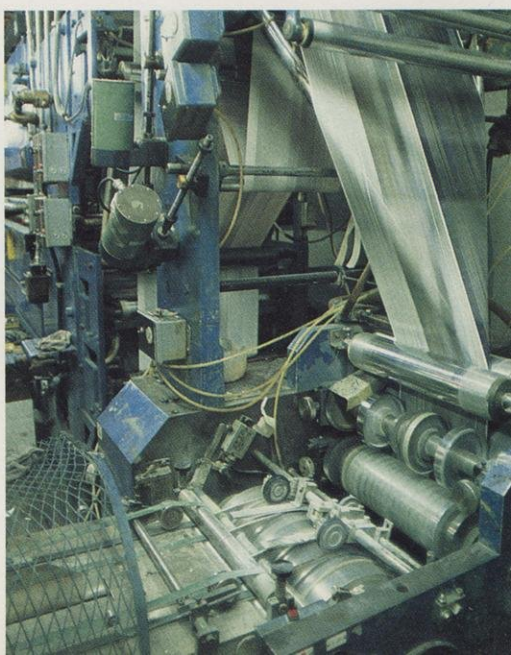
The Wisconsin Legislature has created a Small Business Environmental Council to advise the state's Small Business Assistance Program on how to improve its services. The council's nine members represent small businesses, the general public, the Department of Natural Resources and the Department of Development.

Based in Madison, Robert Baggot is the Wisconsin Department of Development's small business liaison.

NEED A HAND?

For more information about the Small Business Assistance Program, contact Robert Baggot, Wisconsin Department of Development at 608/266-8524 or toll-free at 1-800-HELP-BUSiness.

Printers and copy shops must meet Clean Air Act standards.



JEAN B. MEYER

Heat and sunlight cause VOCs and other pollutants to react with nitrogen oxides, emitted by vehicles, factories and utilities. The result: Smog.

Good Ozone, Bad Ozone

The difference between protection and pollution

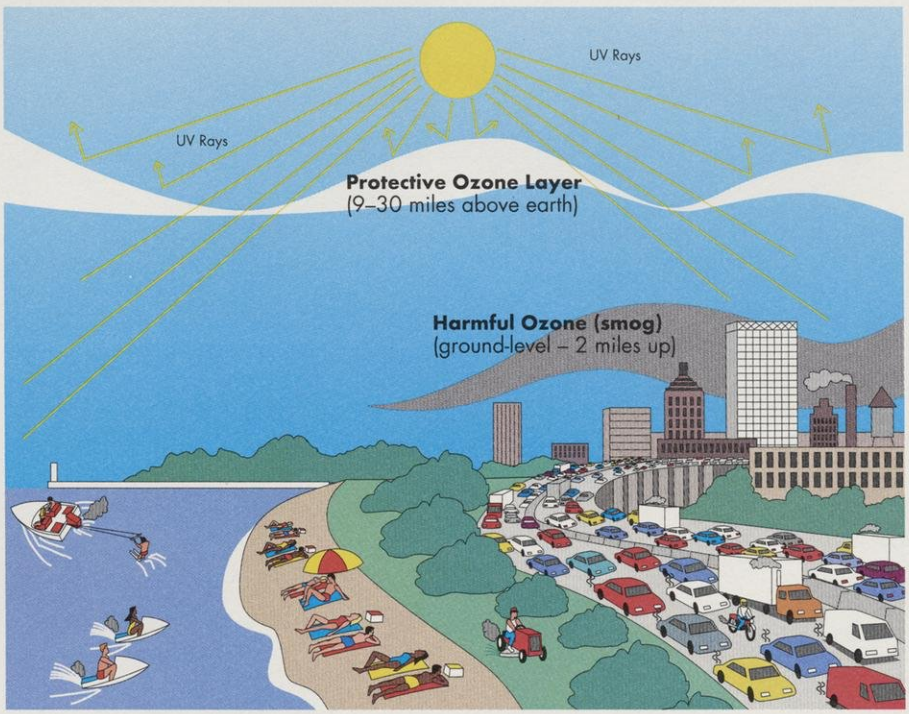
What is ozone?

Ozone is a gas consisting of three oxygen atoms. There are two kinds of ozone: Stratospheric ozone, and ground-level ozone. The chemical make-up is the same. But where the ozone is located makes a big difference.

Stratospheric ozone blankets the upper atmosphere about 9 to 30 miles above the Earth's surface.

This is "good ozone." It plays a vital role by blocking the sun's damaging ultraviolet rays and helping to stop heat from escaping the Earth. Without "good ozone," life as we know it would not exist.

Closer to the ground (and up to about two miles above the Earth's surface) ozone is no longer benign. *Ground-level ozone* creates smog, pollutes cities, and harms both human health and the environment. This is "bad ozone."



JOHN CRONIN

Losing the good stuff

A depleted ozone layer means that more ultraviolet (UV) radiation will reach the Earth. Prolonged exposure to UV rays can damage eyes and cause skin cancer.

UV rays harm phytoplankton, the tiny plant cells that serve as the base of the ocean's food chain. If phytoplankton decreases, so will marine life such as fish, dolphins, whales and seals.

ROBERT QUEEN

What depletes the good ozone layer?

Human-made chemicals such as chlorofluorocarbons (CFCs), methyl chloroform and methyl bromide are a major cause of upper ozone layer losses.

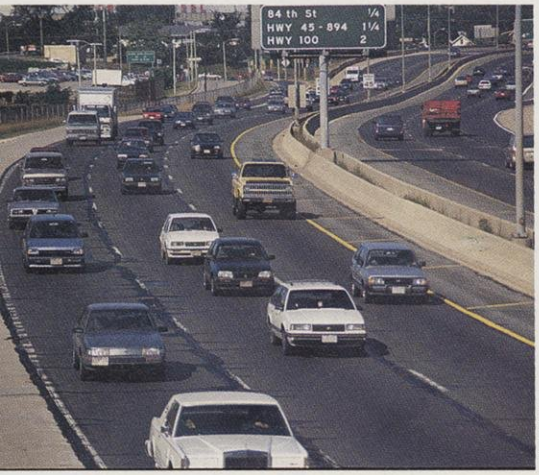
CFCs and other chemicals are found in a wide range of sources, including:

- refrigerators and freezers
- room and vehicle air conditioners
- industrial cleaning processes

You can make a difference

Take these actions to help clear the air:

- Don't buy products that contain ozone-depleting chemicals (the label



DNR PHOTO

To cut back on air pollution...

will tell you if they do).

- Make sure your car air conditioner is properly maintained and repaired.
- Use insulation that doesn't have CFCs.
- Encourage businesses to be innovative in finding replacements for CFCs and other ozone-depleting chemicals.

Keep the sun's rays at bay

Protect yourself and your family:

- Limit exposure to the mid-day sun.
- Use sunblocking lotions.
- Wear sunglasses treated to block ultraviolet radiation.

Too much of the bad stuff

Ground-level ozone:

- irritates eyes, noses and throats
- scars lung tissue
- decreases lung capacity

The elderly, children, those with lung or heart ailments, and healthy adults who exercise outdoors on high ozone days are especially sensitive to ozone pollution.

Ground-level ozone injures trees, plants and crops, and causes rubber, fabrics and other materials to deteriorate.

How is bad ozone formed?

Ground-level ozone results when nitrogen oxides and volatile organic compounds (VOCs) react in sunlight on hot days.

Nitrogen oxides are emitted mostly by utilities, factories and motor vehicles. VOCs come from motor vehicles, industrial solvents and petroleum-based products such as paint and charcoal lighter fluid.

JEAN B. MEYER

...employers can encourage employees to bike, walk, use public transportation or carpool.

You can make a difference

Here are some things you can do every day to help clear the smog:

- Reduce automobile travel by combining errands and consolidating several trips.
- Carpool, use public transit, walk or bike.
- Tune your car and inflate tires properly.
- Use water-based paints.
- Use a push lawn mower or hand saw, if you are able. Small gas-powered engines on lawn mowers, other yard tools and boat motors do not yet have pollution control devices.
- Don't burn yard waste or trash.

For more information...

On good ozone, call:
Lance Green, DNR Air Management Bureau, 608/264-6049.

On harmful ozone, call:
Larry Bruss, DNR Air Management Bureau, 608/267-7543.

On vehicles and air quality, call:
Barbara Kipp, WisDOT, 608/267-2904.

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