

2013

Green Strategies

Real World Concerns and Success Stories of Engine Builders and Suppliers

- Cleaning Techniques and Equipment
- Handling Shop Waste
- Efficient Shop Operations
- Recycling Scrap and Precious Metals

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Cleaning Techniques & Equipment

Moving toward greener cleaning methods

It may seem that there's nothing natural about cleaning an engine. Even after the couple of hours of cleaning time, the engine might be cleaner than the tech working on it – but the engine still needs cleaned (and so does the cleaning crew from time to time).

We are long from the days of chemical soaking followed by a dose of elbow grease. There's Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) standards to follow.

Also, the arrivals of new metal alloys react adversely to the caustic chemicals and the extreme heat of a thermal blast oven.

"The reason some are moving away from the blast oven is because many parts are being made out of lighter materials like aluminum," said Delia Downes, product manager for ARMEX, a manufacturer of soda-based media. She says aluminum is sensitive to harsh cleaning processes and harder grit abrasives, if there's any abrasive blasting.

In addition, what should shops do with the excess wastewater and solvent? The answer should not involve a sink and/or drain.

"Engine guys use a lot of parts cleaners in the shop," said Buddy Judy, head of Safety Kleen's motorsports program. "So whatever you are doing, whether you have water

based parts cleaner or petroleum solvent based, you should make sure that material is getting recycled."

Some shops enlist various recycling methods in their engine cleaning like the use of a basic rinse tank that simply recirculates water for reuse. Other shops – when dealing with more older engine parts – learn it's wise to avoid the hassle altogether.

"When we get vintage vehicles, instead of doing it in-house, we rely on chemical stripping companies to take care of the cleaning," said Frank Honsowetz, Ed Pink Racing in Van Nuys, CA. "That way, we don't have to deal with issues of cleaning engines that haven't been taken apart in a while."

As for the average engine, Honsowetz's shop uses different kinds of cleaning tanks. One of these is from AXE Equipment, a manufacturer of agitating hot tanks with capacities from 150 to 300 gallons.

Other shops prefer to use a combination of thermal and wet cleaning to get the job done. Mike Eighmy, of Precision Automotive Diesel in Rockford, IL, has in place a long-time system for his shop's cleaning.

"For a lot of our cleaning needs, we do use an aqueous cleaner, as well as a couple of jet washers in a closed system," he said. "We also have a bake oven and shot blast

system; a three-stage system that we use for some of our heavier cleaning."

Thermal cleaning can offer many advantages as well as disadvantages, Eighmy says. Once in a thermal oven, an engine's oil galleries are thoroughly cleaned out as the rust and scaling turns to ash. But the ash can still contain harmful particles. Soda blasting can offer another cleaning alternative.

Soda blasting is usually a closed system that involves a compressed air stream that literally blasts contamination via a nozzle spray. After a session under a soda blasting cabinet, the engine part offers a new-look and feel.

Downes notes that the change from cast iron to lighter materials has led most shops to move away from thermal oven cleaning and toward processes such as soda blasting to lessen the chance of damaging a part during the cleaning process.

Downes points out that soda blasting is water-soluble. It flushes out the critical areas, which is key, but it is also more environmentally friendly when it comes time to dispose of the waste.

Eighmy said although his shop has utilized heat cleaning for quite some time, they've leaned more toward aqueous cleaning because of the efficiency.

"You just throw the parts in there



Newer, "greener" cleaning technologies have become a mainstay in many shops that once relied on the old tried and true sink on a drum with toxic solvent-based cleaners.

one-off jobs," he said. "We don't get 50 small block heads to do anymore. We might do a small block Chevrolet and then do a four-cylinder Mitsubishi. It'll go from a four-cylinder Pace tractor head to a 5.9L Cummins back to a CAT D9, and a Briggs & Stratton."

Yatchyshyn said cleaning methods actually impact his production, having a significant effect on

his bottom line.

"Independent shops don't have the luxury of what to work on. We don't have a niche market anymore. The everyday stuff is gone," he said. "We have to clean an engine part, work on it and have it go out the door. Pressure washers were the best choice for us."

In addition, Yatchyshyn keeps an eye on production. On average, most shops spend nearly 30 percent of labor hours cleaning when it comes to rebuilding the engine. Along with the spray washer, he is currently looking into a soda blaster cabinet.

"The biggest thing facing us now is the overhead cam cylinder heads that have oil passages with a blind hole or have a ball bearing driven in to seal them," Yatchyshyn said. "There is a lot time is involved to get them out and re-tap them for plugs."

He said by using the combination of two methods, the soda residue from the blast will dissolve from the pressure washer thus saving time for his workers to remain in the machining process. It remains the most prominent factor in relying on aqueous-based cleaning.

"I was able to dedicate at least another 10 man hours per week to production as opposed to cleaning," Yatchyshyn said. "Cleaning is your one biggest expense in your shop. It is tough to charge someone \$65 an hour to just clean."

He noted that today's equipment is a godsend from the older models that took hours to heat hundreds of gallons of water with an electric meter that jittered like a spinning top.

"Since we went to the pressure washer, we can throw a block in there and 15-20 minutes later, find it ready to come out," Yatchyshyn said. "And it is nice and hot. You rinse it with hot water over the rinse tank and blow it dry it, then it is ready to work on. The cleaning guys I had turned into production guys."

As shops are stretching their revenue streams, the technology continues to evolve allowing the environmental benefit to reach even further. Bioremediation, the process of using microorganisms to break down contaminants, has been a viable treatment since it was introduced in clean up efforts in the infamous 1989 Exxon Valdez oil spill across the Prince William Sound in Alaska.

"Bioremediation, an off shoot of water-based cleaning is where – in light duty applications – you can introduce microbes into a specifically formulated solution," Kucklick explained. "The microbes metabolize the oils and greases that you are removing from the parts and break them down into carbon dioxide and water. Over

and start it up," he said matter-of-factly. "If the water is hot and treated with the right kind of detergent, they clean very well under a high-pressure nozzle."

As the awareness of the environmental impact on the automotive aftermarket becomes more prevalent, many engines shops are realizing that going green can also make them some green.

"There are a few nice benefits. The main one is the return on investment, which is dependent on the chemistry that you are using," said Tom Kucklick, general manager of Graymills Corporation. "A lot of it is because the water supplied by you is 'free.' This helps make it less expensive than some petroleum-based cleaners."

Kucklick acknowledges that the petroleum-based cleaners work well, but their pricing can be a much less predictable expense as they are subject to the whims of the oil industry. "We see this more and more every day when we are at the pump," Kucklick said. "It is not as volatile as it is at the gas pump, but it is still a cost consideration."

Aqueous spray washers have proved to be more environmentally sound than the toxic volatile organic compound (VOC) solvent cleaning that has polluted the air as well as endangered workers. According the U.S. Environmental Protection Agency (EPA) today's aqueous cleaners contain less than five percent (50 grams per liter) of VOCs.

For Dean Yatchyshyn, owner of high-performance engine shop Cresap Automotive Machine in Cumberland, MD, it's a matter of dollars and cents. After doing the research on several burn ovens and ultrasonic cleaners, he found that aqueous-based cleaning was a more efficient choice for his shop – especially since he doesn't operate a one-size-fits-all type of service.

"To be efficient, parts would need to be packed pretty full when you put them in, and we get so many



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"Cotton naturally holds on to oil. The advantage to the cotton absorbents is that they are 100 percent incinerable and produce little ash," said John Tornese of Oil-Dri. "A lot of automotive industries are paying much more to dispose of these products than it actually costs. Now, you have this thing that is soaked in oil – should you pay a bunch of money to get rid of it or just burn it?"

Tornese contends that since the industry wants to develop an environmental-clean mantra, then their consumers will demand overall clean when they enter their shop's doors. Keeping oil off the floor and out of the way of your customers is a great way to be green AND look green, as well.

"Over the years the automotive industry has developed a new emphasis on a clean repair shop. Customers who buy a Lexus have come to expect it being "Lexus" like in the service area," Tornese said. "Dealers and independents take pride now and want their customers to see the working conditions – It gives an aura of workmanship and quality. People hesitate to go to the old stereotype of a greasy, dirty, grimy garage." ■

time, you virtually eliminate your waste stream."

New green technologies are not only enhancing the parts cleaners, but the shop environment in general. Oil-Dri Corporation, a manufacturer of absorbent pads for automotive shops, uses green technology in its products. Materials like recycled cotton fibers and cellulose (paper) are ground and converted into absorbent

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Recycling Scrap and Precious Metals

The cost of scrap has gone up and is more advantageous to recycle

Engine rebuilding, arguably the truest form of recycling, restores core durability and is part of the 3 Rs: Reduce, Reuse and Recycle. In fact, the very definition of the word "recycle" could be interchanged with "engine rebuilding." Recycling means to reuse or make (a substance) available for reuse for biological activities through natural processes of biochemical degradation or modification or to return to an original condition so that operation can begin again.

During research by the University of Michigan, a remanufactured mid-sized gas engine went up against an OEM model to see which one saved the most energy and polluted the least.

The findings showed the rebuilt engine produced fewer harmful toxins such as carbon dioxide, carbon monoxide, sulfur oxide and nitrogen oxide while exerting the least amount of energy.

The concept of recycling has become so ingrained in the fabric of business, an almost universal amount of auto repair shops (96 percent) say they recycle scrap metal from automotive components, according to the Automotive Aftermarket Industry Association (AAIA).

In the Institute of Scrap Recycling Industries (ISRI) yearbook study, it cites that "scrap recycling offers real sustainable solutions for balancing economic growth and environmental stewardship."

According to its findings, 74 million metric tons of ferrous scrap, the raw material used for the production of new steel and cast iron products, was processed by the scrap recycling industry in 2011 – more than 55 percent of the volume of all domestically processed scrap.

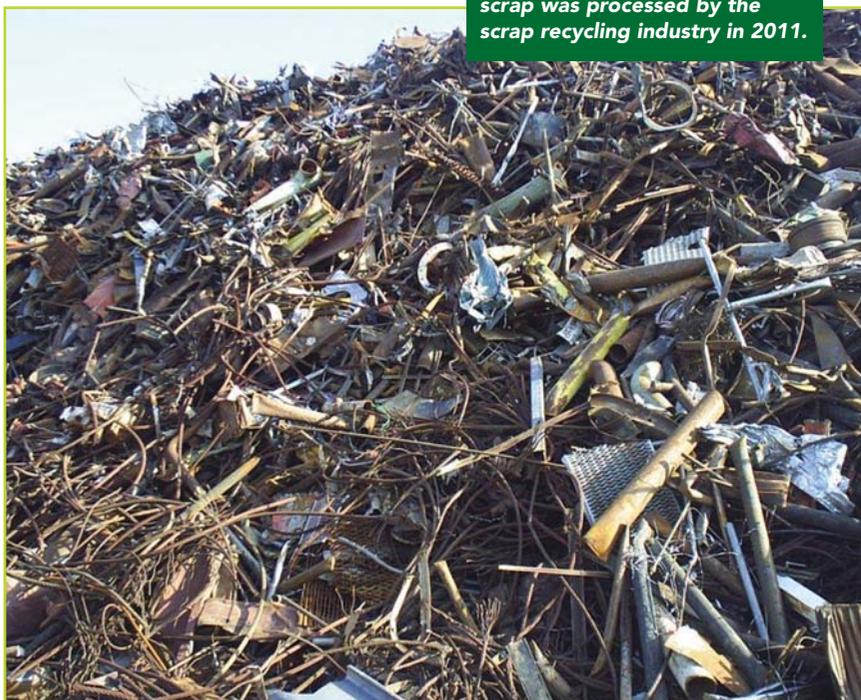
In addition, nearly two out of every three pounds of steel in the U.S. is made from ferrous scrap. Not only does the action save energy, said the study, but by conserving materials such as iron ore, coal and limestone; it coincides with market indicators that provide monetary in-

centives for consumers to recycle.

"Metals are definitely worth something, obviously. The cost of scrap has gone up and it is more advantageous to recycle," said Dean Yatchyshyn, owner of Cresap Automotive Machine in Cumberland, MD. "It doesn't add a lot to revenue stream but you have to do everything you can to get your bottom line healthy."

Although it won't make your shop a gold mine overnight, scrap metal is big business. In 2011, more than 135

74 million metric tons of ferrous scrap was processed by the scrap recycling industry in 2011.



million metric of scrap metal along with paper, plastic, glass, textiles, rubber and electronics were recycled to the tune of around of \$100 billion in the U.S. alone.

Forget gold and silver, those extra parts laying in the bin hold an array of cast iron and steel and non-ferrous materials like copper and brass that'll have recyclers knocking on your door.

For instance, aluminum is one of the most recycled non-ferrous materials in the world. The recycling rate for aluminum cans reached more than 65 percent and is projected to hit 75 percent by 2015.

Businesses like Olston's Auto Recyclers, that sell new and recycled domestic and import auto parts, deal mostly with used engines and transmissions. But to the extent of their scrap process, they see the value in the aluminum.

"Twenty years ago, we weren't as concerned about the \$30 worth of aluminum that goes out of that used transmission. Now, the margins have tightened," said Paul Carter, manager of the Lincoln, NE facility. "It is a bigger focus. I have delivery drivers who drop off and pick up transmissions on their route, so we can get that \$30 back in here."

Carter, a 40-year veteran of the recycling industry, noted the non-ferrous metals are so much in demand that his company is forced to pay attention.

"Years ago, we didn't bother with the copper, but when we go through the complete crush process, we got a crew of guys that'll stand there as we're putting the cars through the crusher pulling out the wiring harness," he said. "Those are things we didn't do years ago. The process has gotten more detailed and much more labor intensive. We are trying to squeeze the last drops out of every lemon."

The recycling of life that is engine building should be nothing new for the average rebuilder but for some time it was a surprising concept, said Buddy Judy of Safety Kleen.

"For many years, they didn't think about it. But the scrap guys come to



AAEQ was honored in 2010 for its support of the "Don't Trash Nevada" program and for operating an environmentally responsible scrap-metal recycling center.

the engine shops because there's always a lot scrap metal, lots of iron, steel, and aluminum and it keeps them fairly busy," said Judy who runs the company's motorsports program and deals with many NHRA and NASCAR racing teams across North America.

"A lot of NASCAR guys have their own in-house, high-tech CNC-milling/cutting equipment and a fair amount of metals are picked up for recycling," he said.

Other shops like Ed Pink Racing in Van Nuys, CA, that rebuilds engines for racing and high-end collector automobiles, also send their metals out for recycling and not just engine parts.

Manager Frank Honsowetz works with a vendor that arrives at his shop to personally collect any metal that he can get his hands on.

"We recycle a lot of metals and we have one guy who comes in and recycles everything from broken parts to our machine tools," he said. "We run our own machining center and we have a lot of clean aluminum. We have a little system where he takes it all: titanium, steel, anything."

As for the bigger players, facilities like AAEQ Manufacturers and Recyclers with divisions such as EngineQuest and A&A Midwest are thinking outside the box in terms of recycling.

The Las Vegas-based company teamed up with the Clark County (NV) Department of Air Quality and Environmental Management and various companies to create a lawn mower exchange program.

The goal was to have residents exchange their gas lawn mowers for a cordless electrical model that produced no emissions. Studies have shown that one gas-powered lawn mower after a year's use pollutes as much air as 40 automobiles driven within the same period.

The program proved to be an inspiring success as its inventory of electric mowers were depleted a few weeks after the program started.

As long as prices steadily increase for metals, the allure of recycling is not going away anytime soon for both engine shops and scrap yards. Kirby Andersen, owner of Andersen Wrecking Company in Kearney, NE, said the future is leaning toward more sophistication and precision as more equipment is designed to recover a higher percentage of recyclables out of waste material.

"In the past, some of that would end up in the landfill because the equipment could not separate that metal out of the interior," he said. "And with the new tools that are available on the Internet, we can look up a core value of a vehicle part and decide if we want to pull that caliper, steering gear or engine out and send it to a core supplier. It is exciting because it gives us an opportunity to get a little more out of that product instead of throwing it into the scrap pile."

For the shop owner, recycling can give an environmental and social boost to their business, but ultimately the monetary value is just as attractive.

"I'll be honest. I can't take credit for being green. It was more of a dollar and cent thing than it was environmental," Yatchyshyn said. "It made sense to get some money out of the scrap that you would throw in the dumpster. It works out well that it helps the environment, too." ■

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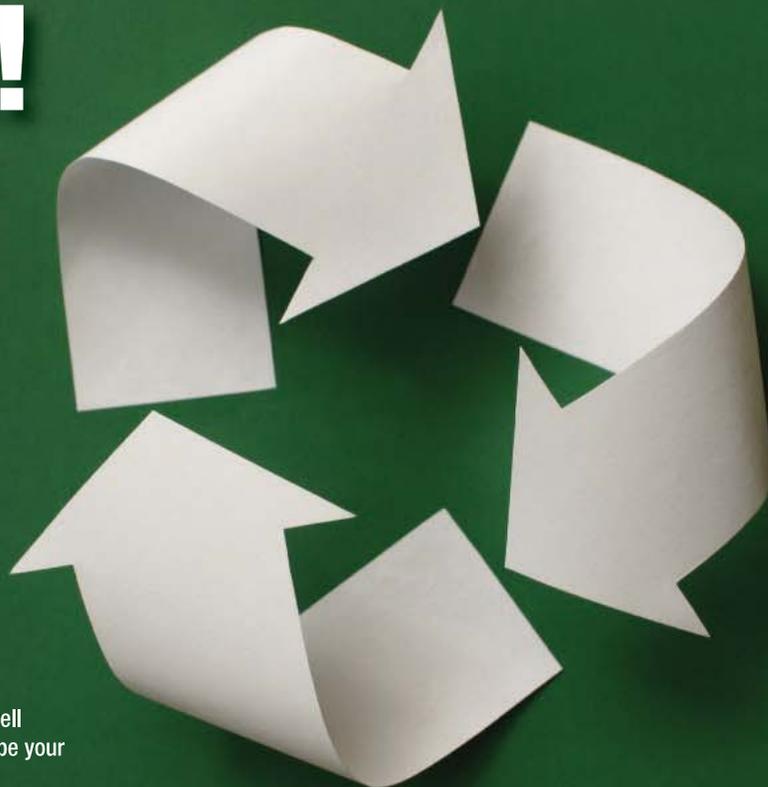
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Handling Shop Waste

Having an environmental management system in place will alleviate headaches and save your shop money in the long run



The amount of used oil and other hazardous solvents can pile up in a hurry when you're hustling through the day's engine work. Then you realize the space at the back of your shop is getting cluttered and your waste tank is filling up. It's time to take care of the waste. From the early days of automotive repair, shop owners and technicians have found creative ways to rid their garage of shop's leftovers.

"Fifty years ago, garage guys would soak the oil in some gas, scrub it and use it on the grass to kill the weeds," said Buddy Judy, marketing manager of Safety Kleen's Motorsports program. "Or they soaked a couple of logs in it to heat up the shop. Whatever they did with it, a lot of times it wasn't the healthiest thing for them or the environment."

And Judy would be correct. The hazardous waste that quietly lies in your garage contains harmful solvents including one of the most detrimental chemicals, Perchloroethylene. Better known as a basic dry cleaning chemical, its exposure is one of the leading causes of cancer and lung disease.

In addition, a little bit of oil waste goes a long, destructive way. From one simple oil change, the wasted amount that's dumped in a drain is enough to contaminate one million gallons of fresh water.

Knowing the dangers caused by such waste, the U.S. Congress

passed the Resource Conservation and Recovery Act (RCRA) in 1976. The act currently sets the standards for management of all waste and used oils.

In addition to using it as a helpful gardening solution, used oil has been a source for many a shop's waste heater. Dean Yatchyshyn, owner of high-performance engine shop Cresap Automotive Machine in Cumberland, MD, finds the method rewarding.

"We save the waste oil that comes out of our motors and we got a waste oil heater," he said. "We use that in the winter time to supplement our heating system to keep

costs down on that. Plus, you know, it's got to go somewhere."

If done right to the code of OSHA and EPA rules, having an energy efficient heater can rid your shop of its waste while serving a good use.

Most states require a permit to operate a waste oil heater and such regulations vary. Judy contends, for some, it might not be worth the hassle, plus there are other ways to handle a shop's excess.

"I know, for instance, in Mecklenburg County, NC, it is pretty hard to get a permit for guys to operate a waste heater. You are only allowed to burn your used oil," he said. "Think about how many gallons



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you'll burn in a day: Are you going to produce that many gallons over the course of the year? You may not have the volume. And to take in others' oil, you have to apply to get a special oil burner permit and that can be pretty hard to come by."

"(Waste heaters) can be a lot of hassle. And quite honestly, for the same money, most shops can throw some solar panels on the roof to get a lot faster heating and sell their used oil off," he noted.

Solar-powered radiant heating can be an alternative source in some climes. The apparatus uses the sun as the heating source. The electromagnetic wave energy travels at the speed of light until it hits an object that converts it to heat throughout the space. Other sources can also be used to power a radiant heating system.

"One thing we did in our facility seven years ago was to put in a radiant system," said Mike Eighmy of Precision Automotive Diesel in Rockford, IL. "It heats the concrete slab and is very efficient in our shop."

Eighmy also follows Judy's advice when it comes to handling his shop's waste. He enlisted a service from his local treatment facility that properly hauls and treats the wastewater and machine waste from his shop on a regular basis.

Businesses such as Judy's Safety Kleen and Enercon, another full-service environmental firm, provide disposal and recycling services that take the headache out of waste management. Like Eighmy, Yatchyshyn leaves the materials to a qualified entity.

"With hazardous materials, we use Enercon's disposal service for the waste we have," he said. "We buy our chemicals from them and they have an arrangement where they pick up the used chemicals and our waste water."

Yatchyshyn's shop also recycles its rinse water from the cleaning equipment. A rinse tank where chemicals are washed out moves the water back into the tank. A secondary rinse captures the rinse water, which is used for make-up water in the shop's

"If you have a 1,000-gallon tank, you have a commodity on your hands, and that material we would refine or use as fuel in a power plant"

spray washers.

"We are keeping the chemical costs down as well as the carbon footprint by re-using the water as much as we can," he said.

Frank Honsowetz of Ed Pink Racing in Van Nuys, CA, explains his 12,000-plus square-foot facility deals in 300-gallon large tanks of used motor oil and regular solvents frequently. In his state, efficiency regulation for oils and solvents is a way of life. "We are very careful of mixing those things," he said. "We also have a separate tank for wastewater."

For Honsowetz's shop and others in the Golden State, waste disposal is as common as breathing. Used oil comprises the highest volume of hazardous waste generated in California with approximately 100 million gallons being recycled in the state each year. The California Oil Recycling Enhancement Act of 2009 discourages the illegal disposal of used oil. Enforced by the state's department of Resources Recycling and Recovery (CalRecycle), the law requires oil manufacturers to pay CalRecycle a fee per gallon of lubricating oil sold in the state. CalRecycle then makes incentive payments to eligible

oil collection centers and programs.

"I think the whole practice is more established in California than other places," Honsowetz said. "Price is not exorbitant and it's easy to do. I don't consider it a burden. It's just a part of how we do business now."

Ed Pink Racing works with Safety Kleen to discard its waste. The used oil is recycled and through Safety Kleen's re-refining process, the oil returns to its original state.

"If you have a 1,000-gallon tank, you have a commodity on your hands, and that material we would refine or use as fuel in a power plant," Judy said. "Used oil is exactly that...used oil. Nothing else is in it."

"If a shop typically burns its used oil yet it has some brake or choke spray where they have been cleaning the engine blocks, they're not supposed to burn that," Judy continued. "So, it is not the greenest of things and most solvents don't burn efficiently."

Companies like Safety Kleen and Enercon own and operate several fuel blending facilities across North America. In Safety Kleen's case, the plants blend hazardous material such as oils and other solvents into an al-

Many shops are turning to professional environmental management companies to handle and remove hazardous waste.



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Shop Waste

ternative fuel source for cement kilns that are used for the pyroprocessing stage to manufacture Portland and other types of hydraulic cement. It provides kilns with a green alternative to coal, oil and other fossil fuels.

"It's better to have it recycled so companies can use that oil and make gasoline or commercial fuel out of it," Judy said. "Those options are better than doing it yourself."

But what about those shops that don't deal in those huge volumes of oil over the course of a year like Ed

Pink Racing or Cresap Automotive Machine? Judy says Safety Kleen works with more than 10,000 retailers that handle oil and waste disposal through a used oil recycling program via EPA and Earth911 initiative, Infinity Resources' recycling division.

The efforts of efficiently handling your hazardous waste can amount to significant costs. According to the Environmental Protection Agency, on average it would cost \$1,200 to ship a 55-gallon drum of hazardous mate-

rial and more than \$100 a month for containers, labels and time to manage shop waste. Using a professional service can save you many of these costs as well as the hassle and legal challenges of doing it yourself.

"We do a lot of recycling because we have a lot of stuff to get rid of, but it helps to have recycling companies work with us to recoup a little bit of costs," Honsowetz said. "We are encouraged to do that for the environment and for the bottom line." ■



A GOOD WASTE MANAGEMENT SYSTEM REQUIRES AUTOMOTIVE SHOPS TO:

- Identify all wastes generated: Determine which ones are hazardous waste
- Determine pounds of hazardous waste per month: Keep records
- Identify options for getting rid of waste including used oil
- Identify HW management standards
- Train staff on waste management
- Minimize waste/recycle

Source: Environmental Protection Agency

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Efficient Shop Operations

Going green means more than hugging trees; It stresses efficiency and cost savings

If you really think about it, the engine building/remanufacturing industry is the true essence of going green. After all, you're recycling:

1. A used product for further performance;
2. The solvents for other use; and
3. Your shop's revenue as you have to make more profit from fewer rebuilds.

"Most motors don't run well until the third rebuild. When the block is green, you typically don't get the best performance out of them," said Buddy Judy of Safety Kleen. "These things run then you take them back in, tear them apart and clean them up."

Judy runs Safety-Kleen's motor-sports program and has worked on environmental issues for many engine and auto racing shops in North America including NASCAR teams Joe Gibbs Racing, Kevin Harvick Inc. and Earnhardt Ganassi Racing.

In the past, shop owners have dealt with ever changing environmental and safety regulations around the garage space. An OSHA and EPA guide of regulation resembled a fluid puzzle rather than a helpful manual. But now, going green means more than hugging trees and learning to embrace the Toyota Prius. It's a multi-billion dollar initiative. What was once known as an alternative is now an accepted adjustment that stresses efficiency and cost savings.

"(Shop owners or managers) can call their local OSHA office to have them come out and do an inspec-

tion," Judy said. "OSHA also publishes a document in which it identifies the top 25 violations of the year."

Every year, OSHA conducts various inspections on auto shops across the country and serves thousands of citations from faulty wiring to lack of safety literature or training. The fees accompanying every error can easily reach into the tens of thousands of dollars. In some cases, each violation brings most smaller shop owners' checkbook to the brink.

"Right now in a shop like mine and others across the country, it is just enough for the straw to break the camel's back," said Dean Yatchyshyn, owner of high-performance engine shop Cresap Automotive Machine in Cumberland, MD. "There is a thin line to cover the bill and if you got some kind of violation, it could push a lot of shop owners over the edge, and make them say 'forget it' and put the 'Closed for Business' sign up."

Yatchyshyn and similar shop owners said the way to avoid such a headache is to simply get in front of the problem. When he opened his shop, Yatchyshyn reached out to OSHA for an initial inspection.

"I had them go around and inspect the place and they gave me a list of half of dozen items that could cause potential problems. I fixed them and haven't seen them in 25 years," he said. "It was a like a 'get-out-of-jail-free' card. I took positive steps to contact them so I didn't have to see them with problems five and six years down the road when they

could throw the book at me. It worked out well."

Yatchyshyn said he learned to be proactive in being cognizant of green strategies. He put in the research time to purchase a sufficient dynamometer with acceptable noise levels and abatement. In addition to the cost of the dyno, he tacked on another \$15,000 in sound deadening equipment. Yatchyshyn said the expense has been a worthy investment.

"When my dyno is running, I can have a 700 hp motor running full song. You step outside, and cars going up and down the street make more noise than my dyno does. If you don't create a problem, you don't have to fix it."

For Frank Honsowetz of Ed Pink Racing in Van Nuys, CA, the EPA and OSHA regulation presence is as cemented in his state as death and taxes. "I think the fire department comes to inspect us regularly just because they just like the way the shop looks and to see what we're up to," he joked.

But keeping a green strategy is serious business for the high-end automotive engine rebuilder. For example – according to its state's code, California law requires that all vehicles must be equipped with an adequate muffler to prevent excessive noise from the exhaust system. No level greater than 95 decibels, when tested under specified conditions, can be generated. Coupled with added restrictions and regulations, Honsowetz said it's the price

Shop Operations

of doing business in the Golden State.

"There's not many race engine shops around that have mufflers on their dynos" he said. "We have to be noise-conscious and aware of things as it is part of the joy of living in southern California."

Though the endgame eventually leads to the government agencies' approval, Judy also suggests there are other ways to meet efficient shop standards without doing it all yourself. His company has former OSHA and EPA inspectors on staff, and your local fire department officials or insurance representatives can be a big help.

"A workers compensation official can come out and do inspection and a lot of times, they ask shops to change things that OSHA might be fine with," he said. "Knowing what has been the cause of claims in the past, officials can point out specific things that need to change as well. So, having those guys come out is a smart thing to do."

When Dave Deegan, owner of En-

gine Labs of Tampa, wanted to test his efficiency he called for Environmental Protection Commission (EPC) in Hillsborough County for help.

Through its "Green Star" Program, the EPC assists auto repair facilities with its environmental compliance. Like similar green-focused plans across the country, the Green Star Program allows shops like Deegan's to conduct a self-audit through a checklist developed by the state's environmental protection department.

The workbook provides useful information such as ways to identify and handle hazardous materials as well as the explanation of details about events of spills and leaks plus emergency preparedness. It also breaks down the most common wastes of an auto repair shop including waste batteries, used oil, coolants and filters.

Once the auto facility completes the checklist, it is submitted to the EPC for review. Then, a certification inspection is performed to ensure that the required actions area in implementation.

After successful compliance, the shop is certified as a "Green Star" facility.

"We are the first 'Green Star' facility in Hillsborough County," Deegan said. "We get tested every three years to see if we are a small quantity generator or non-generator and we've been able to that by the way we clean and pay to get tested."

Although proactive efforts can save future headaches it can become expensive in the front of end of your business costs, but having an efficient shop also has robust monetary value as well as social. Through recycling efforts from used oil to scrap metal that quickly recoup costs, going green can mean actual green dollar bills.

"I'm proud of the way we operate and the way we are responsible," Honsowetz said. "I'm sure in the industry long ago, there were people doing things with waste they should not have been doing. But now, it is the case of doing the right thing and being considerate and doing the right thing. It goes a long way." ■

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Top Ten Violations for the Fiscal Year 2012

The following is a list of the Occupational Safety and Health Administration's (OSHA) Top Ten Violations for the fiscal year 2012 (Per its Law and Regulation number). Are you guilty of any of these?

Fall Protection in construction (1926.501)

• **7,250 violations**

Frequently violated requirements included failure to protect open sides and edges, to prevent falls from roofs, and to cover holes.

Hazard Communication (1910.1200)

• **4,696 violations**

Commonly violated requirements included failure to have a written program, inadequate employee education and training, improper or no labels on containers, and no MSDS's (SDSs) or lack of access them.

Respiratory Protection (1910.134)

• **2,371 violations**

Frequent violations were no written respiratory protection program, poor fit test procedures, unsuitable respirator selection process, and lack of procedures for voluntary use of respirators.

Ladders in construction (1926.1053)

• **2,310 violations**

Violations included damaged side rails, use of the top ladder step, inappropriate ladder for the job, and excessive loads on ladders.

Machine Guarding (1910.212)

• **2,097 violations**

Violations included point of operation exposures, inadequate or no anchoring of fixed machinery, and exposure to blades.

Powered Industrial Trucks (1910.178)

• **1,993 violations**

Common violations were inadequate operator training and refresher training, and poor conditions of PITs when returned to service after repair.

Electrical-wiring methods (1910.305)

• **1,744 violations**

Violations included problems with flexible cords and cables, boxes, and temporary wiring, poor use of extension cords, and using temporary wiring as permanent wiring.

Lockout/Tagout (1910.147)

• **1,572 violations**

Frequent violations were poor or no energy control procedures, inadequate worker training, and inspections not completed.

Electrical-general requirements (1910.303)

• **1,332 violations**

Common violations were related to electric shock and electrocution exposures.

Source: http://www.osha.gov/dcsp/compliance_assistance/frequent_standards.html

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Waste Management

Safety-Kleen will provide your company with proper handling, recycling, and disposal of both hazardous and non-hazardous waste. We ensure that your waste solution balances your objectives, operational demands and budget. Our certified support teams will create a custom service program to remove your waste materials at your convenience, while ensuring you are compliant with local, state and Federal regulations. With Safety-Kleen you get the following:

- Customized pick-up schedules
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The Safety-Kleen Guarantee

Safety-Kleen is backed by our Certificate of Assurance which guarantees that without fault of the customer, if a spill or accident should occur while a customer's conforming waste is in our possession, Safety-Kleen's financial strength, insurance and assets will be there to cover the clean-up costs.

Waste Disposal Options

Safety-Kleen provides a variety of disposal and recycling options for your waste streams, allowing us to account for every detail with an unparalleled level of compliance assurance. Our environmentally-secure processes and treatment technologies meet or exceed regulatory guidelines, providing total regulatory compliance and reduced liability. Safety-Kleen's waste disposal options include:

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