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# BOSS

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## Talking Trash

Why recycling means 'green' in more ways than one.

**PLUS:** Building a better landfill

SPRING 2011  
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SPRING 2011  
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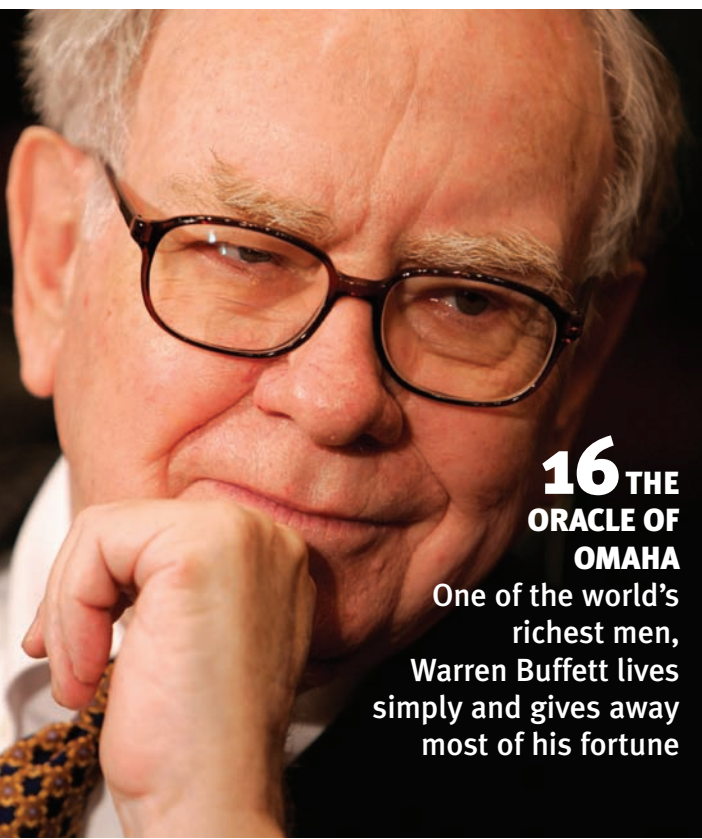
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## Here's to Your Health!



**WE HAVE A YOUNG LADY** working in our main warehouse who is among the hardest working people I have ever been around. She never stops—and her pleasant personality positively affects all those around her.

She was a smoker and for years I talked to her every time I visited the warehouse. I stressed how important she is to her family and to Dixon, and I encour-

aged her to give up her habit. Although Dixon is a non-smoking facility and we offer smoking cessation classes to all our employees, I acknowledged that the decision and motivation to quit smoking ultimately rested with her.

At our Christmas luncheon this past December, she informed me that she had not smoked for three weeks! What a great present she gave herself and her family. Her progress is also a testimony to the success of our workplace wellness program. Aspects of that program are highlighted in this issue's Health & Fitness article, "The Right Fit," on Page 32. In that article, we outline how on-the-job health efforts can increase productivity and cut costs and claims.

In every issue of *BOSS* magazine we have published stories about health and fitness—"how-to" articles aimed at helping you to improve your health through everything from yoga to cycling to acupuncture to better nutrition. Archived issues of these articles can be accessed from the Dixon website at [www.dixonvalve.com/publications/index.php?ptk=1](http://www.dixonvalve.com/publications/index.php?ptk=1), (or scan the barcode below)

We encourage you to go back and re-read them. Without looking after yourself, you may miss out on many of the joys experienced from a long, healthy life. From a business point of view, studies have proven that a healthy work force has better attendance and is better prepared to serve our customers—all while costing themselves, and their company, less money.

Our employees are important, and the healthier they are, the better off we all are!

Thanks for reading.



*Dick Goodall*

## The Myth of Nonjudgmentalness

BY MICHAEL JOSEPHSON

As a product of the '60s, I graduated college with one strong moral conviction: "It's wrong to be judgmental." After all, in a world where some cultures eat dogs, others eat snails and still others eat their enemies, who am I to judge? I was an ethical relativist, convinced that ideas of ethics and morality simply reflect social conventions or personal opinions.

Of course, this was pretty convenient. Relativism made no demands on me, and it instructed me to refrain from making demands on others. It's what Ayn Rand called an exchange of moral blank checks: "I won't judge you, if you don't judge me."

All this changed when I became a father. If I allowed my moral agnosticism to make me so unsure about ethical values that I couldn't say that some things are right and some things are wrong, what guidance could I give my children on matters like lying, cheating, violence and racism?

I came to realize nonjudgmentalness is a myth. Refusing to judge is itself the result of the judgment that there are no valid criteria for right and wrong. On reflection, it seemed clear to me that my firm conviction that Mahatma Gandhi led a better, more worthy life than Adolf Hitler was more than just personal opinion.

I'm still put off by the image of a self-righteous finger-wagging moralist imposing all his personal values on others. But the other extreme can be just as bad. In the end, it's simply irresponsible to treat kindness and cruelty, altruism and selfishness, justice and injustice as moral equivalents. Now I believe that there are a handful of enduring, universal moral truths and I think they're embodied in what I call the "Six Pillars of Character"—trustworthiness, respect, responsibility, fairness, caring and good citizenship. ■

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## Gray-Eyed Man of Destiny

Tennessee's William Walker aimed to  
create a U.S. empire in Central America

BY MARIA BLACKBURN

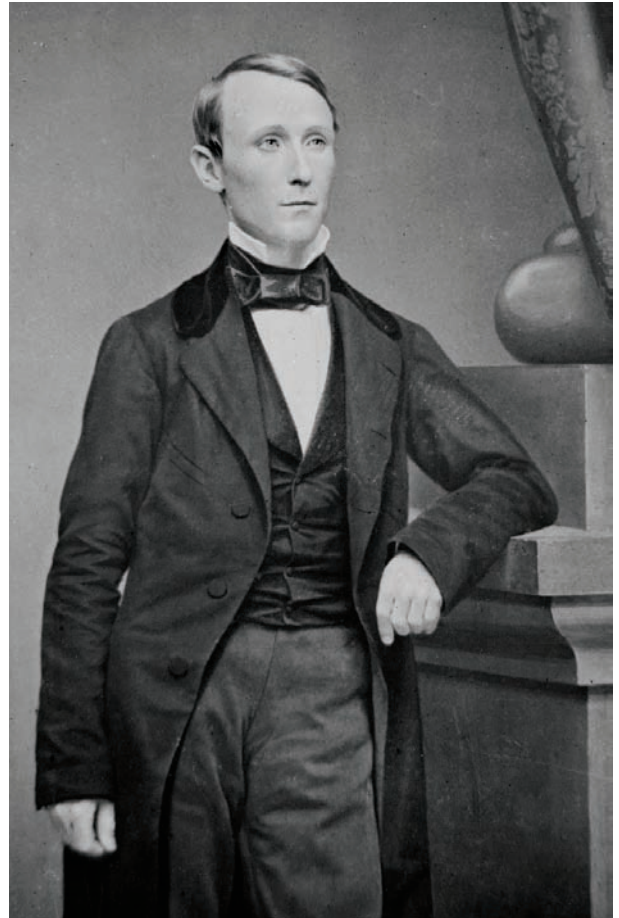
The roadsides of Tennessee are dotted with more than 1,500 historical markers chronicling the rich history of America's 16th state. Some mark the location of Tennessee's numerous Civil War battles. Others celebrate such famous natives as Dolly Parton and Davy Crockett. And more establish the state as the place where engineer Casey Jones launched his last train ride, bluegrass was born and Elvis Presley and U.S. President Andrew Jackson made their homes.

One of these signs, Historical Marker No. 35 in downtown Nashville, briefly relates the compelling story of native son William Walker—a doctor, lawyer, journalist and adventurer born in 1824 and nicknamed “The Gray-Eyed Man of Destiny.” If you’ve never heard of Walker, you are not alone. Read the five brief sentences on the marker chronicling his 36 years, a life that included being elected president of Nicaragua in 1856, however, and you’ll wonder how he ever could have escaped notice.

The only native Nashvillian to ever

be elected a head of state, Walker is perhaps the most famous American filibusterer who ever lived. Years before filibustering became known as a parliamentary procedure used to delay or prevent a vote, it described people like Walker who set off on unauthorized military expeditions in foreign countries to support revolutions. Some were motivated by adventure; others by the promise of financial gain. For Walker, filibustering was about nation building and political power. He ventured into Central America with a vision of creating an American empire of English-speaking colonies there and installing himself as its leader.

Walker was the son of a successful Nashville businessman. He entered the University of Nashville at age 12, graduated summa cum laude at 14 and went on to study and practice medicine and law. He worked as a newspaper editor in New Orleans and in 1849 moved to San Francisco, where he hatched his



master plan of privately conquering regions of Latin America. Like many 19th-century Americans, Walker believed in Manifest Destiny, the idea that the United States was meant to expand across the North American continent. He was skilled at recruiting men to join him in his quest for new territory. Although soft-spoken, Walker had a commanding presence. He “never took advice, but always gave commands and they must be obeyed,” the California poet Joaquin Miller wrote.

Walker's first attempt to colonize another country occurred in October 1853 when he and 45 men set out to establish the independent Republic of Sonora, in Mexico's Sonora and Baja, Calif. His effort failed and he was tried for conducting an illegal war and acquitted. Walker persevered.

In 1855, Walker was contracted by Nicaragua's Democratic party to bring

as many as 300 “colonists” to Nicaragua. He set sail from San Francisco in May with some 60 men and gained 270 more when he landed. Upon their arrival, the men—really soldiers of fortune—were granted the right to bear arms to help fight the ongoing civil war against the Legitimist party. The fighting was difficult but by September Walker’s men had defeated the Legitimist army and he soon took control of Nicaragua. On May 20, 1856, U.S. President Franklin Pierce recognized Walker’s regime. Walker was elected president of Nicaragua and inaugurated on July 12, 1856.

Nicaragua was no mere backwater to the U.S. Because the transcontinental railway and the Panama Canal had not yet been built, the country was of critical importance as part of a trade route between New York and San Francisco. Cornelius Vanderbilt’s Accessory Transit Co. owned the rights to the route and when two of his competitors managed to get Walker to revoke his

company’s charter, Vanderbilt vowed to take Walker down. He successfully pressured the U.S. government to withdraw their support for Walker and his men. The government agreed, motivated in part by Walker’s desire to annex Nicaragua as a new slave state—a move that would further fan the flames of growing sectional conflict in the U.S.

Disease and defections took their toll on Walker’s army, and he ruled until 1857, when he was defeated by a coalition of Central American armies—a drawn-out effort that resulted in the loss of thousands of Central American lives. In May 1857, he surrendered to the U.S. Navy and returned to the United States. He wrote *The War in Nicaragua* about his exploits and the book became a best-seller soon after its publication in 1860. Continuing to believe himself the legitimate president of Nicaragua, Walker mounted several return expeditions, including a failed attempt through Honduras in 1860. He

surrendered and was turned over to Honduran authorities. On Sept. 12, 1860, Walker was executed for piracy in Trujillo, Honduras.

Although Walker remained a popular figure through the end of the U.S. Civil War, especially in the South where he was embraced for his pro-slavery stance, filibustering fell out of favor and he was largely forgotten. In Central America, however, Walker remains infamous more than 150 years after his death.

“Throughout Central America today, Walker’s name ranks with that of Hitler and Stalin,” Stephen Dando-Collins writes in *Tycoon’s War: How Cornelius Vanderbilt Invaded a Country to Overthrow America’s Most Famous Military Adventurer* (Da Capo Press, 2008). Moreover, Walker’s defeat remains a source of national pride. In Costa Rica, a national holiday has long been celebrated on April 11—the day Walker was defeated at Rivas. ■



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# Talking Trash

WHY RECYCLING MEANS 'GREEN' IN MANY MORE WAYS THAN ONE.

**PLUS:** BUILDING A BETTER LANDFILL

BY MICHAEL ANFT AND SUE DE PASQUALE





**IN AN ERA WHEN** iffy mortgages and tangled financial packages have proven harmful to both investors and society, there's one type of junk vehicle that actually makes money: household trash. As cities across the country and around the world seek to lower the costs associated with garbage trucks and landfill space—and “go green”—companies that deal in garbage have found ways to convert all that putrid output into cash.

During the last half-century, recycling has grown to become a routine part of waste management, and daily life, as recycling of all kinds of materials (everything from newspapers and cans to electronics and complex plastics) has become commonplace. According to the U.S. Environmental Protection Agency, Americans recycled a mere 5.6 million tons in 1960, just 6.4 percent of “the waste stream.” By 2008, that percentage was up to 33.2. The United States now recycles roughly 83 million tons each year.

The U.S. is not alone in this trend. In Canada, the

recovery of paper has increased from around 26 percent in 1990 to about 40 percent today, according to Natural Resources Canada. Many European nations—including Sweden, Germany and Austria—do even better, with annual recycling rates of 40 to 60 percent.

With improvements in technology and growing markets for recycled products, municipalities are recognizing that going green can be profitable. The United Kingdom, which currently recycles about 45 percent of its plastic bottles, had been exporting most of its recycled plastics to plants outside the country. But in the last two years, the U.K. has invested in increasing its plastic bottle processing capacity. The U.K.'s first “mixed-plastics” reprocessing facility is set to open in 2011. “Given the strong U.K. demand for high-quality recycled plastics, this represents a great opportunity for U.K. manufacturers to exploit this ‘green’ niche,” says Marcus Gover, director of market development for the U.K.'s Waste & Resources Action Programme (WRAP).



On the 'pre-sort' line at a plant operated by Waste Management Recycle America, workers pick through conveyor belts of garbage to pluck out materials that can't be recycled.

Recycling is hardly a new concept. History shows leaders as far back as Plato advocating the strategy in 400 B.C. In their digs of ancient dumpsites, modern archaeologists note a drop in household waste (broken tools, ash, etc.) during periods when resources were scarce. The implication: People were making do with what they had, reusing and recycling whatever possible. In pre-industrial times, it wasn't unusual to see "dustmen" walking the streets of England; their dirty task involved collecting dust and ash from wood and coal fires to be used for making bricks. By the early 1800s, rag pickers in Yorkshire had joined the recycling ranks, collecting old bits of cloth that were combined with virgin wool to create "shoddy" wool, for a thriving industry that lasted well into the early 1900s.

With the tough economic times of the Great Depression and then the

advent of World War II, recycling became a famous cause for patriotism. Governments in countries around the world—embroiled in a war that gobbled up metal and rubber for weapons—launched massive recycling campaigns, encouraging citizens to collect and donate nylon, old tires and used metal equipment. Enthusiasm for recycling largely faded in the economic boom of the postwar years, but it moved again into the mainstream in the 1970s, a result of rising energy costs and the birth of the environmental movement. Today, it is this growing concern about the environment that has prompted many citizens and government leaders to embrace the "reduce, reuse, recycle" philosophy when it comes to disposing of the mountains of trash we generate each year.

Such efforts appear to have merit: In an international study published last year by WRAP, researchers compared

more than 180 municipal waste management systems. Their conclusion? Recycling proved better for the environment than burying or burning waste in 83 percent of the cases.

### 'Single-Stream' Flows

Thanks to recent advances in technology, the leading edge in U.S. recycling these days is "single-stream" recovery. In many American communities, homeowners no longer need to carefully sort and store their trash by color or type—newspapers in one bin, aluminum cans in another, plastic milk jugs in yet another. Instead, they can throw it all together and put it out at the curb for pickup.

Because of the convenience factor, single-stream strategies lead to the recovery of up to 30 percent more recyclable materials than household pickup plans that require pre-sorting, says Jim Marcinko, area recycling

operations director for Waste Management Recycle America, which operates 100 recycling plants and offers marketing services for more than 140 locations in the U.S. and Canada.

Waste Management currently handles 8 million tons of recyclables a year, and projects it will process and sell 20 million tons by 2020—mostly due to single-stream recycling. “More and more jurisdictions are jumping on the bandwagon these days,” says Marcinko.

He oversees the company’s Elkridge, Md., plant, which runs through more trash than any single-stream plant in the country, handling as many as 1,500 tons of reusable refuse per day (delivered by 250 garbage trucks). In a hulking shed outfitted with crisscrossing conveyors, pulleys and walkways, three shifts of workers help separate glass, plastic, paper and aluminum for 20 hours a day, six days per week.

The 50,000-square-foot plant is particularly well situated to take advantage of a growing market for recyclables. Only a mile from the I-95 corridor (the main north/south highway of the U.S. East Coast) and even closer to the rail lines that run parallel to the plant. It sits within easy reach of several East Coast paper mills. What’s more, the company positioned the plant so that it could tap into international markets. “We sell a lot of export here because we’re close to the Port of Baltimore,” Marcinko says, referring to the major Maryland seaport that handled 33 million tons in foreign commerce in 2008, valued at \$45.3 billion.

The sorting process starts after a truck pulls in at the plant, has its load weighed and then tilts and spills. A smelly tossed salad of recyclable trash is moved by front-end loaders to the main feeding belt. What follows is a highly coordinated marriage of human and machine labor.

Most of the plant’s 80 employees sift through the trash as it moves briskly along conveyors. At the front end, they are on the lookout for items that can jam up the works, especially plastic grocery bags that can get into gears,



## THE SAD SAGA OF FRESH KILLS

In 1947, when New York City opened a “temporary landfill” on a marsh on the northwestern end of Staten Island, city fathers didn’t envision that it would operate as the city’s primary dumping grounds for 54 years. They also had no way of foreseeing how macabre the name they dubbed it—Fresh Kills—would become.

Formerly a squishy 2,200 acres of farmland and swamp, Fresh Kills is named for the estuary it snuggles up against. The landfill site was originally scheduled to remain open for two decades, and then be converted into factory space, parks and residences. But as the city’s output of trash grew, so did the mounds at Fresh Kills—for several more decades. Despite operating under

federal consent decrees because it fell well short of several environmental regulations, the landfill remained open far beyond its planned capping date. At its peak, it took in the contents of 20 barges carrying 650 tons of garbage daily. As a result, some sources say, its volume grew larger than that of the Great Wall of China. By the time it closed, Fresh Kills was dubbed the world’s largest landfill and stood 80 feet taller than the Statue of Liberty.

Decades of protest from residents, who were forced to live with smells and rats, and environmentalists, who argued that the unlined landfill was leaching thousands of pounds of toxins into New York waterways, led authorities to close the dump in March 2001. But part of it would reopen six months later. After the terrorist attacks of 9/11, Fresh Kills was the sorting ground for a large portion of the debris from Ground Zero. More than 1,000 personal effects were found during the sorting process.

Today, the Fresh Kills landfill is being re-created as a park.

# SO, YOU WANT TO OPEN A LANDFILL...



Though recycling is on the rise, an appreciative amount of our garbage still finds its final resting place in a landfill (about 54 percent of municipal solid waste generated in the U.S. in 2008). The 3,000 landfills across the United States that inter 251 million tons of waste chucked annually dot all facets of the landscape: mountainsides, valleys, abandoned quarries and mines, old swamps. Even with those topographical differences, people who design dumps consider the same factors when preparing an open-air site for garbage, including:

## WHAT TO DO WITH THE LAND

Local governments, which oversee the operations of most landfills, must perform an environmental impact study before opening one. They'll look into how much buffer should be left around a site to minimize the unpleasantness that emanates from dumps to nearby residents and businesses. They'll investigate how much land is needed

and what the underlying soil and bedrock are made of. They'll check to see if water flows over the proposed site, how wildlife and humans will be affected by a landfill, and whether the area has any archaeological or historical value.

The goal: to locate landfills where underground rock systems are as watertight as possible. This will prevent seepage of toxins found in many types of waste into groundwater. Keeping local fisheries and nesting areas safe is strongly encouraged by the federal Environmental Protection Agency as well.

## HOW TO KEEP RAIN-WATER AND RUNOFF FROM FILTERING INTO THE DIRT AND WATER BELOW

Once federal, state and local governments grant the required permits, engineers devise ways to keep runoff from leaching into underlying soils and groundwater. The purpose of a landfill isn't to compost the trash so it decomposes quickly, but to bury it in such a way that it will be isolated from groundwater. One method for achieving that involves using a clay liner to keep trash-tainted water from leaching downward. But clay liners can crack, so many engineers prefer to use "bottom liners" made

from puncture-resistant synthetic plastic. To keep rain water from entering "cells"—specific areas where trash has been dumped and compacted—some landfill builders install a storm drainage system that channels the water into ditches, and away from trash.

## HOW TO ISOLATE WATER THAT DOES LEACH OUT FROM THE TRASH HEAP

Some water inevitably makes it through the trash, picking up contaminants (including toxic metals) along the way. To catch this seepage, landfill builders plant perforated pipes in the ground to collect it. Those pipes drain into a "leachate pipe," which delivers the swill to a pond, where it is tested for various chemicals. After testing, the leachate will be handled as sewage or wastewater and is often shipped off to treatment plants.

## HOW TO COVER UP THE TRASH

Typically, each cell is covered daily with 6 inches of compacted soil, after trucks and bulldozers have smashed down the refuse. The soil prevents birds, flies, mice, and rats from getting at the trash. Some landfill operators are experimenting with tarps or spray

coverings because they take up less space than soil. When a cell is completely filled, it is often permanently covered by a cap of polyethylene, and, finally, a 2-foot-deep layer of soil.

## WHAT TO DO WITH THE GAS BELCHED UP BY TRAPPED MOUNDS OF TRASH

An airtight landfill will prevent oxygen from entering the equation. But bacteria will still break down the trash. When they do, they create "landfill gas," a heady brew made up of about 50 percent carbon dioxide and 50 percent methane. Landfill builders sink pipes into the covered mounds to collect gas, which then is either vented or burned off. Some sell the rights to the gas to utility companies or manufacturers that use it to power their boilers.

The amount of trash that Americans create—about 1,600 pounds per year for each person—has almost tripled since 1960, while the amount sent to landfills has doubled during that time. So, landfill practices that safeguard the environment are at a premium, as are recycling schemes that further lower the amount of waste sent to them.

Source: <http://science.howstuffworks.com/landfill.htm>

rollers and pulleys, and disable them. Other machine-wrecking gems at this plant have included car doors and bumpers, concrete blocks—even bowling balls.

On the “pre-sort line,” eight mask-wearing employees pick out long sheets of plastic, tablecloths, buckets and other heavy plastic items and toss them down chutes that have trash barrels waiting for them at the bottom. Much of the barrel will eventually be bundled up as trash. About 5 percent of what the plant receives can’t be reused.

A steady stream of what is left—cardboard, cans, paper and bottles—travels on to the next step at the end of the line, where technology takes over the sorting. First the conveyors sort out items by size and density. Then the high-tech modes kick in, with a system that makes use of discs that are 1-foot-square and contain six points. They look like star-shaped gears, and spin madly in tandem at the end of each conveyor line, allowing heavier items—glass and plastic—to roll back and down onto a separate moving line, while generating enough of an upward gust of air to take the lighter paper and cardboard up to another belt. The

system was devised by Lubo USA, a company based in the Netherlands that first developed screening techniques to separate dirt from conveyor-borne potatoes in the 1960s.

“It’s a violent process,” explains Marcinko. “But it works well. We have less worries about contamination of paper because glass shards will be pulled down while the paper goes above the discs.” Waste Management Recycle America guarantees that this plant will produce recyclables with 2 percent or less contamination—meaning that what

to separate things. This is better.” (Because aging paper can be dusty, Waste Management Recycle America installed air handlers to change the air in the plant six times per hour.)

Aluminum cans are separated out by an ‘eddy current’ created by the spinning of a rotor, which creates a field of energy around non-ferrous (metals without an appreciable amount of iron) items that repels them from the rest of the scrap. The eddy current pushes cans over a break in the line, while other non-paper items fall off of

**This plant will produce recyclables with 2 percent or less contamination—meaning that what purchasers of recycled paper eventually buy will be 98 percent pure.**

purchasers of recycled paper eventually buy will be 98 percent pure.

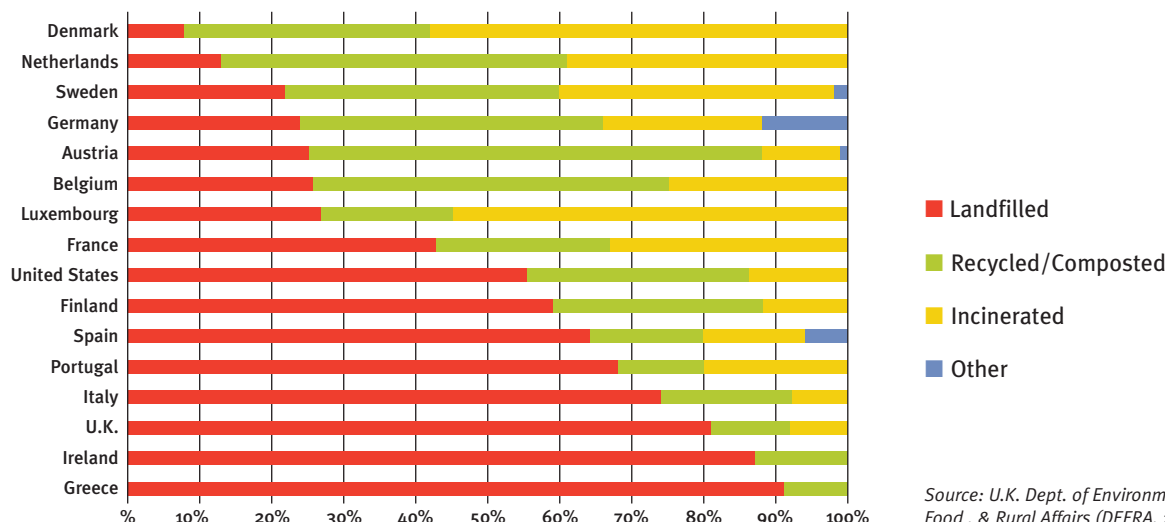
The Elkridge plant uses 200 discs on each of its eight end-of-conveyor screens, including some that separate “chipboard” (the stuff of cereal boxes) and cardboard from newspaper, the most prevalent item in the recycling business. “This is the Cadillac of recycling equipment,” Marcinko says. “Some places use magnets and such

it. The cans then travel off on their own conveyor. It’s important that aluminum be completely separated. Manufacturers who melt it down into sheets won’t accept materials with even 1 percent contamination.

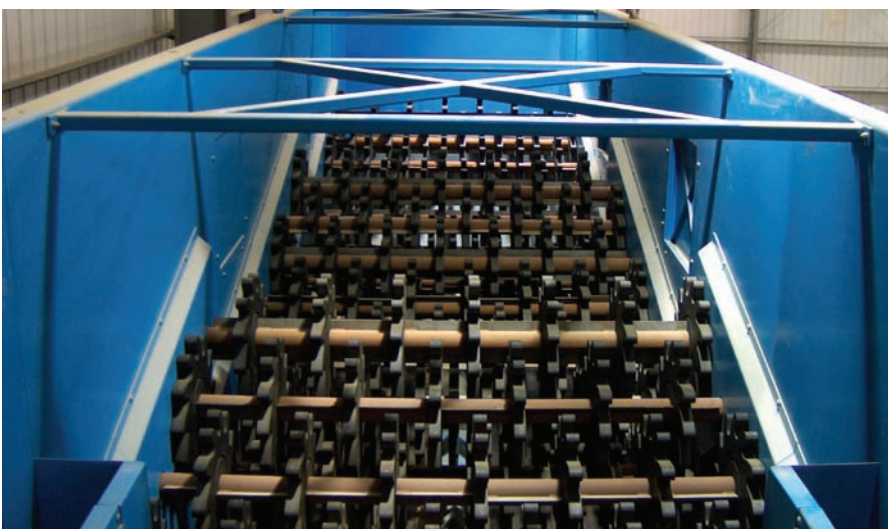
By the time the process is over, each product is on its own line. Paper is cubed into 1-ton bales, as are plastics. Glass and aluminum are stored in big bins.

Then it’s off to market. The Elkridge

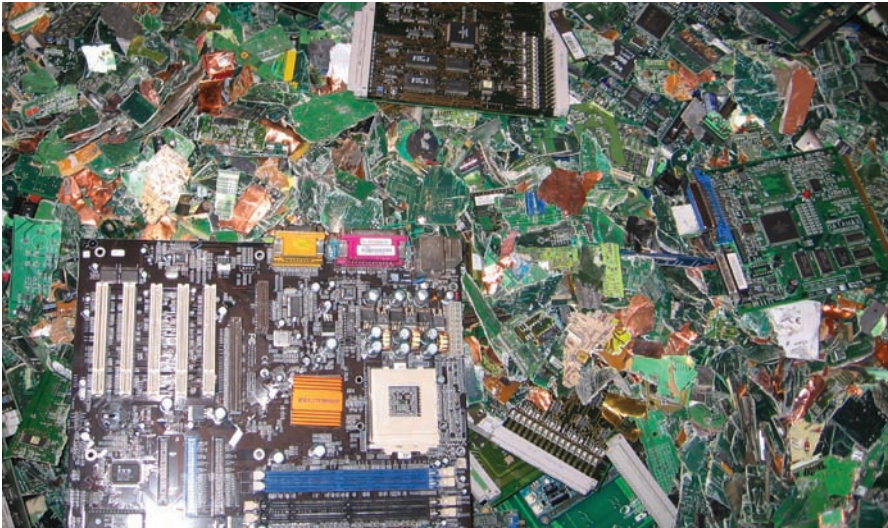
## WASTE MANAGEMENT IN THE U.S. & EUROPE



Source: U.K. Dept. of Environment, Food, & Rural Affairs (DEFRA, 2004)



The star-spinner system devised by Lubo, USA, top, allows heavier items (glass and plastic) to roll back and down, while generating air that pushes paper and cupboard upward to another conveyor belt. Electronic waste—including computer circuit boards—often ends up in landfills, where it can leak carcinogenic toxins.



Much of this waste (some 70 to 80 percent in the United States) ends up in landfills, Carroll reports, where it has the potential to leak toxins including lead, mercury, arsenic and cadmium into the ground. Currently, just about one-fifth of e-waste is channeled through recycling companies—but that doesn't guarantee such waste will be safely disposed of. That's because some companies sell it to brokers, who end up shipping it to the developing world where environmental enforcement is weak and "the key to making money is speed, not safety," Carroll writes.

facility annually sells thousands of tons of aluminum cans to Anheuser-Busch, at \$1,000 per ton. Plastic bottles are sent to a plant in North Carolina that provides bottles to Coca-Cola. Plastic fetches \$300 to \$500 a ton, depending on the type. Plastic that isn't converted into more bottles will be made into spun-plastic carpets, jackets and T-shirts, among other things. Most paper from this plant is exported, where it will be reduced to pulp, liquefied, laid out on felt and then cut into sheets. As of spring 2010, paper was bringing in \$90 per ton—nowhere near the all-time highs of \$120 or so that occurred when China was buying paper like mad in advance of the 2008 Summer Olympics, but well above the average price of \$70.

Glass presents a problem, however. Because it is so cheaply made, the market for glass, which is broken up while being subjected to the aggressiveness of the sorting process, is almost nonexistent. Marcinko says he'll send the glass along to out-of-state middlemen for next to nothing.

### Evils of E-Waste

Not all trash can safely be put out at the curb for recycling pickup. Electronic waste, or "e-waste," represents a rapidly growing source of trash, as our increasingly tech savvy society casts off televisions, computers, monitors, cell phones and other equipment, in time for the next state-of-the-art technological upgrade.

**Much of the waste ends up in landfills, where it has the potential to leak toxins including lead, mercury, arsenic and cadmium into the ground.**

According to the U.S. Environmental Protection Agency, some 30 to 40 million personal computers will be ready for "end-of-life-management" over the next several years, notes journalist Chris Carroll, the author of "High-Tech Trash," an article that appeared in the January 2008 issue of *National Geographic*. With the switch to high-definition televisions, about 25 million TVs are taken out of service annually.

In Accra, Ghana, he witnessed villagers breaking the copper yokes of TV picture tubes, littering the ground with lead (a neurotoxin) and cadmium (a carcinogen). After stripping out drives and computer chips for re-sale, these salvage workers, many of them children, burned the remaining plastic, sending clouds of toxic fumes into the air.

There are responsible recyclers of e-waste, Carroll notes, and he points to Creative Recycling Systems as one good example. The Tampa, Fla.-based company (one of several in the United States equipped to recycle e-waste) can handle about 150 million pounds (68 million kilograms) of electronic waste a year. Thanks to vacuum pressure and filters installed throughout the company's plant, "the air that

# FACTS AND FIGURES



comes out is cleaner than the ambient air in the building,” according to company vice president Joe Yob. Creative Recycling uses a \$3 million conveyor belt system, with vibrating screens and magnets, to process and separate non-ferrous metals (copper and aluminum) and precious ones (gold, silver and palladium).

The most valuable output from this process? Shredded circuit boards. The company ships this material to a Belgium smelter that specializes in precious metals recycling. Carroll reports that a 4-foot-square box of the stuff can fetch \$10,000.

In the world of recycling, it would seem, one man’s junk is another man’s treasure. ●

## Total amount of waste recycled in the United States, 1960 to 2008:

1960	5.6 million tons
1970	8 million tons
1980	14.5 million tons
1990	33.23 million tons
2000	69.3 million tons
2003	74.7 million tons
2005	79 million tons
2007	84 million tons
2008	82.9 million tons

## Percentage of total waste recycled in the United States, 1960 to 2008:

1960	6.4%
1970:	6.6%
1980:	9.6%
1990:	16.2%
2000:	29%
2003:	30.9%
2005:	31.7%
2007:	33.1%
2008:	33.2%

Source: U.S. Environmental Protection Agency (Nov. 2009)

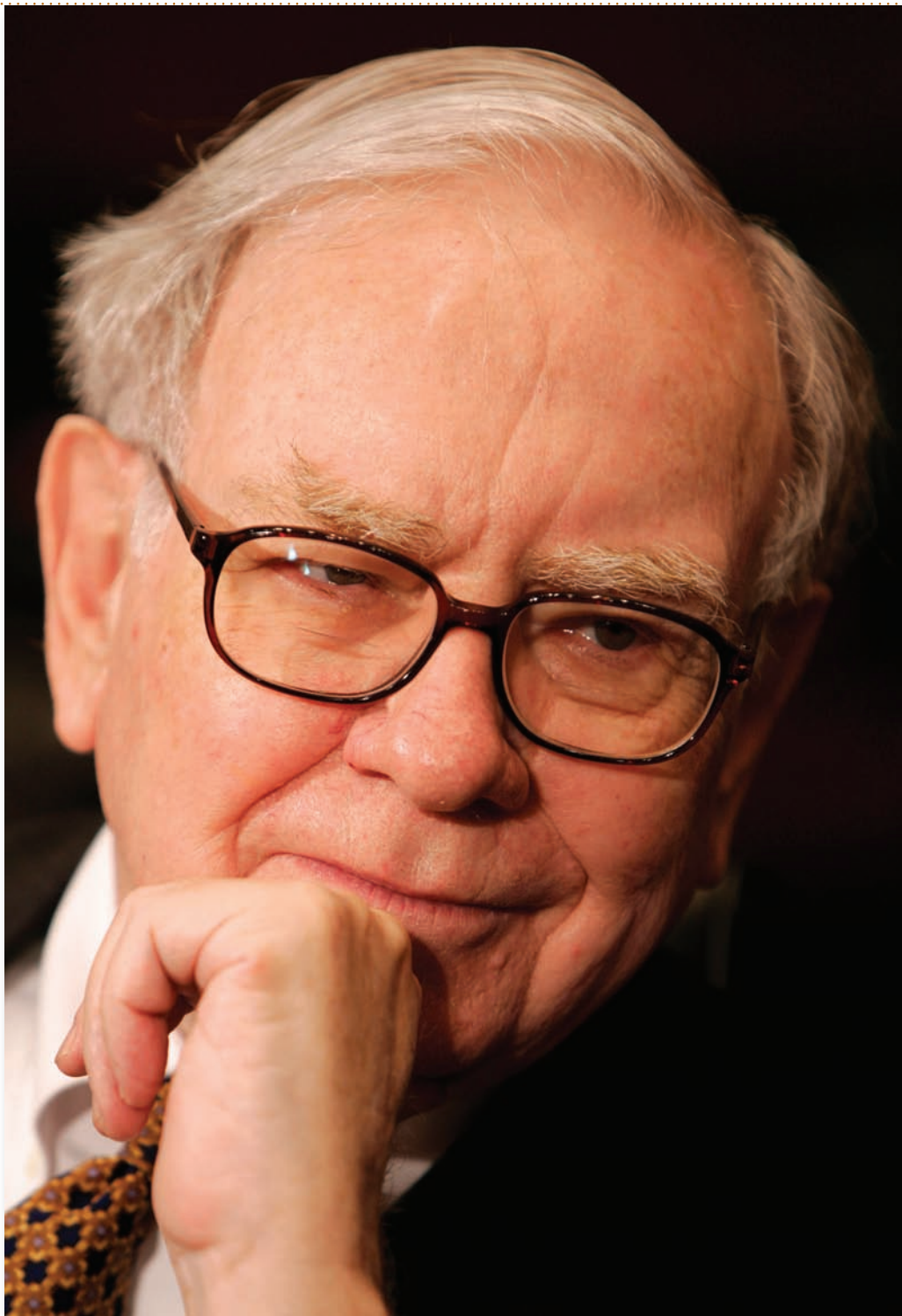
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# THE ORACLE OF OMAHA

ONE OF THE WORLD'S RICHEST  
MEN, WARREN BUFFETT  
LIVES SIMPLY AND GIVES AWAY  
MOST OF HIS FORTUNE

BY SARAH ACHENBACH





**WARREN BUFFETT**, chairman and CEO of Berkshire Hathaway and the third richest man in the world, according to *Forbes*, is legendary for his stock-picking savvy. Known, envied and emulated for his scholarly precision in researching stocks and his even-keel approach to investing, the “Oracle of Omaha” is equally famous for his aversion to making predictions. Perhaps that’s because the one financial prediction he did make, as a youngster, missed by almost \$6 million.

When he was 10, the budding financial wizard announced to his stockbroker father that he would have \$1 million by age 35. But when Buffett reached that age in 1965, his net worth had snowballed into a whopping \$6.8 million.

Berkshire Hathaway was a dying textile company when Buffett began buying its stock in 1962, because it was cheap. Under his leadership, he has transformed the company into one of the world’s largest holding companies. He diversified the company’s holdings to include Dairy Queen, ABC, GEICO and Coca-Cola. In 2009, he added Berkshire Hathaway’s largest acquisition to date—all of BNSF Railway, the former Burlington Northern and Santa Fe Railway.

Headquartered in Buffett’s hometown of Omaha, Neb., Berkshire Hathaway’s average annual growth is a staggering 20.3 percent over the past

46 years. During the past decade, its stock has earned a total return of 76 percent, outstripping the negative 11.3 percent return for the S&P 500. (It's worth noting that the only dividend ever paid on Berkshire Hathaway stock under the Buffett reign was 10 cents in 1967, prompting the congenial Buffett to quip that he "must have been in the bathroom when the dividend was declared.")

Today, at age 80, Buffett's business and business acumen have taken him around the world, but he is famous for his homebody tendencies. Though far from a simple man, Buffett does have simple, Midwestern tastes: He prefers meat and potatoes, snacks on peanut brittle and cherry soda (Pepsi, until he bought shares of Coke in 1988 and became one of the soda behemoth's biggest fans and investors, purchasing more than 14 million shares), drives an older model Cadillac, and has lived in the same house since 1958.

Each year, Buffett writes a letter to his shareholders. His missives are so chock-full of wisdom that they've been collected into a book, *The Essays of Warren Buffett: Lessons for Corporate America* (1996). He brings an equally folksy feeling to the Berkshire Hathaway shareholders' meeting in Omaha, which is dubbed "Woodstock for Capitalists." Shareholders ask Buffett questions during the opening meeting. He often plays his ukulele during the evening festivities. And he roams the exhibits of the many companies in which Berkshire Hathaway owns stock. The May 2010 meeting drew upward of 37,000 people.

As if the world needed further proof that his name is synonymous with money, in 2001, Benjamin Moore paints debuted "Buffett Green"—a hue the exact green of U.S. currency.

### A HUMBLE BEGINNING

Buffett's humble backstory lends credence to the idea that legends are born and not made. The only son of a doting father and a distant, often verbally abusive mother, young Warren learned risk-taking from his father, Howard

Buffett. The elder Buffett opened a successful brokerage firm during the Great Depression before running for Congress in the 1940s and enjoying several terms as a Republican congressman.

His mother's influence was much less positive. Buffett and his two sisters worked hard to stay out of Leila Buffett's way—and out of the house. At age 6, little Warren went door-to-door, selling bottles of soda and chewing gum purchased from his grandfather's grocery store. By age 10, he was selling peanuts and popcorn at University of Omaha football games.

Young Warren also passed many happy hours adding large columns of numbers in his head, amassing stamps and bottle cap collections, and learning to calculate odds by racing his marbles down the back of the bathtub to see which one would hit the stopper first. Fascinated by his father's work, he spent a great deal of time at Howard's office learning about the stock market. In fact,

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“I WAS BORN  
WITH THE  
RIGHT SKILLS,  
IN THE RIGHT  
PLACE, AT THE  
RIGHT TIME.”

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the family discovered his nearsightedness when the young Buffett had trouble reading the Trans-Lux machine, an electronic display of major stock prices.

“I was born with the right skills, in the right place, at the right time,” says Buffett, who moved with his family to Washington, D.C., after his father was elected to his first term in Congress in 1942. Young Warren saved almost every penny he earned, and by the time he was a teenager, he had bought a 40-acre farm as an investment. He doubled his

money four years later.

After graduating from Woodrow Wilson High School, he left for the University of Pennsylvania. But he returned to his native Nebraska after his sophomore year to finish his undergraduate degree at the University of Nebraska, Omaha. With degree in hand, at the age of 19, Buffett applied to Harvard's business school. But the recruiter rejected him, saying he was too young. So Buffett quickly fired off an application to Columbia's business school (after the deadline and too late for an interview) because that was where his idol, Ben Graham, was on faculty. Ben Graham was the author of the landmark 1934 book *Security Analysis*, and *The Intelligent Investor*, one of Buffett's favorite books. Columbia accepted Buffett without question. Though Buffett was younger and less mature than the GIs flooding postwar classrooms, he quickly earned a reputation for understanding and lecturing on the complexities of the stock market.

He was also the only student ever to earn an A+ from Graham. “The basic ideas of investing are to look at stocks as business, use the market's fluctuations to your advantage, and seek a margin of safety. That's what Ben Graham taught us. A hundred years from now they will still be the cornerstones of investing,” Buffett would later say.

The professor took notice of Buffett, who offered to go to work for free at the firm of the elder stock “statesman.” Though Graham had no job at the time for his star pupil, the friendship between them continued when Buffett returned to Omaha to work as a broker in his father's firm.

In 1952, Buffett married Omaha gal Susan Thompson and started a family: first a girl, Susan; and later, two boys: Howard and Peter. Always the teacher, Buffett taught a few night courses at the University of Nebraska, Omaha, and with the help of Dale Carnegie courses, overcame his initial fear of public speaking.

Then, in 1954, he got the call from Graham with the offer he had been



In 2006, Warren Buffett gave \$31 billion in Berkshire Hathaway stock to the Bill & Melinda Gates Foundation, the largest sum of money given to any charity in history.

hoping for: a position in his mentor's firm, Graham-Newman Corp.

Buffett and his family moved to New York, where he researched companies for investment opportunities for Graham's firm. Following Graham's belief that the market is servant, not master, Buffett also discovered a fascination with how a company worked, an interest not shared by Graham. By 1956, Buffett had built his own capital to \$140,000 from less than \$10,000. He was ready to return home and try things his way.

### INDEPENDENT GROWTH

He founded Buffett Associates (later renamed Buffett Partnership) with \$105,000 in capital from seven limited partners and worked by himself from a cramped home office, investing for friends and family. At the time, Wall Street was the only place to have a serious career in finance. None of that mattered to Buffett. Using Graham's principle of "intrinsic" business value (which states that the measure of a business' true worth is completely independent of the price of its stock), and his own careful, studious approach,

Buffett researched company after company.

"I never talk to brokers or analysts," he says. "You have to think about things yourself." Within five years, his partnership earned a remarkable 251 percent profit, compared to the Dow's 74 percent. It was during this time that he met Charlie Munger, today vice chairman of Berkshire Hathaway. Omaha-born and Harvard Law School-educated (without a bachelor's degree), Munger has become one of Buffett's greatest friends and business collaborators.

After amassing partnership assets totaling \$44 million, in 1969, Buffett liquidated the portfolio except Berkshire Hathaway and Diversified Retailing. A year later, he named himself chairman of the board of Berkshire Hathaway and began building Berkshire into the giant it is today. His stay-the-course philosophy weathered the market's ups and downs. In 1983, *Forbes* for the first time named Buffett to its list of the 400 richest people. At age 53, he had reached billionaire status.

But the "Oracle of Omaha" took a very public hit in 1999 during the dot.com boom. Though he had a deep

respect for—and close friendship with—Bill Gates, Microsoft chairman and co-founder, Buffett was not shy about his reluctance to invest in technology. He had bought 100 shares of Microsoft upon meeting Gates in 1991, but held firm to a position he established in the late 1960s when technology stocks emerged. At that time, Buffett pronounced that he "will not go into businesses where the technology, which is way over my head, is crucial to the investment decision." Berkshire Hathaway stock soared to an astronomical \$80,000 per share in the late 1990s, but in 1999, as Internet stocks dominated the market, Berkshire Hathaway's net increase was a mere 0.5 percent per share. The media reported that Buffett had finally lost his Midas touch.

He held no news conference, never fought back in the media. Instead, Buffett continued with business as usual, investing in companies selling below their value. The dot.com bubble burst, as he had predicted, and Berkshire Hathaway's stock and his status as a stock market sage fully recovered. On Oct. 23, 2006, Berkshire Hathaway became the first U.S. stock to trade at \$100,000 a share. That same year, Buffett gave \$31 billion in Berkshire Hathaway stock to the Bill & Melinda Gates Foundation, the largest sum of money given to any charity in history. "I've felt that money was just claim checks that should go back into society," he said. In addition, he divided \$6 billion between the Susan Thompson Buffett Foundation (he changed the name from the Buffett Foundation when his wife died in 2004) and three other charities run by his children.

Bill Gates recently summed up his friend's seemingly clairvoyant ability to choose stocks. "[Warren] has a framework for looking into a business and the profit stream that [allows] him to make very quick and very sound judgments," noted Gates. "He has a lifetime of doing that, and his model just keeps getting better and better. No one else is as fanatical and talented." ●



FINDING MEANING THROUGH

# Voluntourism

‘Working vacations’ allow travelers to immerse themselves in a different culture—while also giving back

BY GREG RIENZI

The scenic Pongo de Mainique gorge, on the lower Urubamba River in Peru, is near the base of operations for ProWorld—a service travel organization that develops long-term relationships with needy communities (see page 23 for more). Opposite: A Peruvian in traditional garb.

CAN'T CHOOSE BETWEEN PARIS OR THE CARIBBEAN FOR YOUR VACATION DESTINATION? THEN HOW ABOUT A TRIP TO ROMANIA TO TEACH ENGLISH IN AN ORPHANAGE, OR TO COSTA RICA TO HELP REBUILD A RURAL ELEMENTARY SCHOOL? IF ANIMAL RESCUE IS MORE YOUR THING, THERE'S A PROJECT FOR THAT, TOO.

The “voluntourism” industry has grown during the past decade as a growing number of people want to add a humanitarian facet to their travel. These volunteer or service vacations allow participants to immerse themselves in a foreign culture and also give back. In a global economic downturn, the prospect of spending a few weeks in an exotic setting for a relatively modest sum has additional appeal.



The concept of volunteering abroad dates back to World War I, when college students offered to drive ambulances in the European Theater. In the 1960s and 1970s, organizations such as the Peace Corps and Habitat for Humanity came on the scene, attracting legions of altruistic 20-somethings.

Today, hundreds of providers offer more bite-sized volunteer experiences, from a few days to a month, for people of all ages and backgrounds.

“It’s a big, broad market now,” says Richard Webb, founder of ProWorld, a volunteer vacation provider since 1998. “We’ve seen our demographic continue to expand. The core draw is [people] wanting to help and connect with other cultures. In this global economy, people want to find more meaning.”

Organizations such as ProWorld and others offer trips to destinations all over the globe—from Latin America to China—for projects that fall under the broad categories of health (malaria prevention, community clinics); environment (clean

water wells, conservation efforts); social and economic development (after-school programs, rural literacy); and wildlife (counting sea turtle eggs). Most tour companies provide applications that match up personal interests and abilities.

Although prices vary greatly, a two- to four-week experience can range from \$1,000 to \$3,000. The price typically covers room and board, airport pickup and dropoff at a program site, onsite transportation, and weekly adventure and cultural experiences. Some program fees also include foreign lan-

guage lessons and health and travel insurance.

To keep prices down, travelers forgo luxury accommodations and traditional amenities such as room service and an on-site spa. Instead, participants often opt to stay with a host family, at a project location (such as a health clinic) or in a modest group-living accommodation or low-end hotel.

Randy LeGrant, executive director of GeoVisions and a 30-year veteran of international education and volunteering, says that organizations like his look for communities with a demonstrated need and sustainable, result-oriented projects.

“We want to add value to the community,” LeGrant says. “And we want to make sure volunteers can participate in a meaningful way and leave the experience feeling good about themselves and what they did.”

Here are just three examples of people at work and play on vacation.



From top: During Chad Goebel's travels in India he snapped photos of the Golden Temple of Amritsar, top, and a local man on the street. Goebel's work at a "de-addiction" clinic included a mural project. Bottom: Mary Pat Ryan gets down and dirty for a filtration project in Peru.

**CHAD GOEBEL**, from Tucson, Ariz., chose his volunteer vacation destination on a whim. A friend told him she was going to India to work on a project with Cross-Cultural Solutions, an organization out of New Rochelle, N.Y.

Goebel, who has traveled all over the Western Hemisphere and Europe, had never been to eastern Asia or volunteered abroad. "And India had always fascinated me," he says. "I told her, 'Sign me up.'"

Cross-Cultural Solutions placed him at a drug and alcohol rehabilitation center in Dharamshala, a city in northern India near the Tibetan border.

On his application, Goebel mentioned he had an art background. A representative later asked if he'd like to paint a mural at the center. "I went there with that intention," he says, "but I did wonder right away how that would fill my three weeks."

Goebel had little clue then to what places—physically and emotionally—his adventure would lead him.

He arrived in New Delhi and spent a few days there to get acclimated to the time change and the environment. Cross-Cultural Solutions hosted a class about the customs in India and what to expect the rest of his trip.

Then, it was onto Dharamshala and the "de-addiction center"—an all-male clinic with nearly 40 patients of various ages. He was paired with another volunteer who had already been in the country for a while. Through an interpreter, Goebel explained the mural project and asked them what they wanted to see. The consensus was a building with a strong foundation and a blue sky above. He worked up a sketch and the patients asked when they could get started.

"I never picked up a paintbrush. They wanted to do it," he says. "We got started right away. They really enjoyed it. It changed their daily activities and gave them something to look forward to. It turned into art therapy for them. It was absolutely wonderful."

Goebel also gave lectures on leading a drug-free life. With no background in counseling, Goebel said he just used himself as a role model. "I told them because I didn't have drugs in my life, I was able to have a job I enjoyed, to travel when and where I wanted, to do the types of

things I wanted to do, and that they could do the same."

He volunteered at the center each weekday from 8 a.m. to 11:30 a.m. His afternoons were filled with Indian language lessons, yoga, guest speakers and field trips to heritage sites such as the ancient Kangra Fort—the largest fortification in the Himalayas and oldest of its kind in India.

Goebel stayed in a large house with dorm-style bedrooms divided by genders. The weekends were his, and he took advantage of the inexpensive country and exchange rate to shop and take day trips to sites such as the spectacular Golden Temple of Amritsar, the holiest site in Sikhism. The temple, built in the 16th century, sits on a structurally contained lake and is one of the region's most popular tourist attractions.

"This was a completely different experience for me," says Goebel, of his work at the de-addiction center. "I have some friends who are nurses and psychiatrists back here in the United States, and they told me what I might expect to see. But nothing could have prepared me for what I saw. To be a part of these men's lives, see what they are going through, and then impact them, in whatever small way, was immensely gratifying."

**A CLASSIC SCENE** from television's *I Love Lucy* shows the title star in Toro, Italy, stomping grapes barefoot in a massive wine vat. Mary Pat Ryan had her "Lucy moment" in spring 2010—except in her case she danced pant leg up in a pile of mud and sawdust in a small town in Peru's Sacred Valley.

Ryan, a New York-based advertising executive, traveled to the South American nation for a two-week project focused on water filtration systems. Her mud play was actually work, as she used her feet to form a mixture that would later be turned into ceramic water-filtering pots (picture a primitive Brita filter). The pot's tiny holes help purify water contaminated by bacteria and make it safe for human consumption.

The need for such devices is great. Annually, 1.7 million deaths worldwide — mostly children under the age of 5—are attributed to unsafe water, according to World Health Organization figures.

Volunteers like Ryan, 45, help build the filters, develop campaigns to promote their use, install them in community homes,



A small Hindu shrine on a mountaintop in the village of Dharamkot, McLeod Ganj, Dharmashala, India.

## Volunteer opportunities: Where to start?

Here are some well-established, outcome-driven organizations to help you find what could be the adventure of a lifetime.

**GoAbroad.com** ([www.goabroad.com](http://www.goabroad.com)): A leading clearinghouse for international education and experiential travel. From the site's "Volunteer Abroad" page, users can search hundreds of programs by region, country, type of volunteer work and duration. Want a two-week agriculture-based experience in Jamaica? Just choose from the drop-down list.

GoAbroad also hosts a networking site ([www.goabroad.net](http://www.goabroad.net)) where you can learn about members' adventures through journal entries, profiles and photo galleries.

**GeoVisions** ([www.geovisions.org](http://www.geovisions.org)): Founded in 2001, GeoVisions specializes in short-term volunteer abroad programs with a "communication" bent. The organization oversees more than 25 projects around the globe where volunteers primarily teach conversational English on average 15 hours per week. The median age of participants is 35.

**ProWorld** ([www.myproworld.org](http://www.myproworld.org)): ProWorld offers profound two- to 48-week cultural, service and academic experiences in Peru, Belize, Mexico, India, Thailand, Ghana and Brazil. The organization, founded in 1998, focuses on developing long-term relationships with communities and has a year-round presence in project locations. The projects are chosen and defined by community members and stakeholders and fall under three categories: health, the environment, and social

and economic development. Past participants rave about the experiences.

**Global Volunteers** ([www.globalvolunteers.org](http://www.globalvolunteers.org)): One of the forerunners of voluntourism, Global Volunteers organizes short-term "working vacations" to 19 countries, including three programs in the United States (Minnesota, Montana and West Virginia). The organization, which just celebrated its 25th anniversary, caters to all age groups—baby boomers comprise roughly 30 percent of participants. Projects, many of which are family-friendly, include teaching conversational English, working with at-risk children, helping paint/repair buildings and health care services.

**Cross-Cultural Solutions** ([www.crossculturalsolutions.org](http://www.crossculturalsolutions.org)): A leader in the field of international volunteering since 1995. Each year, the organization supports more than 4,000 people volunteering in 12 countries in Africa, Asia, Latin America and Eastern Europe. CCS has in-country staff and its volunteer abroad programs run from two to 12 weeks. Volunteers work in orphanages and child-care centers, schools, health clinics and hospitals, homes for the elderly, centers for the disabled and other community organizations.

**Others to consider:** United Planet ([www.unitedplanet.org](http://www.unitedplanet.org)), Real Gap Experience ([www.realgap.com](http://www.realgap.com)). —G.R.



Blackfeet dancers delighted the Picard family during their stay on the reservation.

educate families on use and conduct public health workshops on clean drinking water.

Ryan, who has traveled extensively and done some charity work, previously visited Peru in 2009 for a three-day conference in Lima. Then she stayed in

an upscale hotel in what she described as a “posh” region of the city. In essence, she saw the five-star version of the country. Afterward she was eager to see how real Peruvians lived.

“I wanted to experience this place so much more, and to give back to a community that I felt could use some assistance,” she says.

Ryan also wanted physical activity and an opportunity to improve her Spanish. She learned of ProWorld, which has strong roots in Peru. While Ryan spent the majority of her time on water filters, she also provided some after-school care and worked on ProWorld’s cleaner burning stove project, in which volunteers construct and install stoves in rural homes and then conduct follow-up visits. The stoves help reduce the amount of firewood used by the family and, more importantly, decrease the amount of smoke inhaled while cooking—a major public health issue in the area.

ProWorld’s in-country base of opera-

tions is Urubamba, a village in southeastern Peru near the Urubamba River under the snow-capped mountain of Chicon. The town is located one hour from Cusco, the capital of the Inca Empire, and near a number of significant Incan ruins.

Ryan resided with a family in a modest home right off the town square in Urubamba. She describes the home as rustic, but clean, and devoid of modern conveniences such as cable TV, a refrigerator and air conditioning.

“The experience certainly pushed me out of my comfort zone,” Ryan says. “I got to see their living situation, which was very simple, and see up-close the serious health problems that impact people there.”

Each weekday morning, she woke to a home-cooked meal and then was off to the water filter project site. She came home for lunch, and then left again for Spanish lessons in a farm-like setting in the shadow of the Andes. At after-school care, Ryan volunteered for playtime duty.

## Tips for the Would-Be Volunteer Traveler

### Before you go

**Ask yourself, what do you want out of the experience?** If the answer is a few days of kayaking/hiking and a hands-on project where you can see tangible results before you leave, odds are such an experience exists. “Find the mix, the balance you’re looking for,” advises ProWorld’s Richard Webb. “The value is in immersing yourself in something that is fun, rewarding and also a bit uncomfortable at times. Think about the culture you want to experience, the language you want to learn, the climate you want to be in. Pick and choose.”

**Do your homework** Find out what the organization is all about. Experts say to look for an organization that has a year-round presence in the country/community and staff on the ground or nearby to assist. “That is really important both from a safety and quality standpoint,” Webb says. “Talk to them via e-mail, phone. Get some personal connection beforehand, a good sense of who they are.”

**Talk to project alumni** Most organizations will gladly put you in touch with past participants. Don’t just ask them if they had fun; dig deeper and find out if they had a rewarding experience and would do it again.

**Skills not required** Skills are useful and most organizations will

help match your skills with a project. However, volunteer vacation providers say you don’t have to be a health care provider, a seasoned handyman or fluent in a foreign language to be helpful. Can you paint a wall or read a bedtime story to a toddler? You have value.

### Found a project/destination. Now what?

**Bring a positive attitude/realistic expectations** You can’t fix anything overnight, or even in four weeks, says Greg Smith, an engineer in his early 60s who recently traveled to Peru with his son to work in orphanages near Lima. “I would tell people to go with an open heart and an open mind,” Smith says. “There are cultural differences that you just won’t understand. Roll with the punches. Just give freely. You’re in a place where any help you can give is good.”

**Not Club Med** Come prepared to get your hands dirty. Volunteer/service vacations are not about luxury accommodations, spas and lazy afternoons in hammocks. The goal is to immerse yourself in the community and culture. You’ll have time for fun and to take in the sights, experts say, but be prepared for an eye-opening, up-close look at a real community at work. —GR



"I taught the kids the Hokey Pokey," she says. "They loved it."

Ryan says the working vacation, which cost a total of \$1,800 plus airfare, was one of the best travel experiences of her life. In her free time, she visited Incan ruins, hiked trails, shopped in markets and visited the "breathtaking" city of Cusco.

"I had a fabulous time," she says. "The people there were so nice to me. The weather was warm, but dry, and you got to live and work in a completely beautiful setting. I would go back in a minute."

**EACH SUMMER**, the Picard family runs the traditional vacation gamut: beaches, cabins and visits to national parks. But a few years ago, Matthew and Suzanne Picard wanted to do something different with their three children. Give back.

"We thought, we have all that we need and more. It's time for us to take a vacation to serve others," says Suzanne.

The Picards did some research and

discovered Global Volunteers, an organization that hosts domestic volunteer vacations. The family chose a one-week stay at the Blackfeet reservation in Montana's Glacier National Park.

For Suzanne, the trip meant getting back to her roots. Before she married, she had served in the Peace Corps. She spent two years in the Republic of Cameroon during the mid-1980s primarily advocating best practices at freshwater fisheries. Husband Matthew, a neonatal physician in Silver Spring, Md., also has a history of volunteering.

The family traveled to Montana in August and participated in a number of projects on the reservation. They painted high school bleachers, cleaned up a field area, planted tree seedlings, taught in a preschool and volunteered at a nursing home.

Eldest daughter Alyssa, then 14, helped prepare meals at the nursing home and was involved in a building construction project. Greg, 11, and Sonia, 8, painted and planted 1,000

seedlings at the park, which had suffered a massive forest fire that year, and played with other kids in the reservation's Head Start program.

Mom and Dad did a little bit of everything.

Suzanne says it was nonstop activity and full eight-hour workdays.

For fun, the family attended a traditional pow-wow and sweat lodge, and swam and boated on lower St. Mary Lake. The Picards had no shortage of bonding time; they ate and slept together in family accommodations.

Looking back, Suzanne says that they had a wonderful time and that she was especially proud of her kids. "They worked harder than some adults on the trip," she says.

The experience certainly had an impact on their oldest. Last year, Alyssa earned a Maryland Governor's volunteer service award for her many hours of service, including 500 hours for Habitat for Humanity. She's since been accepted at both Yale and Harvard. ■

## Garden Hose Fittings & Accessories



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# The GAME of the STICK



TODAY'S FAST  
MOVING SPORT WAS  
FIRST PLAYED BY  
NATIVE TRIBESMEN  
TO RESOLVE CON-  
FLICTS AND STAY FIT  
FOR BATTLE.

BY EUGENE FINERMAN



George Catlin's 1846-1859 painting, *An Indian Ball-Play*, depicts Plains Indians playing lacrosse.

**W**e know lacrosse as the other Canadian sport, played when it is too warm for hockey. Yet, history has a much higher regard for the game. Lacrosse was the national sport of America—before there was an America.

Before the European colonization, the continent was populated by hundreds of nations and tribes. The Chinook of the Pacific Northwest and the Choctaw along the southeastern Atlantic were unaware of each other and spoke distinctly different languages. Yet both played lacrosse. So did most of the native peoples. The same game was known by different names. Some tribes referred to it as “stick ball.” Others called it “Little Brother of War.” One tribe among the

Iroquois nation knew it as baggataway, meaning “they bump hips.”

Like today’s players, the tribesmen wielded a stick to catch, carry or hurl the ball. In general appearance, the stick has not greatly changed in seven centuries. It resembled a shepherd’s crook, with a net at the curled end of the stick. The ball varied, though, and could be a stone, wood or hair-stuffed deer-skin. However, the greatest difference was the dimension of the original game. Whereas today we pit teams of 10 players against each other, the competing tribes would have as many as 1,000 players on each side. The game would last from sunrise to sunset, and might continue for several days. Using the sticks to flail as well as catch, the winning tribe was

determined by the fewest casualties as well as the most goals. The game was indeed the “Little Brother of War,” and often used to resolve conflicts. Even without the threat of a war, many tribes used the game for martial training. Yet, for all its rowdy violence, the game was regarded with reverence. Some tribal lore attributed the game’s origins as a gift from the Gods. Shamans would schedule and referee the matches.

Ironically, the first European to describe the game deplored it for both the violence and paganism. He was Jean de Brebeuf (1593-1649), a French missionary to the Hurons. Writing in his journal, the Jesuit referred to “le jeu de la crosse”—the game of the stick. The French word for stick became our name for the sport: La Crosse. Brebeuf would become a saint, but not the patron of sports fans. La Crosse became quite popular among the colonists of New France, as Canada was then known. By the mid-18th century, New France also included the region we know as the Midwest (where today’s states derived from L’Illinois and

Revolutionary War ensued and the United States of America was born. But Britain held on to Canada and it became a haven for those who had supported the Crown during the American Revolution. Among the dispossessed allies of Britain was the Mohawk tribe. Wanting a reliable and tough supporter in a strategically important region, Britain granted the Mohawks land in Southern Quebec and Eastern Ontario. There, they could be a useful bulwark against future American aggression and a damper on French unrest. La Crosse kept the Mohawks fit and martial, and indeed they protected Canada during the War of 1812.

As the years passed and so did the American threat, the Mohawks lost their military purpose. Now they played La Crosse to retain their cultural identity against the diluting and assimilating encroachments of modern society. Their Canadian neighbors may not have realized the game’s sociological role but they did appreciate it as an engaging sport. People were willing to pay to see La Crosse. In 1834, a Mohawk team had an exhi-

## IRONICALLY, THE FIRST EUROPEAN TO DESCRIBE THE GAME DEPLORED IT FOR BOTH THE VIOLENCE AND PAGANISM.

Ouiconsin) and the entire Mississippi Valley, all the way to Louisiana. Yet, in this vast region, France had only 100,000 colonists. Its rival Britain commanded a smaller empire, 13 colonies constricted between the Atlantic and the Appalachian Mountains, but those colonies had a population of 2 million—restless to expand into French territory.

War was inevitable, and with the advantages in numbers and the world’s best navy, Britain won a new empire. That victory, however, proved costly. Those 13 British colonies so eager for French territory resented the taxes for that war. The

bitution match in Montreal. Of course, some spectators wanted to be players. By 1842, they had established in Montreal the first Lacrosse Club.

Since most native tribes played lacrosse, Americans also were somewhat familiar with the sport. In 1805, while surveying the Great Lakes region, an Army expedition saw Winnebago tribesmen playing. Zebulon Pike, the expedition’s commander, named the site for the game; and it is still known as La Crosse, Wisconsin. Today, we have George Catlin’s pictures and sketches of the Choctaw tribe playing lacrosse. In his studies of the Native American,

Catlin had visited the Choctaws in the early 1830s when they still lived in the Southeastern United States. Sadly, shortly after his visit, the



William George Beers, above, is considered “The Father of Modern Lacrosse.” The Montreal Lacrosse Club, 1867, top right. Now a popular collegiate sport, lacrosse has caught on with women—including Stanford University’s Lauren Schmidt.

tribe was expelled from their ancestral homes and forcibly relocated to the Oklahoma territory. The Americans tended to regard the “Indian” as an obstacle and enemy, and they dismissed lacrosse as just a game for “savages.” By the time that lacrosse was reinvented as a refined, civilized sport, the American public was already passionately distracted by a radically altered version of cricket: baseball.

In the 1870s, lacrosse had become a gentlemen’s game, reflecting the highest standards of Victorian sportsmanship. This remarkable transformation was the work and crusade of William George Beers, “The Father of Modern Lacrosse.” As a Montreal



Beers established the Canadian National Lacrosse Foundation in 1867. It—meaning Beers—would set the standards for the game. Lacrosse would be played with uniform equipment. Sticks would be the same length and a rubber ball would replace the stuffed deerskin. There would be a limited number of players on a team. Games now had time limits. The playing field had to meet exact standards for length and width; the size and placement of the goal nets was specific. Finally, players had to observe a far more confining conduct. Lacrosse was no longer a little war or a big brawl: no more slugging, butting or kicking—and the stick was not a weapon. Lacrosse would still be a fast-paced, rugged sport, but now it would be respectable.

In hindsight, Beers might seem



teenager, Beers (1843-1900) had played lacrosse when it was still the rowdy melee of the native tribes. That game had no set rules; prior to each match the teams would agree to whatever rules they wanted. The young Beers evidently enjoyed the anarchy and the ensuing injuries may well have inspired him to be a dentist; however, he also believed that the game should be elevated by a civilizing code of conduct.

like a Victorian prig but he chiefly was motivated by patriotism. The same year—1867—Canada had achieved the status of a British Dominion. While its foreign policy was still decided in London, Canada now determined and administered its own domestic policies. For all practical purposes, Canadians were no longer British subjects but citizens of their own Canada. Beers saw lacrosse as the quintessence of

Canada, with its New World vigor refined by European civilization. He promoted lacrosse as “the unifying symbol for the emerging Canadian nationality.” In 1869, he published his manifesto and codification in, *Lacrosse, The National Game of Canada*. (The Canadian Parliament would eventually concur in 1994.)

Beers also served as lacrosse’s ambassador to the world. In 1876, he organized a team of Canadian and Native Americans to play exhibition matches in the major cities of Great Britain. Of course, the highest measure of Victorian respectability was the presence of Queen Victoria herself. She expressed her enjoyment (“the game was pretty to watch”), and so conferred on lacrosse its suitability for genteel women as well as men. In 1928 and 1932, the game earned a berth at the Olympics as a demonstration sport. In the United States, playoffs were held to determine which team would compete; both times, the Blue Jays of Johns Hopkins University earned the coveted spot. (The U.S. earned a three-way tie with Canada and Great Britain in 1928, and bested Canada two games to one in 1932.)

Today, the sport that had its origins in North America is rapidly gaining popularity around the world. The 2010 World Lacrosse Championship, sponsored by the Federation of International Lacrosse and held in Manchester, England, drew teams from 29 nations. Lacrosse has also caught on with the ladies. According to the NCAA, there are currently 349 women’s collegiate teams. If, as Beers promised, that lacrosse taught a young gentleman “confidence and pluck,” then it obviously offers the same benefits to coeds. And the shamans and braves who originated lacrosse might well have attested to the same virtues of the game. Whether for tribe, nation or alumni association, lacrosse continues to instill a rousing sense of pride and identity. ■

# Trickier Than it Looks

Proper hydrostatic testing is vital for safe hose assembly

BY PHIL KIMBLE



**Most of us have tried** to do something that at first glance seemed easy. Assembling a child's toy, no problem. Solving Rubik's cube, piece of cake. Testing an industrial hose assembly, child's play—or so some think. When something appears quick and easy, more times than not, it usually turns out to be anything but.

When the two shop guys at one industrial hose distributor got the “build sheet” to make an assembly, there was one line item on it they had not seen before: “hydro test.” The guys were not happy about making this assembly because of its size: 10 inches. Getting the custom-made flanged fittings inserted and the clamps installed was not going to be an easy task. Even though they had never hydrostatically tested a hose assembly before, how hard could that be? Cap off one end, fill it with water, cap off the other end,

pressurize it, done! Compared to making the assembly, the hydro test would be a breeze.

The guys set about working their plan. They filled the hose with water, then laid it out in the parking lot. They connected an air line from the compressor to a valve they installed on one flange. Because the hose had “150 PSI WP” in the lay-line, they figured that was to be their test pressure, which was perfect since their air compressor put out 150 psi. Just as a precaution, they placed a forklift at each end of the assembly. With the fittings and flanges weighing about 100 lbs. apiece, if they came out, how far could they go? And besides, it was only 150 psi!

With the sound of canon fire, both fittings simultaneously ejected less than a minute after the air valve was opened. The end with the valve struck the forks on the lift, splitting them both and

bending them back. It then careened about 40 feet across the parking lot, taking what was left of the air hose with it. Somehow missing all the vehicles, it came to rest in a ditch next to the road. The other end glanced off the forks, then traveled up and struck and bent the hydraulic cylinder that raises and lowers the forks. It continued airborne about 30 feet, landing on the roof of a coworker's car, doing considerable damage.

Hydrostatically testing an industrial hose assembly is a vital part of ensuring the assembly will perform satisfactorily when placed in service. When done properly by trained technicians, hydrostatic testing can be performed safely even if the assembly does not remain intact after it has been pressurized. Air or other compressible products should never be used to pressurize an assembly. With few exceptions, water is to be used as the test medium. Vent one end to bleed off any remaining air and pump additional water into the assembly to increase internal pressure. A typical test will consist of increasing the pressure to 150 percent of the assembly working pressure and holding it for five minutes. The assembly working pressure is the lowest pressure rating of either the hose or couplings.

If there is ever a question about any facet of building or testing an assembly, contact the hose or coupling manufacturer for guidance. Failing to do so can have costly consequences. ●

# THE DIXON DRILLER

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## MARCH 2011

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### TRIVIA Did you know that...

**The temperature** on planet Mercury varies so extremely that it will rise up to 806°F during the day and drop as low as -220°F at night.

**A Palindrome Number** is a number that reads the same backward and forward, e.g. 13431.

**The largest known star** Canis Majoris is so big that if our Sun were a ball 117 cm (46 in) wide, Canis Majoris would be 2.25 kilometers (1.3 miles) wide.

**1 inch** (25 mm) of rainwater is equivalent to 15 inches (381 mm) of dry, powdery snow.

**The Methuselah** (Great Basin Bristlecone Pine) tree in California, USA, is the oldest living organism (4,800 years old) known today.

**The metal** with the highest melting point is tungsten, at 3410°C (6170°F).

**The little Alaskan Wood Frog** is capable of reviving itself back to normal life after staying completely frozen for months, during which its heart, brain and other organs stop functioning.

**Despite being** closest to the sun, Mercury is not the hottest planet. The hottest planet is Venus (at 864°F).

**Gallium** is a metal that melts on the palm of the hand, due to its low melting point (85.57°F).

**You can remember** the value of Pi (3.1415926) by counting each word's letters in, "May I have a large container of coffee?"

1 x 8 + 1 = 9

12 x 8 + 2 = 98

123 x 8 + 3 = 987

1234 x 8 + 4 = 9876

and so on.

(<http://www.sciensational.com>)

### ON THE LIGHTER SIDE

**Q:** Why does a dog stay in a shadow?

**A:** Because it doesn't want to be a hotdog.

**Q:** What do you call a cow during an earthquake?

**A:** A milk shake

**Q:** Why do seagulls fly over the sea?

**A:** Because if they flew over the bay they'd be bagels!

**Teacher:** Name two days of the week that start with "T."

**Pupil:** Today and Tomorrow.

**The teacher said** to Danny: "Why are you on the floor?"

Danny said: "Because you said to do this math problem without tables."

**What did one math book** say to the other math book?

"I don't know about you man, but I got a lot of problems!"

**A man told his doctor** he wasn't able to do all the things around the house like he used to. When the examination was complete, he said "Now Doc, tell me in plain English what is wrong with me."

"Well, in plain English," the doctor replied, "you're just lazy."

"Okay," said the man. "Now give me the medical term so I can tell my wife."

**This couple boards a jetliner** for a trip to New York. The jetliner gets full of passengers and they are ready to go, but they notice that there are no attendants or pilots. The door closes and the jetliner starts taxiing down the taxiway toward the runway and starts to take off. As they are airborne, the intercom says,

"Welcome to Flight 1313, non-stop to New York. As you can see, there are no attendants and/or pilots. This aircraft is totally computerized. So sit back and enjoy the flight because there is nothing that can go wrong, go wrong, go wrong, go wrong ..."

(<http://www.funnyandjokes.com>)

### Dates in History

**1953**

On March 11th, an American B-47 accidentally dropped a nuclear bomb on South Carolina. The bomb didn't go off due to six safety catches.

**1991**

On March 15th, Germany formally regained complete independence after the four post-World War II occupying powers (France, United Kingdom, United States and Soviet Union) relinquished all remaining rights.

**1999**

On March 25th, Enron energy traders allegedly routed 2,900 megawatts of electricity, enough to light up a midsize city, destined to California to Silver Peak, Nevada, population 200.

**2007**

On March 4th, during the Estonian parliamentary election, approximately 30,000 voters took advantage of electronic voting in Estonia—the world's first nationwide voting in which part of the vote casting was allowed in the form of remote electronic voting via the Internet.

(<http://www.history.com>)

### PRODUCT SPOTLIGHT

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peratures, high pressure, or other unusual or questionable operating conditions, consult your Dixon Representative or call the Dixon Factory at 800-355-1991.



## The Right Fit

Cut costs and claims, and increase productivity,  
through on-the-job health efforts

BY SARAH ACHENBACH

**David M. Hatrel** knows it takes plenty of muscle to make a safer workplace.

As a physical therapist and president and CEO of Health Connections, the company he founded in 2005, Hatrel regularly consults with companies across all industry segments—from chemical plants and automotive repair shops to oil and gas companies and hospitals.

Hatrel notes that musculoskeletal injuries account for 40 percent of all workers' compensation lost time claims. So his approach to workplace safety is based on identifying risk and ensuring musculoskeletal health and proper fitness levels for the job. He spends time traveling to companies all over the United States—including Dixon—to create programs aimed at reducing workplace injuries, workers' compensation claims and overall musculoskeletal claims. Such efforts also increase productivity and, most importantly, create healthier employees in a cost-effective manner, he points out.

Though workplace injuries have been trending down over the past decade in almost every industry, the cost is trending up because of the severity of injuries. What's to blame? "We cannot ignore that the health of the



employee is directly related to injuries," Hatrel says, citing a 2007 Duke Medical Center study that found that workers with a Body Mass Index (BMI) greater than 30 (classified as obese) filed twice the number of workers' compensation claims as those with a BMI in the recommended range. Obese employees' medical costs were seven times higher, and they lost a staggering 13 times more days from work.

Clearly then, helping employees stay healthy is paramount to workplace safety. Hatrel's tips go way beyond getting the doughnuts out of the break room and are easily adapted—whether for an assembly line or administrative office.

### **Hire Those Who Can Pull Their Weight**

"The most important thing employers can do is know the physical demands of each job," says Hatrel, who is a doctoral candidate in physical therapy at the

University of St. Augustine for Health Sciences in Florida. Hatrel measures the physical tasks required for various jobs, then designs a pre-hire functional screen to measure how well a candidate can do the required work. Those who can't make the cut aren't hired. He recently designed such a screening system with a nursing home of 120 employees that had a 70 percent turnover rate in certified nursing assistants. Lost productivity due to injury came to \$175,000 a year.

"Over the next two calendar years, 50 percent of the people we tested [pre-hire] could not pass and were not hired," he reports. "Turnover went down to less than 20 percent, and they only had one reported injury, with no lost time."

Concludes Hatrel: "If you only hire people physically capable of doing the work, you can drastically cut the number of injuries."



### A Workstation that Works

Repetitive strain injuries abound if workers don't have the right fit with their technological tools and environments. For smaller companies, Hatrel recommends an ergonomic evaluation of each employee's workstation. Larger employers may find it more cost-effective to train a group of employees on ergonomic principles and risk factors (force, repetition, awkward posture, vibration and contact stress). Once a risk factor is identified, "engineer it out," Hatrel urges.

For example, most plants typically store their heaviest items on the floor. "But the heaviest items should be placed mid-thigh or mid-chest, where humans are the strongest," he says.

### Create a Job-Specific Conditioning Program

Hatrel puts employees through a screening similar to that for new hires, with the addition of several standard-

ized fitness tests, then suggests a customized conditioning plan. "You need to tailor an exercise program to what the employee will actually do," he explains. "Some employees can work out on-site. Others can't."

He urges employers to be realistic. "Don't try to create a Cadillac program from day one. Offer fitness-for-work testing on-site and design exercise instruction principally as home-based exercises. As you see more and more people getting involved, move to the next level."

### Try a Little SAS

That's stretching and strengthening. Hatrel suggests identifying "global" risk factors then designing a stretch and strengthening exercise for each one. Consider the worker who spends all day at a grinder, with rounded shoulders and hunched back. His flexibility is reduced and results in weakness in the back of his shoulders, which can lead to

rotator cuff injuries and claims. Awkward postures can mean frequent breaks to ease sore muscles, absenteeism and high turnover.

Hatrel's Rx: Train several SAS leaders throughout the plant to lead small groups in exercising each morning. Some companies (including Dixon) even opt to offer exercise equipment on-site—and bring in a part-time exercise specialist.

### Butt Out

Smoking drastically reduces the amount of oxygen a cell receives. If an employee has poor lumbar strength, lighting up only makes it worse. "Ten minutes of smoking cuts oxygen levels in the disks of the low back by 50 percent for up to two hours," says Hatrel. "This is akin to putting a plastic bag over your head, pricking a pinhole in it, and then trying to run a marathon." Offering smoking cessation programs at work can have an enormous payoff. ■

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## A Fruitful Combination

The modern harvester-thresher, or combine, dramatically changed the face of farming

BY LISA DE NIKE

We denizens of the modern age often bemoan the “backbreaking” labor required when we have to shovel snow from our sidewalks and driveways, or rid our yards of piles of autumn leaves.

But that toil is nothing compared with the manual labor that was done by farmworkers at harvest time for tens of thousands of years—from the advent of organized farming until the early 1830s, when the first modern “harvester-thresher” (also known as a “combine harvester”) was introduced on a farm in Virginia.

So called because it brings together three operations (reaping, binding and threshing) into one machine, the modern “combine” rapidly harvests oats, barley, wheat, rye, corn, flax and soybeans, leaving behind the stems and leaves of the crop as waste straw, which often is chopped and baled for use as livestock bedding.

Today’s combines, outfitted with everything from onboard stereo systems and air-conditioning units, to electronics to measure threshing efficiency, to removable heads designed to harvest specific crops, are a far cry from the first machines, which appeared in the United Kingdom and United States in the late 18th and early 19th centuries.

In 1799, an Englishman named Joseph Boyce took out a patent for a “reaping machine,” but few details seem to be known about it. However, in

the early 1820s, Patrick Bell, a Church of Scotland minister who worked on his father’s farm, designed a two-wheeled mechanical “reaper.” It comprised a revolving 12-vane reel that pulled the plants over a cutting knife fashioned from triangular revolving blades over fixed triangular blades. Horses or oxen pushed this device, for which Bell never sought a patent because, as a man of God, he wanted to freely share his discovery with the world.

On this side of the proverbial pond was Cyrus Hall McCormick, of Virginia, who at the age of 22 experimented with his self-designed reaper on a neighbor’s farm in 1831. Unfortunately, the McCormick reaper was so noisy that it frightened the horses that had to pull it, requiring one worker to walk beside the animals to calm them. Not discouraged, McCormick continued to tinker with his design, improving it to the point that, by 1841, the machines became very popular in the Midwest. (In the 1840s, McCormick moved to Chicago to go into the farm machinery business.)

Historians say that the McCormick reaper drastically reduced the cost of labor needed to harvest crops, allowing



ever-wider swaths of land to be cultivated. By the mid-1860s, 4,000 McCormick reapers were being sold every year and, seeing money to be made, business mogul J. P. Morgan bought the McCormick Harvesting Co. He merged it with other, smaller companies to form International Harvester Co in 1902.

Though some late 19th-century harvesters were steam powered, most continued to rely on farm animals. But by 1905, a gasoline-driven combustion engine began to appear on some models. Still, even in the 1930s, it wasn’t unusual to see teams of horses still pulling reaping machines, while others were pulled by tractors.

From the 1950s on, advances in engineering and technology rapidly improved the combine harvester’s design. Modern combine harvesters can cut crops in swaths of 30 feet in width as they harvest up to 40 tons of grain per hour—generations removed from McCormick’s simple machine. ■



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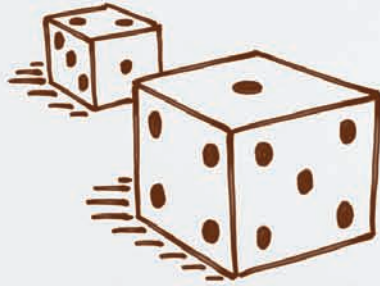


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