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# BOSS

CONNECTING TO INDUSTRY

## Damage Control

Hurricanes bring punishing winds and deadly surges — but there are steps you can take to protect life, limb and property.

SUMMER 2012  
ASIA/PACIFIC — WINTER 2012



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SUMMER 2012  
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## DON'T RUN OUT OF TOMORROWS

Our cover story this issue, "Damage Control," looks at the widespread destruction that hurricanes can wreak—while also describing important steps you can take to mitigate

such damage, saving lives and money. Such preparation involves careful planning. It also requires follow through. Perhaps we could all take a lesson from this story.

Many individuals and businesses do very little planning for the future, for a variety of reasons. For one thing, it's no fun to contemplate the idea that "bad" things—such as sickness or disaster—could be waiting just around the corner. Also, it's very easy to get caught up in just getting through what needs to be accomplished today. As a result, many who do make plans fail to follow through.

Business owners think about and some even plan to open a new location, hire that needed sales person, give that key person a raise, but...

Individuals think about or plan to lose weight, go back to school, spend more time with family, or coach a Little League team but...

The result? Your competition hires away your key employee, or is marketing an idea you were thinking about, or a co-worker snags the job you wanted since he was better prepared. Or you develop health problems, lose your job, or watch helplessly as your children start hanging out with the wrong group of kids.

Don't run out of tomorrows.

Plan, then execute. It is how winners operate.

Thanks for reading,

*Dick Goodall*

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SUMMER 2012

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Editorial & Design

**Clipper City Custom Media**

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**Jeni Mann**

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Please submit address changes and requests for new subscriptions to:

**Clipper City Custom Media**

**Attn: Adrienne Gieszl**

**11459 Cronhill Drive, Suite A-B**

**Owings Mills, MD 21117**

**888-257-8558**

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**Dixon Valve & Coupling Company**

**800 High St.**

**Chestertown, MD 21620**

**877-963-4966**

**Fax: 800-283-4966**

**www.dixonvalve.com**

Email questions or comments about BOSS to: [boss@dixonvalve.com](mailto:boss@dixonvalve.com)

# Achieving Happiness

> Ask struggling adolescents why they get high on drugs or alcohol or seek sex without intimacy or commitment and they're likely to tell you they just want to be happy. Ask young professionals why they're so driven to make money and they'll talk about all the things they'd get if they were rich—things that will make them happy. Ask adults why they had affairs or left their families and you'll hear it again: "I just want to be happy." So why aren't more people happy?

One problem is unrealistic expectations. Some people think of happiness as an unbroken series of

pleasurable emotions; they hope to feel good all the time. Others expect a much more intense or lasting feeling of joy when they achieve a desired goal. As a result, when getting what they want doesn't produce the feelings they expected, they fall into the kind of despondency conveyed in the famous Peggy Lee song: "Is That All There Is?"

There's great danger in confusing a sustainable state of happiness with fleeting sensations of pleasure and fun. Those who make pleasure-seeking the focus of their lives soon find themselves needing new and different sources of pleasure. It's

like a drug addict who needs continually higher doses to get high.

Happiness is a less intense but more durable feeling of well-being. It's not a continuous state. No one is happy all the time. Though we may experience extraordinary moments of joy or despair, happiness is a kind of emotional resting place of quiet satisfaction with one's life. The art of living a happy life is a balance between getting what you want and learning to want what you get. ●

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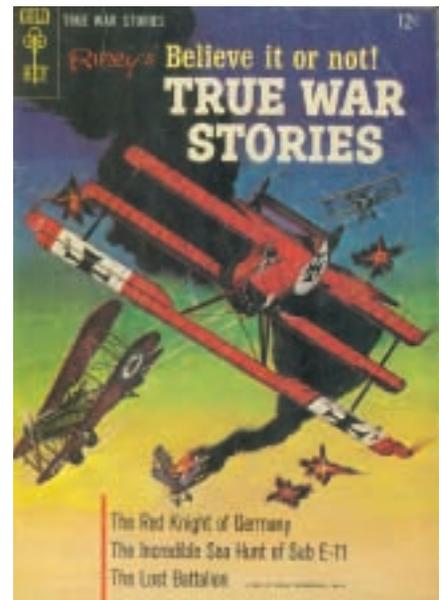
# Believe it or Not!

For 52 years, an obscure researcher tirelessly dug up the bizarre facts that put 'Ripley's' on the map

> If ghosts exist, Norbert Pearlroth's might likely haunt the reading room of the New York Public Library. It is there that he spent 52 years digging for odd facts and bizarre trivia to publish in Ripley's Believe it or Not!, the popular newspaper panel series syndicated in publications around the world.

Born in Austria on May 7, 1893, Pearlroth originally intended to become a lawyer. But his studies in Poland were

interrupted by the outbreak of World War I. And so in 1920 he moved to America, where he settled in Brooklyn, N.Y., and took a job working in a bank. Then, in 1923, he learned from a friend that Robert LeRoy Ripley—who was already having success as a cartoonist and travel journalist—was looking for a linguist who could read foreign newspapers and compile information for his syndicated Believe it or Not!



cartoon series in the now-defunct *New York Globe*.

Pearlroth, who spoke 14 languages, got the job.

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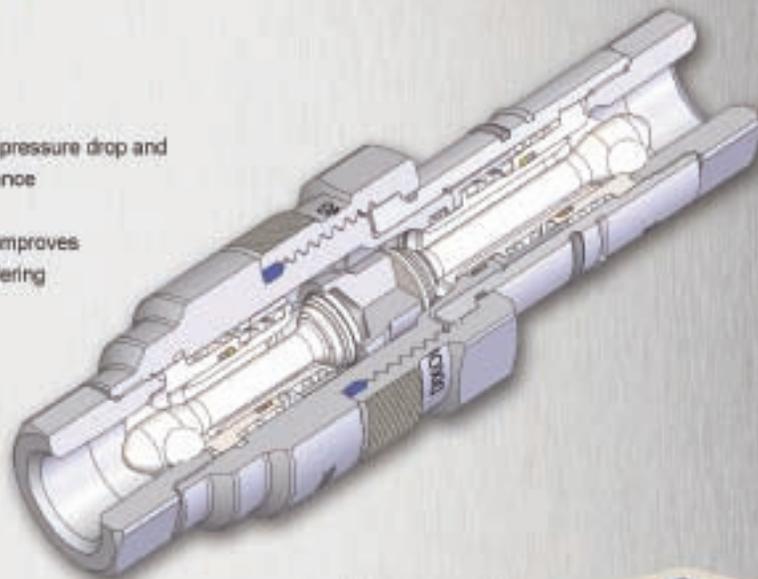
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For 10 hours a day, six days a week, for 52 consecutive years, Pearlroth pored over books, constantly on a quest for the kinds of oddities that contributed to Ripley's success as a collector and exhibitor of all things bizarre. "He would spend a great deal of time with the card catalog and then sit in the reading room with these books for what seemed like days," Catherine Marquard, a supervising librarian at the New York City Library, told *The New York Times*.

Much of Ripley's brand—including his famous insistence that he could provide evidence for all of his far-fetched facts and unlikely exhibits—was tied up in Pearlroth's indefatigable research. Staff at the library estimated that Pearlroth examined 7,000 books each year—and more than 350,000 during his career. His efforts more than paid off, with Ripley's publication garnering some 80 million

readers around the world.

"Everyone has always believed that all of this information was found [by] wandering the world," Pearlroth's son Arthur told *The New York Times*, in his father's obituary. "But it was really found on 42nd Street and Fifth Avenue at the Main Library."

But even as the Ripley brand grew into a multimillion-dollar industry—with books, museums and radio and television features—Pearlroth remained comparatively low-key. Married for more than 50 years, Pearlroth took the subway every day from Brooklyn to his Manhattan office, where he worked until noon answering the thousands of letters that arrived weekly. After a quick 30-minute lunch, it was off to the New York Public Library, where he often worked until close to 10 p.m. He never missed his Friday deadline and notoriously worked weeks ahead of schedule.

After Ripley's death from a heart attack in 1949, Believe it or Not! was purchased by King Features Syndicate, whose editors required that Pearlroth submit 24 items every week. On the side, he also wrote a weekly newspaper column, "Your Name," about the origins of Jewish names, for the *Jewish Post of New York*.

Although Pearlroth never missed a deadline, King Features replaced him in 1975. He continued to contribute as a freelancer, despite receiving no pension or royalties from the many Ripley collections and reprints that sold in the millions. (Ripley himself left Pearlroth a bequest of \$5,000 and paid for his son's schooling.)

On April 25, 1983, the man who himself could have been the subject of a "Believe it or Not!" for his unflagging work ethic and tireless pursuit of the bizarre, died of heart and kidney disease. He was 90 years old. ■

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# Damage Control

BY MARIA BLACKBURN



In the Irish Bayou of New Orleans after Hurricane Katrina.

# With fearsome fury, hurricanes bring punishing winds and deadly storm surges—but there are relatively easy steps you can take to protect life, limb and property.

**W**HEN THE STORM FORMED somewhere off the coast of the Bahamas, it was just another tropical depression—one of 100 or so created around the world each year as a mass of thunderstorms with a cyclonic wind circulation at its core. Many of these depressions never develop into significant tropical storms.

This one was different.

Fueled by warm ocean water, its winds increased and it gained power quickly. By the time Hurricane Katrina slammed into the Gulf Coast on Aug. 29, 2005, it was a force to be reckoned with. Among the communities in its path was the small town of Diamondhead, Miss. Here, tornadoes and winds of 135 miles per hour howled through the streets, uprooting trees and sending some more than 20 feet in the air. The gusts tore off roofs and exposed homes and businesses to hours of soaking, devastating rain. On the south side of



Diamondhead, an unprecedented 26-foot storm surge pushed the waters of Bay St. Louis over its banks, flooding streets, destroying more than 350 homes and leaving survivors clinging to rooftops and praying for rescue.

When the rain and wind ceased and the flood-



**In the wake of Hurricane Katrina's destruction, Raymond Sheehy's storm-resistant house escaped virtually unscathed.**

waters receded, the damage was colossal. Katrina killed some 1,836 people and caused an estimated \$81 billion in property damage, making it the costliest disaster in U.S. history. In Diamondhead, half of the town's 5,000 homes were destroyed, leaving thousands homeless. The tidy, planned community with its quaint Hawaiian street names looked as if it had been whirled through a blender.

Raymond Sheehy was one of the lucky ones. The 82-year-old not only survived the hurricane, but his home, located only seven miles from the Gulf Coast, was virtually untouched. However, he would be the first to say that luck didn't protect him from the ravages of Hurricane Katrina.

Careful planning did.

Hurricane protection figured into nearly every aspect of the 3,000-square-foot single-story house that Sheehy built in 1995. To avoid flooding caused by a storm surge, the U.S. Air Force retiree situated the house on a hill 70 feet above sea level. Aware that hurricane winds usually blew from the southeast, he placed few windows on that side of the house and flanked all of the windows with manual wooden "hurricane" shutters that could be closed and latched before a storm. Sheehy cleared all of the pine trees from his land because of their tendency to

uproot during a storm. And to ensure that his roof would protect him and his wife, Pat, from the elements, he exceeded standard mitigation practices by using extra trussing to tie the roof and the walls together; he also covered the roof surface underneath the shingles with extra-thick plywood.

When Hurricane Katrina swept through town, the house didn't move an inch. In fact, the only damage to Sheehy's home occurred when a neighbor's pine tree toppled over onto his roof and damaged a small section of an aluminum ridge vent.

"When you walk around disasters like I've done, you don't want to live it," says Sheehy, who witnessed Atlantic hurricanes during his childhood in New Orleans, and South Pacific typhoons while working as a communications officer for the Federal Emergency Management Agency (FEMA). "People who have undergone hurricanes and typhoons have a tendency to be more cautious. The newer people who move here don't tend to think about it. I see them building houses, especially friends of mine, and I say, 'Why don't you do this to protect your home in a hurricane?' They tell me, 'I'm not worried about it.'"

Sheehy's response is always the same. "When the time comes," he says, "you're going to worry about it."

### **PEOPLE WHO LIVE ON THE**

North Atlantic Ocean and Eastern Pacific Ocean call them hurricanes. Those on the Western Pacific Ocean coasts call the storms "typhoons." And in the Southwest Indian Ocean, these low-pressure systems are known as "cyclones." Whatever one calls them, the fact remains that these intensely destructive storms have been devastating coasts worldwide for centuries.

More than 20,000 people died when the Great Hurricane of 1780, the deadliest Atlantic hurricane on record, plowed through the Lesser Antilles in October 1780. Specifics on the hurricane's strength are not known, but the highest winds on Barbados during the storm are estimated to have exceeded 200 mph; the furious gales stripped the bark from trees before downing every tree and destroying every house on the island. A 25-foot storm surge on Martinique caused 9,000 deaths. Just offshore, about 4,000 French soldiers drowned when their fleet of 40 ships from the American Revolutionary War capsized. Other areas affected by the hurricane included Puerto Rico, Hispaniola (the Dominican Republic and Haiti) and Bermuda.

The Galveston Hurricane of 1900 was a Category 4 storm (see sidebar) that devastated nearly all of the buildings and bridges of the Texas city,

# 10 OF THE WORST HURRICANES IN WORLD HISTORY

Here's a brief look at the 10 worst hurricanes, typhoons and cyclones recorded worldwide over the last 300 years:

## 1. 1922 Swatow Typhoon, China

Six days after the typhoon was spotted near the Caroline Islands in the Pacific Ocean, it hit the Chinese city of Swatow on Aug. 2, 1922, with winds of 100 miles per hour and a tidal wave that swept over 50,000 people. One of the deadliest typhoons ever to hit the northern Pacific, it killed some 60,000 people.

## 2. 1882 Bombay Cyclone, India

This deadly storm, which began over the Arabian Sea as a result of a hurricane in progress, hit near Bombay, India, on June 6, 1882, and killed more than 100,000 people

## 3. The 1991 Bangladesh Cyclone, Bangladesh

On April 29, 1991, this powerful tropical cyclone struck the Chittagong district of southeastern Bangladesh with winds of around 155 mph. The storm forced a 20-foot storm surge inland, killing some 138,000 people and leaving as many as 10 million people homeless.

## 4. The Great Backerganj Cyclone of 1876, Bangladesh

Formed over the Bay of Bengal

on Oct. 27, 1876, this cyclone had a maximum wind speed of 136 mph and a surge of 45 feet. It killed about 200,000 people, half of whom died in the storm surge; the remainder succumbed to famine and disease following the storm.

## 5. Super Typhoon Nina, 1975, China

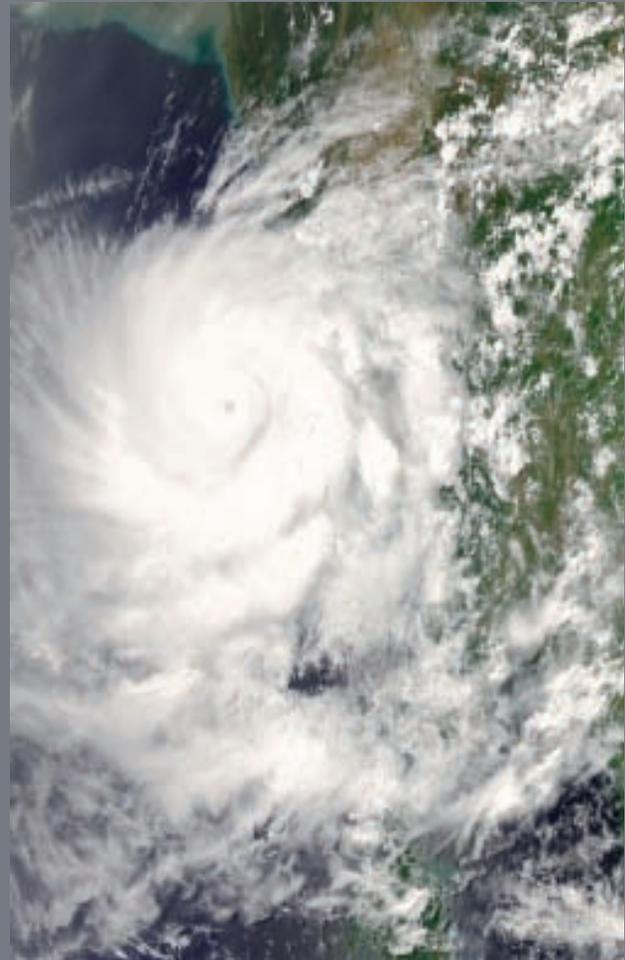
One of the largest recorded typhoons in history and the second deadliest hurricane in the Pacific, this August 1975 storm made landfall in Taiwan with winds of up to 155 mph. The storm weakened as it made its way to China and missed most of the major cities, but its heavy rainfall caused the collapse of 62 dams, killed more than 100,000 people and caused \$1.2 billion in damage.

## 6. 2008 Cyclone Nargis, Myanmar

The worst natural disaster in the recorded history of Burma, Cyclone Nargis developed over the Bay of Bengal and gathered strength to attain peak winds of 135 mph. The storm made landfall on May 2, 2008, killed more than 138,000 people and caused damages estimated at more than \$10 billion.

## 7. Calcutta Cyclone of 1737, India

On Oct. 7, 1737, this cyclone destroyed nearly all of the thatched buildings in this city and killed 3,000 of



Cyclone Nargis at landfall.

the city's inhabitants, according to one report. Other reports from merchant ships indicate that the disaster was in fact an earthquake and tidal surge, which destroyed 20,000 boats in the harbor and killed 300,000 people.

## 8. 1881 Haiphong Typhoon, Vietnam

The most powerful storm of the Pacific, this cyclone struck on Sept. 15, 1881, and killed 300,000 people in Vietnam and surrounding areas.

## 9. 1839 Coringa Cyclone, India

This storm made landfall with a 40-foot storm surge

that killed 300,000 people, destroyed more than 20,000 boats and flattened the city.

## 10. 1970 Bhola Cyclone, Bangladesh

The deadliest tropical cyclone ever recorded, Bhola struck Bangladesh and India's West Bengal in November 1970. A Category 3 hurricane with peak winds of 115 mph, it wiped out villages, destroyed crops and caused some 500,000 deaths, the majority from the 33-foot storm surge that flooded many of the islands of the Ganges River Delta.

SOURCES: Sciencerey, Weather Underground



COURTESY FEMA



JOCELYN AUGUSTINO/FEMA

Above left, a special construction technique called “continuous load path” uses hangers and hurricane straps to stabilize a structure in severe weather, like that caused by Hurricane Katrina, which brought members of the U.S. Coast Guard out into the flooded streets for search and rescue operations.

which is located only 8.7 feet above sea level. Winds of more than 120 mph and a 15-foot storm surge knocked buildings off their foundations and pounded them to bits. Some 8,000 people—20 percent of the island’s population—died in the storm, and more than 4,000 more succumbed when they were trapped under wreckage and could not be reached by rescuers.

In November 1970, the worst tropical storm in history, the Great Bhola Cyclone, struck the Ganges River Delta region of Bengal and East Pakistan and killed an estimated 500,000 people. It is believed that 90 percent of the population was aware of the cyclone before it made landfall—but only 1 percent sought refuge in fortified structures.

Each year an average of 11 tropical storms develop over the Atlantic Ocean. Lately that tally has been growing. The busiest hurricane season on record in the U.S. came in 2005, with 28 named storms and seven major hurricanes.

The resulting damages can be costly as well as destructive. In addition to punishing wind and rain, hurricanes also have tornadoes embedded in them; moreover, storm surges, which occur when winds push the sea into the

land, can cause devastating floods. The average annual damage from tornadoes, hurricanes and floods in the United States is \$11.4 billion, according to the National Oceanic and Atmospheric Administration.

During the last two decades, scientists have gained greater understanding about how hurricanes behave and that knowledge has drastically improved our ability to predict these acts of nature and fortify the property in their path. “We know more about the fury of hurricanes and how to protect ourselves from them,” says Sheehy.

For homeowners, preparing for surges is largely about building homes at high enough elevations to remain safe. But there are lots of other steps people can take to make their homes resistant to hurricane winds and rain. Such efforts can be as extensive as a specially constructed foundation or as minor as the type of nail used to attach a roof shingle, says Mike Rimoldi, a construction specialist with the non-profit Federal Alliance for Safe Homes. “Your house is only as strong as its weakest link,” he says.

### FOR SHEEHY, THE SPECIFICS

on his hurricane-resistant home came from a book published by FEMA called

*Home Builder’s Guide to Coastal Construction*. He had seen 750 houses built to the book’s mitigation specifications when he was deployed to American Samoa in the South Pacific by FEMA. He recalls being impressed when only one of these houses was damaged after a 1991 storm, with 225-mph winds, slammed the island.

When Sheehy handed the book to his contractor in Diamondhead at the start of the project, the builder glanced at it and told him, “We already do this.” Sheehy replied, “Not like this, you don’t.”

Sheehy’s home has three reinforced laminated beams along the ceiling to enhance structural integrity and the roof’s anchoring capacity. Traditionally, half-inch plywood is used to construct roofs, but Sheehy’s roof is built with three-quarter-inch plywood attached to trusses that are 16 inches apart, rather than the usual 20 inches. In addition, he built a reinforced safe room in the center of the house that he and his wife refer to as a “scaredy hole.” They use it as a place to store food and water, but in case of disaster the room has enough space for 12 people to safely wait out a storm.

When Katrina hit, residents in the area lost power for 21 days. Sheehy kept his diesel generator running and

never even had to turn off the air conditioning. In the days following the storm, his home sheltered not only a few neighbors, but several members of the state highway patrol. "There were some reports of looters so we were happy to have their patrol cars parked out front," he says.

For Sheehy, the extra safety measures added \$5,000 to the cost of building his \$128,000 home—a prudent investment, he says. "The biggest thing we have to do is to get people to understand that anything they can do will help," he says.

### HOMEOWNERS HAVE LONG

taken steps to protect their homes from hurricanes, but "best practices" have changed over time.

As a child growing up in Florida in the 1970s, Rimoldi remembers racing through his home during a hurricane, opening and closing windows at his mother's direction as part of an ill-conceived effort to equalize the pressure inside and outside of the house and prevent structural damage from wind gusts. The builder, who teaches hurricane mitigation classes to contractors, shudders when he thinks of it now. "We were placing ourselves at so much risk by opening those windows during a hurricane," says Rimoldi. His counsel today: Close all windows and doors, cover them with shutters, and stay away from them during a storm.

Statewide building codes—like the one that became effective in Florida in 2002 in response to the devastation wrought by Hurricane Andrew, and in North Carolina, South Carolina and Louisiana in recent years—have helped bring to the fore the best practices for building new structures. And new and improved building materials featuring the latest technology are constantly becoming available to builders. That's a good thing, Rimoldi says, because the stakes are high. "You don't have to have your house totally blown away to suffer a lot of damage," he says.

Consider this scenario: Take a typical ranch-style home located just in

from the coast, and expose it to a Category 1 hurricane with 74- to 95-mph winds. The wind pulls a few shingles off the roof or takes out a window, thereby causing a breach in the building envelope, the boundary separating the inside from the outside. For the next day or two, rain pours through the hole, drenching the insulation and walls, destroying furnishings and creating a potential mold problem that could require the homeowner to seek temporary housing for several months until the damage is repaired.

"It doesn't take a big hole in the roof or a lot of water to cause a lot of damage," Rimoldi explains. "If you've ever had a plumbing leak in your house, you know that one of those lines only has to run for a couple of hours and you have soaked furniture, flooring and drywall, and then you have to worry about mold."

**The average annual damage from tornadoes, hurricanes and floods in the United States is \$11.4 billion.**

To retrofit a home in preparation for a hurricane, Rimoldi suggests strengthening the building envelope. First, if you are in need of a new roof, make sure that you install an enhanced roof covering material that's tested and approved for your location, as well as the wind speed and pressure it will be exposed to. "It doesn't matter whether it's shingles or tile," he says, as long as it's code approved.

Next, it's important to strengthen the connection where the roof eaves meet the top of your walls by using specially made metal connectors that are much stronger than nails. The wind uplift in a roof can easily be two to three times the force of gravity. "Testing and field studies show that having that little piece of metal in there as an enhancement makes a big

difference," Rimoldi says.

Finally, cover all openings in the house—windows, doors, garage doors—to protect glass from breaking and doors from blowing in. "For windows, we stress that people use permanent shutters, the kind specifically made for windows, because when people put plywood up they don't always do it properly," he says. "If it gets blown off by wind, then you have a big sheet of plywood blowing through the neighborhood."

### FOR YEARS, SCIENTISTS USED

what they learned from surveying storm damage in the field to inform the best methods and products for hurricane protection. Now they can find more precise answers in the lab—thanks to full-scale testing of structures.

Seven years ago, Stephen P. Leatherman, professor and co-director of the Laboratory for Coastal Research at the International Hurricane Research Center, helped develop and build a storm simulator in Miami known as "The Wall of Wind"—the world's first full-strength hurricane machine. Using six 500-horsepower engines, the lab can produce winds of up to 120 mph. It has been used to test a variety of products and technologies and has generated some compelling data. "In a nutshell, we are gaining better understanding of how to keep a roof on," Leatherman says. "That's important because if you don't keep your roof on, everything is going to be lost."

Experiments using the simulator have shown that ring shank nails, which screw into wood, are more effective than smooth nails at keeping plywood secured to roofs. In addition, researchers have discovered that soffits, the area underneath the edge of a roof, need to be strengthened so they don't let in water during a storm. "Before we did our tests, a lot of people just thought soffits needed to be covered for cosmetic reasons," says Leatherman. "Instead of being covered, they need to act as more of a shield."

In October 2010, the Insurance Institute for Business & Home Safety (IBHS) opened a \$40 million state-of-the-art research center in Richburg,



COURTESY IBHS



A member of the Institute for Business & Home Safety stands before one of 105 test fans that generated winds of about 100 mph. Above right: While the house without fortification collapsed after high winds, the fortified home remained intact.

S.C., that takes the technology Leatherman helped develop to new heights. Funded entirely by the insurance industry, the center features a 105-fan wind tunnel capable of generating Category 3 winds of 130 mph—and a 21,000-square-foot chamber, large enough to test one- and two-story structures, with rain capacity equal to 8 inches per hour.

“We’ve never had the ability to take full-sized structures with all of the real materials—shingles, siding and so forth—in their full-sized configuration and test them under realistic wind conditions,” says the IBHS’ Timothy Reinhold, senior vice president and chief engineer. “What we are trying to create in the lab are real-life settings.”

For the next few years, IBHS is focusing on roofing and will be testing such products as roof covers, roof equipment for commercial buildings, secondary water barriers and flashing.

However, because all of the structures they will be testing will have walls, windows and doors, researchers also will have an opportunity to observe how these behave in hurricane conditions.

Already the scientists in the IBHS lab have made some interesting discoveries. While preparing a video to show the difference in how a hurricane-resistant structure and a non-mitigated

structure performed in high winds, Reinhold’s builders used current design specifications to strap together the second-story exterior walls with the second floor of the fortified structure. However, when both structures were exposed to 100-mph winds and their

## What we want to do is help analyze homes so that we can put the right amount of strength in the right places.

—Timothy Reinhold, IBHS chief engineer

front doors were opened, the fortified structure’s walls began expanding out like a balloon from the pressure, and it nearly blew away.

“We found that it only took an extra \$20 in strapping materials to secure the structure, but it made a big difference,” Reinhold says. This was a modification that wasn’t in any of the current design guides or building codes—something they never would have discovered without the lab.

“Looking at some of these systems issues is what we see as a real power of this facility,” he says. “What we want to

do is help people analyze homes so that we can put the right amount of strength in the right places.”

### SEVEN YEARS AFTER HURRICANE

Katrina came through Diamondhead, the small Gulf Coast town has mostly returned to normal. The debris has been cleared, trees have been replanted, and residents have rebuilt lost and damaged homes with stronger structures better suited to surviving wind, rains and flooding. People seem to have gotten the message that hurricane mitigation is important, Sheehy says. “If you go around Diamondhead now, I’d say 40 percent of us now have generators,” he says.

But despite the fact that the most destructive storm in U.S. history is now behind him, Sheehy isn’t about to let his guard down. Not long ago he replaced the original windows in his house with impact-resistant windows that can withstand the force of a 2-by-4 hurtling into them at a speed of 230 mph. And every other Sunday, he and his wife take turns running the generator for two hours just to make sure that it’s working.

There are hurricanes coming, and Sheehy just wants to be prepared. “We skated this year, but after a big storm you usually have a lull,” he says. “I think next year we are going to get hit.”



Looking southeast in the eye of Hurricane Emmy.

## Measuring Intensity

CATEGORY	SUSTAINED WINDS	POTENTIAL DAMAGE
<b>1 - Minimal</b>	74 to 95 mph	Damage primarily to shrubbery, trees, foliage and mobile homes. No real wind damage to other structures. Some damage to poorly constructed signs. Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.
<b>2 - Moderate</b>	96 to 110 mph	Considerable damage to shrubbery and tree foliage; some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roofing materials of buildings; some window and door damage. No major wind damage to buildings. Considerable damage could occur to piers. Marinas flooded. Small craft may be torn from moorings.
<b>3 - Extensive</b>	111 to 130 mph	Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some window and door damage. Some structural damage to small buildings. Mobile homes destroyed. Serious flooding at coast and many smaller structures near coast destroyed; larger structures near coast damaged by battering waves and floating debris.
<b>4 - Extreme</b>	131 to 155 mph	Many shrubs and trees blown down and most street signs damaged. Extensive damage to roofing materials, windows and doors. Complete failure of roofs on many small residences. Complete destruction of mobile homes. Major damage to lower floors of structures near shore, due to flooding and battering by waves and floating debris. Major erosion of beaches.
<b>5 - Catastrophic</b>	Greater than 155 mph	Shrubs and trees blown down; considerable damage to roofs of buildings and all signs damaged or destroyed. Very severe and extensive damage to windows and doors. Complete failure of roofs on many residences and industrial buildings. Extensive shattering of glass in windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction of mobile homes.

SOURCES: National Oceanic and Atmospheric Administration, National Weather Service, National Hurricane Center



David Gray and Henry Ford seated in the 1905 Ford Model N runabout at the back entrance of the Ford plant on Piquette Ave.

One-of-a-Kind

# Henry Ford

By perfecting the assembly line, he made cars available to all

BY LAUREN GLENN

# In this time

of economic downturn, much has been made of those companies and individuals who make millions, even billions, of dollars, but produce no tangible product or results. Then there are the issues of fair trade and outsourcing, with politicians and average citizens alike concerned with the loss of manufacturing jobs that were once the foundation of America's blue-collar middle class—many of which have been transferred overseas, where workers are willing to do the same amount of labor for considerably less money.

Indeed, today's industrial reality is a far cry from when Henry Ford first ventured into the world of engineering and manufacturing more than a century ago. From his early beginnings as a machinist and engineer, Ford envisioned a world where international trade, industry and manufacturing, if carefully developed and cultivated, could benefit the whole of society through high-quality goods produced by well-paid workers.

"Ford redefined the relationship between skill and compensation," says Bob Casey, curator of transportation for the Henry Ford Museum in Detroit. "The assembly line spread to all sorts of manufacturing operations, and they wound up paying higher wages to lower skilled people."

The influence of Ford—possibly the nation's most important industrialist—still permeates the industrial world today, 65 years after his death. Whether as a farmer, machinist, engineer, or finally as founder of Ford Motor Co., Ford, by all accounts, was dedicated to a belief that high-quality products could be affordable to all by being produced en masse.

## A Tinkerer

From the beginning, Henry Ford was a tinkerer, interested not only in making things, but in understanding how things—machines in particular—worked.

Born to William and Mary Ford on a farm just outside of Detroit, on July 30, 1863, Henry was the eldest of five children. Even as a young boy he enjoyed taking things apart and reassembling them—a fascination that continued into his teenage years, when he dismantled and reassembled a watch given to him by his father. Soon he was repairing the watches of his friends and family, which earned him a reputation as a watch repairman, and perhaps sparked his interest in manufacturing and his early career as a machinist.

In 1879, with little more than a grammar school education, Ford left his parents' home to work as an apprentice machinist in Detroit. Equipped with new knowledge, he returned home to the farm and

became a skilled operator of the family's Westinghouse portable steam engine. Ford was so skilled, in fact, that Westinghouse Electric and Manufacturing Corp. hired him to demonstrate and operate the engine on farms. On April 11, 1888, Ford married Clara Jane Bryant and started a family (the two had one child, Edsel), which he supported by farming and running a sawmill. Meanwhile, he also studied



**"A business that makes nothing but money is a poor business."**

bookkeeping at a business college in Detroit.

Although he disliked farming, Ford was fascinated by electricity and believed that machinery could eventually replace farm animals for labor. Armed with that conviction, he spent much of his free time tinkering and trying to build a better, lighter steam engine. "One man with a machine, which perhaps he himself has helped to build, will do in a day as much as five men now do with their

teams of horses,” Ford once said. “Horses on a farm are wasteful.”

### Edison, Cadillac, Ford

If, as many say, Henry Ford was the father of modern mass production, then Thomas Edison might perhaps be considered its favorite uncle. Indeed, if there was anyone who inspired Ford, it was Edison, whose career Ford had followed for years, well before he was hired as an engineer by Edison Illuminating Co. in 1891. Two years later, despite little formal training in the field, Ford was promoted to chief engineer. The promotion brought with it an increase in income and free time, which Ford devoted to experimenting with gasoline engines.

In 1896, those experiments resulted in the successful creation of the Ford Quadricycle, a self-propelled vehicle that, after some improvements, he had the opportunity to demonstrate for Edison himself. Edison not only approved of Ford’s experimentation, he encouraged it. Three years later, backed by money from local lumber baron William H. Murphy, Detroit Mayor



building another automotive company. In 1903, his efforts paid off, when, in partnership with a Detroit coal dealer and John and Horace Dodge (of Dodge automotive fame) he established the Ford Motor Co.

Many people know what came next: the Model T, the Model A and, in general, the transformation of the automobile from a rich man’s plaything to a relative necessity—which remains a defining aspect of Ford’s legacy. In his

perfect, or at least improve, the assembly line process—an innovation that helped lead to the then-revolutionary “\$5 workday.” Those efforts culminated in 1913, when Ford married interchangeable parts with standard work and moving conveyance to launch the first moving assembly line ever used in large-scale production. The development allowed labor to be divided into smaller portions and essentially brought perfectly fitting components to workers as they stood in

## “Nothing is particularly hard if you divide it into small jobs.”

William Maybury and U.S. Senator Thomas Palmer, Ford left Edison and started Detroit Automobile Co. It didn’t take long for disillusionment to set in. Believing the company to be driven by profit rather than innovation, Ford felt that the cars being produced were too pricey and of low quality. Two years later, in 1901, the company folded.

That same year, Ford and an associate, Childe Harold Wills, designed, built and raced a 26-horsepower automobile. Its success encouraged former Detroit Automobile stockholders to back Ford once more, and the Henry Ford Co. was formed, with Ford as chief engineer. When Ford left amid tension in 1902, the company was renamed Cadillac Automobile Co.

But Ford kept pushing. In addition to working with other automotive enthusiasts to build better cars, he also began racing them, hoping that would attract investors to support him in

biography, *My Life and Work*, Ford wrote: “I will build a car for the great multitude. It will be large enough for the family, but small enough for the individual to run and care for. It will be constructed of the best materials, by the best men to be hired, after the simplest designs that modern engineering can devise. But it will be so low in price that no man making a good salary will be unable to own one—and enjoy with his family the blessings of hours of pleasure in God’s great open spaces.”

While his automotive achievements are, perhaps, the most well-known and enduring aspect of Ford’s legacy, what made that success possible was his dedication to overhauling the manufacturing process—an achievement that allowed Ford Motor Co. to develop and produce cars with such speed and at such a low cost that Ford was soon turning them out at a record pace.

Most notably, Ford worked to per-

place, allowing them to save time and produce more, by eliminating the tinkering that had previously been required to make parts fit. “Nothing,” Ford would say, “is particularly hard if you divide it into small jobs.”

But this particular innovation came at a cost: high turnover.

“In developing the assembly line,” explains Ford Museum curator Casey, “Ford discovered that people didn’t want to work on it. It was boring and arduous. If it’d been easy, that would have been different. But it was hard work, and people wouldn’t stay. He ultimately came to the conclusion that if you pay people enough, they’ll do almost anything. Effectively, [Ford] more than doubled the wage. Now, unskilled workers could make so much money that they stayed and put up with the problems.”

In addition to increasing output, the assembly line also decreased cost,



Clockwise: A Ford hits the beach. Henry Ford whispers to longtime friend Thomas Edison. The Highland Park Plant, where the moving assembly line became operational in 1913. A 1932 Ford Roadster. Assembling a car at the Ford factory in 1903.

allowing Ford to sell cars at a historically low price, which placed automobiles in the hands of average consumers—including his own employees, who with their new higher wages were able to enjoy a higher quality of life than had ever been available to unskilled laborers. “He transformed the car from a device that was essentially a toy for upper-middle-class and wealthy people into something that could be owned by almost everyone,” Casey says. “For most people now, life without a car is highly inconvenient. That was not the case before he introduced the Model T.”

What ultimately emerged was mass production on a grander scale than the world had ever known. By 1914, the price of a Model T had dropped from \$850 (the cost of the first model sold in 1908) to \$290 (\$6,544 today), and it took only 93 minutes to assemble. Ford built 15 million Model T’s between 1908 and 1927.

Sales began to wane as customers clamored for more customized automobiles with additional options. Though Ford was initially resistant to meeting those demands—famously saying, “Any customer can have a car painted any color that he wants so long as it is black”—he eventually relented under pressure from stakeholders, including his son, Edsel, with whom he ran the company. In 1927, the Ford Motor Co. introduced the Model A, which offered multiple models, safety options and other features.

Ford’s impact on the industry was far-reaching, says Casey, including not only the assembly line but also the concept of a highly organized factory where production is carefully orchestrated and choreographed. Other automobile manufacturers followed suit, turning Detroit into a Mecca for all things automotive.

### The Ford Legacy

Despite its success, Ford Motor Co.’s years under Ford were not without problems. In the late 1930s, Henry Ford experienced a series of strokes that compromised his health. He gradually became more of a figurehead, as other executives began making decisions in his name—including Edsel, with whom he ran the company until Edsel’s death from stomach cancer in 1943. Upon Edsel’s death, Henry Ford resumed control of the company, but his mental strength was fading fast, and, as the company began to falter, bankruptcy became a serious risk. In 1945, two years before Henry Ford’s death, Edsel’s widow led his ouster; his grandson, Henry Ford II, was installed as president.

Over time, the industrial production model that made Ford so successful—including the idea of high wages for unskilled workers—declined as well.

"It turns out that the relationship Ford established wouldn't last forever," Casey says. "The days when you could go into the auto plant with a high school education or less, stay for 30 years, and wind up with a house, two cars, a boat and two kids is no longer."

But while the paradigm that Ford established is perhaps less influential today, Ford himself remains a symbol of modern manufacturing and mass production. "We still use assembly lines and mass production," Casey says. "But we have also modified those processes in ways that allow a lot more variation in a product. At his peak, Ford made nearly 2 million Model T's per year. Today, no one makes anywhere near that number of just one model in a year.

"Instead, we've taken those processes and techniques he developed, which were designed to make millions of the same thing, and modified them to be much more flexible," Casey says. "You still get the economies of assembly line, but no longer in only one color." ■

## Ford Philanthropy

Some 65 years after Henry Ford's death, his legacy lives on in the form of the Ford Foundation, a philanthropic organization first established with an initial gift from his son, Edsel Ford, in 1936. Unlike most other such organizations of the day, which funneled funds toward solving challenges within a particular field, the Ford Foundation cast a much broader net, aiming to address humankind's most pressing problems.

The foundation, initially based in Detroit, moved to its permanent headquarters in New York City in 1953, when, under the direction of Henry Ford II (Edsel's oldest son), its trustees broadened the organization's scope to take on a national and global mission: promoting peace, freedom and education throughout the world. Over the ensuing decades, Ford Foundation grants have launched and supported a broad array of far-reaching ventures. Among them: the Public Broadcasting Service (PBS); the Grameen Bank (which offers small loans to the rural poor of Bangladesh); anti-AIDS initiatives around the world; and the International Fellowships Program, which brings students from marginalized countries to the U.S. to pursue graduate studies.

Today, the Ford Foundation, with 10 regional offices around the world, supports programs in more than 50 countries. In 2011, the foundation reported some \$10.3 billion in assets, ranking it second (to the Bill & Melinda Gates Foundation) among United States grant-making foundations.



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# THE DIXON DRILLER

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## SUMMER 2012

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### TRIVIA Did you know that...

**The first outdoor sign** advertising "Coca-Cola" still exists. It was originally painted in 1894 and is located in Cartersville, Ga.

**The top five** oil exporting nations in the world are Saudi Arabia, Russia, Norway, United Arab Emirates and Iran.

**The average life span** of a major league baseball is seven pitches.

**An ostrich's eye** is bigger than its brain.

**The liquid inside** young coconuts can be used as a substitute for blood plasma.

**In Colombia**, an individual can be fined up to \$90,000 for gossiping. **Hummingbirds** can't walk.

**A tortoise can live** up to 140 years.

**It is against the law** to purchase or consume Jack Daniels Whiskey in the city where it is produced, Lynchburg, Tenn.

**In 2005, Canada** was the single-largest trading partner with the United States. China was second and Mexico was third.

**There are only four words** in the common English language that end

in "-dous": tremendous, horrendous, stupendous and hazardous.

**The United States spends** more money on its military than the next 13 countries on the list combined!

**2 and 5 are the only** prime numbers that end in 2 or 5.

**The only letter** not appearing on the Periodic Table is the letter "J."

**In 2010, IKEA** printed 198 million copies of its catalog.

**The largest man-made lake** in the U.S. is Lake Mead, created by Hoover Dam.

www.randomtriviagenerator.com

### ON THE LIGHTER SIDE

**At school one morning** the teacher asked little Johnny what he had for breakfast. Little Johnny said, "Well, on my way to school I came across this apple tree, so I climbed up there and started eating apples. I guess I eat about six," said little Johnny. "No," said the teacher, "It's ate!" Little Johnny said, "Well, it could've been eight, I don't remember."

**A college student** challenged a senior citizen, saying it was impossible for the elder's generation to understand his. "You grew up in a different world," the student said. "Today we have television, jet planes, space travel, nuclear energy, computers..." Taking advantage of a pause in the student's litany,

the geezer said, "You're right. We didn't have those things when we were young; so we invented them! What are you doing for the next generation?"

**Doctor:** "I'm sorry to have to tell you that you may have rabies, and it could prove fatal."

**Patient:** "Well, doctor, please give me pencil and paper."

**Doctor:** "To make your will?"

**Patient:** "No, to make a list of people I want to bite."

**A scratch golfer** hits his ball 300 yards straight down the fairway, and it hits a sprinkler and careens off into the woods. He finds the ball, but trees surround it. He's angry, grabs his 9-iron, and hits the

ball as hard as he can. It bounces off a tree and back at the golfer's head and kills him. The golfer arrives in heaven, and God himself is at the Pearly Gates to greet him. Looking up his records, God sees that the guy golfs and asks, "Are you any good?"

The golfer looks at God and says, "I got here in two, didn't I?"

**Alfie had been listening** to his sister practicing her singing.

"Sis," he said, "I wish you'd sing Christmas carols."

"That's nice of you, Alfie," she said. "Why?"

"Then I'd only have to hear you once a year!"

Ajokeaday.com

### PRODUCT SPOTLIGHT



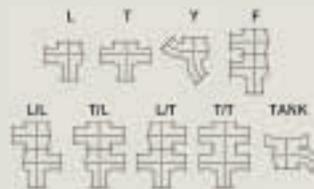
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## Dates in History

**1863** - On July 1, the **largest military conflict in North American history** begins when Union and Confederate forces collide at Gettysburg, Pa. The epic battle, which resulted in more than 46,000 casualties, lasted three days and resulted in a retreat to Virginia by Robert E. Lee's Army of Northern Virginia.

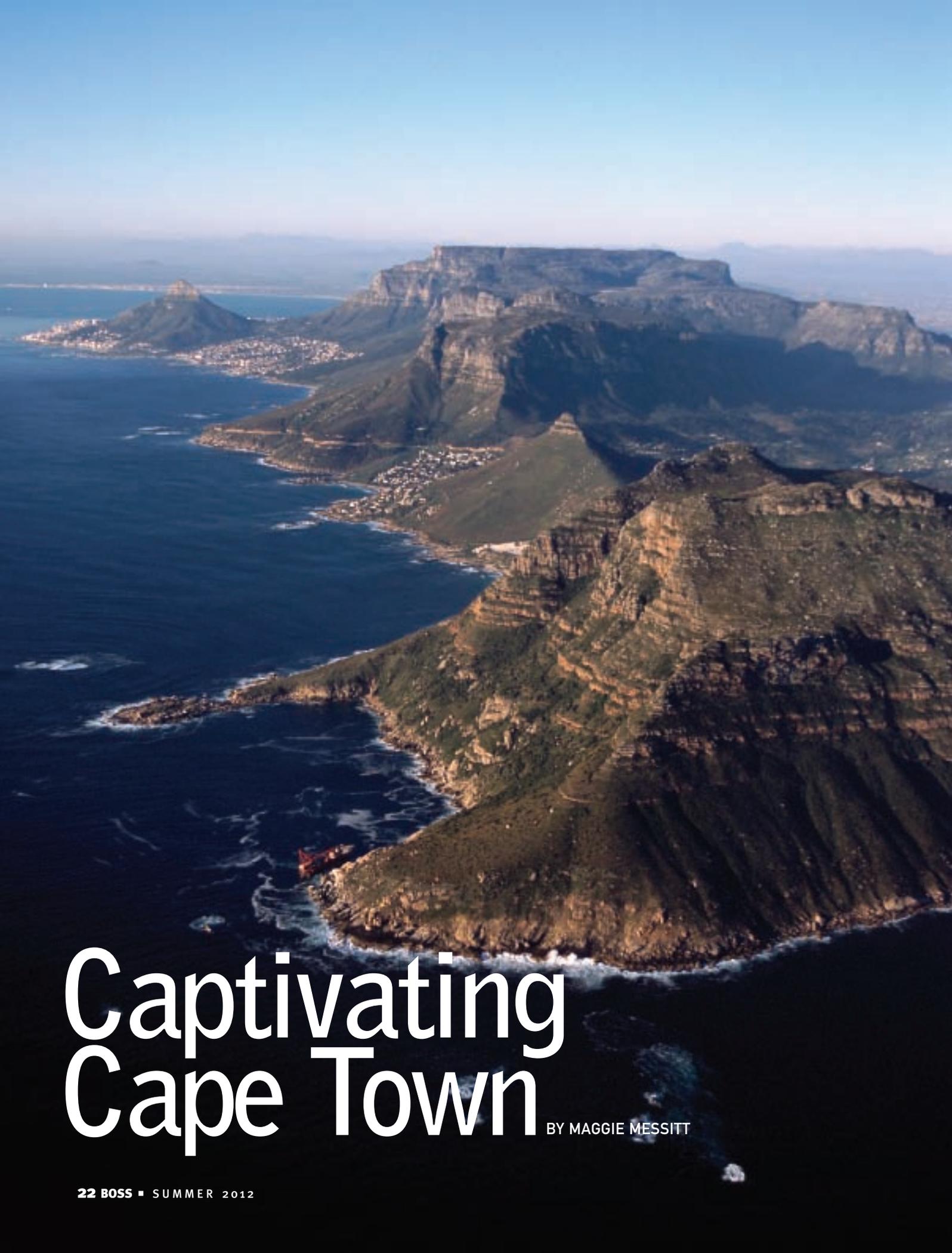
**1865** - On July 5, in the East End of London, preacher William Booth and his wife, Catherine, **establish the Christian Mission**, later known as the Salvation Army. Determined to wage war against the evils of poverty and religious indifference with military efficiency, Booth modeled his Methodist sect after the British army, labeling uniformed ministers as "officers" and new members as "recruits."

**1933** - On July 6, **Major League Baseball's first All-Star Game** takes place at Chicago's Comiskey Park. The brainchild of a determined sports editor, the event was designed to bolster the sport and improve its reputation during the darkest years of the Great Depression. Originally billed as a one-time "Game of the Century," it has now become a permanent and much-loved fixture of the baseball season.

**1974** - On July 3, **Los Angeles Dodger Mike Marshall set a Major League record** for most games pitched in consecutively when he relieves starting pitcher Tommy John to pitch in his 13th consecutive game. Marshall was remarkable for his ability to pitch every day without experiencing the soreness and injury that plagued other pitchers.

**1997** - At midnight on July 1, **Hong Kong reverts back to Chinese rule** in a ceremony attended by British Prime Minister Tony Blair, Prince Charles of Wales, Chinese President Jiang Zemin and U.S. Secretary of State Madeleine Albright. A few thousand Hong Kong residents protested the turnover, which was otherwise celebratory and peaceful.

www.history.com



# Captivating Cape Town

BY MAGGIE MESSITT

“This cape is the most stately thing and the fairest cape we saw in the whole circumference of the earth.”

– From the journal of Sir Francis Drake, on seeing the cape for the first time, 1580



### THE MAIN CHARACTER IN THE STORY OF CAPE TOWN,

South Africa, stands prominently for everyone to see. Early navigators used to search the horizon eagerly until spotting the flat silhouette of the impressive “Tafelberg,” the mountain with a tabletop shape. The first man on deck to spy her was usually awarded 10 guilders and six bottles of wine. This rugged majestic block of sedimentary sandstone has been a signal, for centuries, of adventure, hope and respite for many.

The first climbing route up Table Mountain was via a huge cleft on its western face, Platteklip Gorge. For centuries, this ravine with unreliable rock remained the only route. The first recorded climb took place in 1503 and many adventurers and sea explorers followed. At the time, the route could take more than 24 hours, and paths were often blocked by impenetrable thorny bush or occupied by the now-extinct, black-maned Cape Lion. Some adventurers went up but never came down.

Today, there are 350 recognized paths to the top of Table Mountain, ranging from those for professional mountaineers to leisurely tourists. Ironically, the dangerous Platteklip Gorge is now one of the easiest routes available, ascended in just three hours. (For a less taxing

ascent, try taking the cable car, which offers a 360-degree view of Cape Town—and, if you’re lucky, glimpses of the various animals, from porcupines to baboons, who call the mountain home.)

Tourists and locals alike agree that the mountain offers a welcome respite for reflection. “I have climbed [Table Mountain] from two to six times a week for the past few years,” says Steven Otter, South African author and political media coordinator. “The sweeping vistas punctuated by towering cliffs and soaring eagles relaxes me before or after a long day’s work and helps me put my life into perspective.”

Panoramically enfolding the harbor of Cape Town and providing a magnificent backdrop for this seaside city are the massif’s three peaks: Devil’s Peak, The Table and Lion’s Head. The flat top (The Table) on which parties and concerts have been held is just over 2 kilometers long. It is from here that you can best map out your Cape Town adventure. North. South. East. West. You can see it all.

If you turn north, you’ll spy the road out of town toward Namaqualand, which famously becomes a kaleidoscope of color in spring with the arrival of “daisy sea-



Left to right: Namaqualand flowers, Muizenberg beach, Cape Point aerial, Kirstenbosch National Botanical Gardens.

son.” The road leads to private game reserves (which offer Big Five safaris, referring to the African lion, leopard, rhino, elephant and Cape buffalo), and West Coast National Park.

To the south sits Cape Point and The Cape of Good Hope, a beacon for sailors over centuries. In 1488, Portuguese explorer Bartolomeu Dias originally called the peninsula Cabo das Tormentas (The Cape of Storms), aptly named for the treacherous waves, wind and rain he pushed through to reach what is now Cape Town. Later, explorers renamed it to represent the optimism that a sea route to India and the east had opened.

The land between Table Mountain’s plateau to Cape Point encompasses Table Mountain National Park. The park lies in the heart of the Cape Floral Region, a botanist hotspot. The park, with its afro-temperate forests, makes the area home to 250 bird species and

2,000 species of flora (more than what’s found in the United Kingdom). Several are endangered and endemic only to Cape Town.

The peninsula’s unparalleled biodiversity plays no small role in Cape Town’s unusual eco-urban beauty. No visitor should leave Cape Town without a road trip through the southern section of the national park and a hike to Cape Point—an area rich with tidal

pools, isolated beaches, bike and footpaths and numerous picnic spots. The park’s 34-kilometer circular route is a perfect day adventure for bikers.

Gaze east and you can see some of the city’s best surfing beaches and the road leading to the Boulder Beach

colony of African penguins and some of Cape Town’s quaint and colorful suburbs (with meandering streets, stunning seaside cottages and pedestrian-friendly shopping districts): Simonstown, Haut Bay and Muizenberg. You can also get inspired for the extremes: paragliding off Lion’s Head, bungee jumping, standup paddle lessons, kite surfing school, snorkeling with Duiker Island seals, kayaking with penguins

## Table Mountain National Park is home to 250 bird species and 2,000 species of flora.

and diving face-to-face with sharks. The eastern region also offers ample opportunities to relax, with highways into the wine lands and Kirstenbosch National Botanical Gardens (named one of the world’s best picnic spots by *National Geographic Traveler*).



Greenmarket Square

## TRAVEL BASICS

South Africa's tourism continues to rise despite the world's lagging economy; more than 8 million foreign tourists visited in 2011, up 7.4 percent from 2010. The lack of time change for travelers from the United Kingdom and only a minor shift for most Europeans means a long flight minus jet lag. Flights from London, New York, Amsterdam, Dubai, Istanbul and Buenos Aires are frequent and often direct.

**CURRENCY** South Africa's currency is the rand. Named after Witwatersrand, where most of South Africa's gold deposits were found, its history has been less than stable. Worth \$1.40 when it was first introduced in 1961, it is currently worth 13 U.S. cents or just shy of 8 rand to the U.S. dollar. Your U.S. dollar or euro will take you far these days, so it's an ideal time to check off this African city from your bucket list!

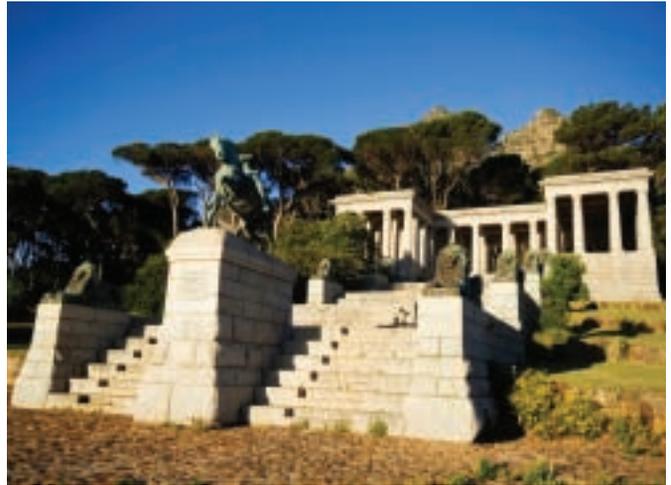
**ACCOMMODATIONS** For a long time, accommodations in Cape Town and other regions in the country catered to five-star travelers or one-star backpackers and nothing in between. In the last decade, however, the gap has been filled by a wonderful collection of bed-and-breakfasts, guesthouses and smaller hotels offering the personal homegrown touch that makes South Africa so appealing.

Cape Town's exquisite side, often equated with the opulence of its colonial past, has much to offer. If you're seeking luxury,

look to Mount Nelson Hotel, Cape Royale, Cape Grace or the Villa Zest Boutique Hotel, recognized as the best hotel in the world by Trip Advisor voters. If you're looking for local and homegrown, stay in a guesthouse in the historic Bo-Kaap Quarter or look to Long Street's Grand Daddy Hotel and its rooftop airstream trailer park, with surprisingly stunning views of the city. But whatever you do, don't discount the smallest B&Bs that dot the city—many visitors insist this is the best way to experience Cape Town's personality and its residents.

**TRANSPORTATION** Cape Town has recently made its mark as one of the world's most bike-friendly cities, with comparisons to Berlin, Paris, Chicago and Barcelona. The city's recent creation of cycle lanes, secure bike parking stations and bike-friendly buses is paying off for both locals and tourists. As a result, bike tours and rental shops are opening up around the city. If you plan to storm the cape by bike, purchasing a city bicycle map (40 rand) beforehand is a must.

While public transportation certainly improved in preparation for the 2010 World Cup, Cape Town tourism definitely requires a rental car. If you're not eager to drive on the left side of the road, navigate the Dutch-influenced thoroughfares or deal with city traffic, there are plenty of private drivers with whom you can connect—just talk to your hotel ahead of time for recommendations.



Left to right: Bo-Kaap Quarter, South African penguin, Table Mountain in background, Rhodes Memorial.

To the west, you'll get an amazing view of the city where the Dutch East India Tea Co. first settled (see history sidebar). Centuries later, the urban center of Cape Town has settled into each nook and ridge and valley. As high up the mountain as possible. Reaching to the sea and bay.

There are too many "must visits" to count: St. George's Cathedral (South Africa's oldest building, opened in 1834); Rhodes Memorial (modeled after a Greek temple); township tours

a string of national museums; history-rich neighborhoods like Bo-Kaap; and local markets at the Old Biscuit Mill, Green Market Square and the Porter Estate Produce Market in Tokai. And, just out of view but south along the western coast of the peninsula you'll find the beaches of Clifton and Camps Bay, filled with beach chairs and umbrellas and cafes.

Robben Island—originally home to seals, birds and penguins—is located 7 kilometers from Cape Town's western

and anti-apartheid activists. Most famously, South Africa's first democratic president, Nelson Mandela, and the founding leader of the Pan Africanist Congress, Robert Mangaliso Sobukwe, were imprisoned on the island.

"During the many years of incarceration on Robben Island, we often looked across Table Mountain at its magnificent silhouette," Mandela has said. "To us on Robben Island, Table Mountain was a beacon of hope. It represented the mainland to which we knew we would one day return."

The prison closed in 1996 and reopened as a museum in 1997. The museum runs educational programs and conducts ongoing research related to the island. Today, several men who were once prisoners on the island return each day to guide tourists through history.

Table Mountain stands in the path of one of the strongest regular winds to blow on the African continent—the

**"To us on Robben Island, Table Mountain was a beacon of hope. It represented the mainland to which we knew we would one day return."** —Nelson Mandela

by foot or bike; the Victoria & Alfred Waterfront (the historic heart of Cape Town's working harbor and South Africa's most visited destination); the ferry to Robben Island; Long Street's music, dining and shopping district;

coastline. First used by Europeans during the Khoikhoi-Dutch War, the island served as a political prison, isolating a diverse list of people: indigenous African leaders, Muslim leaders from the East Indies, soldiers and civilians, women

infamous South Easter. Gusts can reach 120 kilometers (75 miles) per hour, pushing moisture-laden air over the table, forming a sun-kissed white tablecloth, perpetually sliding down the front and disappearing, while continuously forming from behind.

The mountain's weather is unpredictable. It can change in an instant. And for that reason, locals will tell you: Get up Table Mountain on your first day, if you can. If you can't, keep an eye on her. When she's cloudless or the winds are calm, start your trek or board the cable car. Don't miss your opportunity. Many have traveled to stand on her back and gone home disappointed.

Table Mountain, recently named one of the world's "new seven wonders of nature," is the first reason people cite for visiting South Africa's Mother City. To residents and tourists alike, this mountain helps define the place and its people: strong, diverse, shaped by time and weather, indescribably stunning, resilient and welcoming. ➤

## A RICH HISTORY

For thousands of years, Cape Town was inhabited by the Khoikhoi, ancestors of Kalahari Bushmen. For an unknown period of time, the Khoikhoi traded fresh meat with sailors for tobacco, copper and iron.

Cape Town's European history began in 1652 when the Dutch East India Tea Co. decided to establish a port for its ships and eventually a trading post for other passing fleets. The first European settlers were mainly Dutch, with a small population of French Huguenots who fled France for the Netherlands for religious freedom and were then directed south to satisfy the Cape Colony's skilled labor needs. The first settlers soon explored the adjacent hinterland and founded the cities of Stellenbosch and Paarl, both located in today's wine lands. Cape Town was also the starting point for European pioneers, called Voortrekkers, to explore and settle the rest of South Africa.

The British invaded the Dutch Cape Colony in 1795 at the same time the French occupied the Dutch Republic. The British relinquished control in 1803 only to reoccupy in 1805 and establish an official British Colony via the Anglo-Dutch Treaty of 1814. The British de-colonized just shy of a decade later and the Union of South Africa was established in 1910. It was during this time that apartheid—the segregation of races—and its internationally controversial policies were established and enforced. Apartheid ended in 1994, after which the newly democratized Republic of South Africa was formed and its first democratically elected president was named.—MM

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# JAPAN THE VICTOR

In a surprise upset of Russia in ‘the first great war of the 20th century,’ Japan established itself a world power

BY EUGENE FINERMAN

**In 1837, an American ship sailed** to Japan with the intent to return home seven shipwrecked Japanese sailors. Japanese imperial officials responded with cannon fire—warning shots but sufficient to drive the unarmed ship away. Japan wanted no contact with the outside world and would not even accept its own subjects once they had been “contaminated” by foreigners.

For more than two centuries, Japan had imposed upon itself a strict isolation. However, a medieval Japan could not keep the modern world at bay forever. In 1854, more American ships arrived, an armed squadron commanded by Commodore Matthew Perry. His “Pacific overture” was in fact a threat; Japan could either open its door to the West or see it blasted

open. If the Japanese were humbled by superior force, they also marveled at it—and then set out to master the industry, technology and weaponry of the foreigners. Scarcely 50 years after Perry roused a feudal society from stagnation, Japan would go on to emerge a world power.

Japan transformed itself, through a chain of events that

would come to be known as the Meiji Restoration. Quaint, charming Kyoto had been the old capital, but this new Japan needed a capital that reflected the dynamic spirit of the times. The government and the imperial court would relocate to Japan’s largest city, Edo. It would be renamed Tokyo—meaning eastern capital. Japan was eager to have all the West had to offer: the

Gregorian calendar, railroads, telegraphs, heavy industry, a modern army modeled upon Germany’s, a modern navy modeled upon Britain’s, a system of public schools with compulsory education. The country sponsored students to study abroad. Even clothing was to reflect Japan’s ambitions; the old styles would be left to Shinto priests and



**Left: Published in 1904, a colorful woodcut by artist Kiyochika Kobayashi depicts a large Japanese hand crushing Port Arthur. Japanese soldiers prepare for battle in their war against the Russians.**



A print published in 1904 shows a Japanese official reading a document in front of captured Russian soldiers at Chemulpo, Korea. Japanese soldiers near Chemulpo, Korea, in the summer of 1904. The battleship *Mikasa*, preserved today at Yokosuka, played a key role in the conflict, reportedly surviving some 20 direct hits.

geishas, but the rest of the population should dress like the West.

Yet, even as Japan seemed to be assimilating, it also was forging an identity in the minds of its people. For centuries, the Japanese had maintained a stronger bond with their region or local aristocratic family than with a distant emperor. Now, through public works and education, they felt part of a nation.

By 1890, Japan could apply one more lesson it had learned from the West: imperialism. With a modern army and navy, led by Western-trained officers and manned by educated conscripts, with industries that supplied its weapons and munitions, Japan was ready for war. Its object was the conquest of Korea. Separated from Japan by only a narrow strait, the Kingdom of Korea had coal and iron that Japan needed. Korea was militarily weak but it was a vassal of China, and Japanese aggression would likely lead to war with China. But the Japanese welcomed the prospect.

Indeed, the Sino-Japanese War, fought between 1894-1895, was one Japanese victory after another. The Chinese Empire also had attempted to modernize its armed forces but had failed abysmally. Its officers were inept or corrupt, its troops untrained. The Chinese navy had purchased new ships, but had no one to operate them. Japan soon had control of Korea and then invaded Manchuria, a region of north-

eastern China. The Japanese seized the strategic Liaotung Peninsula with its deepwater harbor of Port Arthur. With control of Liaotung, the Japanese army had an open road to the Chinese capital of Peking. China had no choice but to sue for peace. Korea would now be the vassal of Japan. China also acknowledged the new overlords of the Liaotung Peninsula, and the defeated empire was forced to cede the island of Taiwan. The Japanese Empire now would extend south, toward the Philippines. Furthermore, China was obliged to pay Japan an indemnity of 15 million pounds of silver.

ness. In 1898, Russia extorted from China the control of Port Arthur and the Liaotung Peninsula. With that southern expansion, Czarist Russia now loomed as a prospective threat to Korea. Japan's response was to triple its military expenditures, doubling the size of its navy. Shipyards in Britain were constructing battleships named *Asashi* and *Mikasa*. (The British government appreciated both the business and a prospective ally against Russian expansion.)

But war was not inevitable. In 1903, Japanese diplomacy repeatedly sought an understanding with Russia: Japan's unchallenged control of Korea in return

## As for a war—tiny Japan against their great empire—the Russians could not imagine the idea.

But Japan could not relish its victory for long. Six days after the signing of the peace treaty, an alliance of Russia, France and Germany demanded Japan's return of the Liaotung Peninsula to China. As consolation, Japan was offered another ton of silver. The Japanese were furious but in no position to fight three European powers.

It seems that the world did not yet respect Japan; the war was simply regarded as evidence of China's weak-

for Russia's acknowledged hegemony in Manchuria. However, the Russians were not interested. They already had Manchuria and did not need Japan's permission. Furthermore, the Russians had an obvious contempt for the Japanese; the czar himself referred to them as "monkey men." As for a war—tiny Japan against their great empire—the Russians could not imagine the idea. But the Japanese were meticulously plotting it.



Japan had a population of 46 million and a standing army of 270,000 men. Russia's population was approximately 130 million and the czar's army numbered 1 million men. Yet the actual logistics were in Japan's favor. Its full force could quickly be brought to bear against Manchuria. Only 80,000 Russian soldiers were in eastern Asia, and half of them were garrisoned at Vladivostok and Port Arthur. Most of the czar's army was 5,700 miles away in Europe. The Trans-Siberian Railroad, a single line of train track linking Moscow to the Pacific, was not yet completed; and its service would be sporadic during the long Siberian winters. So the Russian army would be outnumbered and with only a tenuous link to supplies and reinforcements. Russia's Pacific fleet was also at a disadvantage; half was stationed at Vladivostok and icebound a third of the year. So, if war were merely a matter of numbers and meteorology, then Japan made a logical decision.

On Feb. 8, 1904, the Japanese navy launched a surprise attack on Port Arthur. The harbor was mined and the port blockaded, trapping the Russian ships there. The Japanese had command of the sea. A Japanese army disembarked in Northern Korea for the invasion of Manchuria. Another army landed in the Liaotung Peninsula to besiege and take Port Arthur; the Russians rushed what troops they had to hold it. Elsewhere the Russian strategy was to avoid battle, slowly retreat and wait for reinforcements. The last

hundred miles of the Trans-Siberian Railroad now was hurriedly being constructed. Yet, even then, the single track could only transport at most 40,000 troops in a month. It would take a year before the Russian army had numerical parity with its enemy. The Japanese were not likely to wait.

To challenge the Japanese naval

supremacy, Russia decided upon a dramatic strategy. Its Baltic fleet would sail 18,000 miles to break the Japanese blockade of Port Arthur. Unfortunately, the fleet was not as impressive as the plan. Many of its ships were outmoded—cruisers with sailing masts. The more modern ships had to travel at the same speed as the old ones. Leaving the Baltic in October 1904, the Russian ships sailed around Africa and reached Madagascar in January 1905; there they learned that Port Arthur had fallen to the Japanese. The fleet now had no mission but was ordered to sail anyway to Vladivostok. However, there was no need to rush; Vladivostok would be icebound until the end of April. While the Russian fleet cruised to Asia the Japanese had captured Mukden, the capital of Manchuria. The Russians had nothing left to defend but they still weren't ready to negotiate with the Japanese, so the Baltic fleet sailed on.

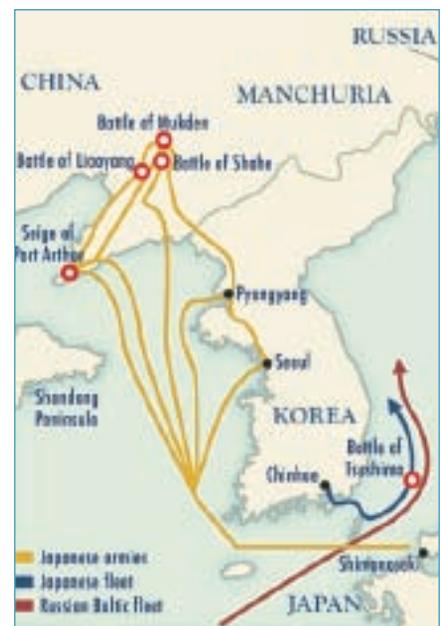
Sailing north along the coast of China, the most direct route to Vladivostok was through the Straits of Tshushima that separate Japan and Korea. The Russian fleet entered it on May 27, 1905—and found the Japanese fleet waiting. Of Russia's 45 ships, only 12 avoided being sunk or captured: some 4,000 sailors were dead and 5,000—including the admiral—were taken prisoner. The Japanese lost three torpedo boats and 117 men. Now Russia had to sue for peace; the news of the consequent defeats had incited protests and demonstrations through-

out the czar's empire. The Russian people were demanding reforms, and the imperial government was unsure of the loyalty of the army. Japan also was ready for peace; however victorious, the war was bankrupting the economy.

At the invitation of President Theodore Roosevelt, Japanese and Russian diplomats met in August at Portsmouth, N.H., to negotiate a peace treaty, which returned the sovereignty of Manchuria to China (while acceding some key port and rail resources to Japan), and shifted ownership of the southern half of the Island of Sakhalin from Russia to Japan.

The treaty was signed in September 1905. For his successful arbitration, President Roosevelt won the Nobel Peace Prize in 1906. The treaty did not go over well with the Japanese public however, which had expected all of Sakhalin and a monetary indemnity.

Japan had won an empire—Korea and Southern Manchuria—and earned the status of being a world power, an Asian nation equal to any Western one. Such pride was justified, but it encouraged an arrogant and dangerous ambition. Japan saw itself as the master of Eastern Asia and the Pacific ... and within just a few decades, that would lead to disaster: World War II. ●



Map during Russo-Japanese War (1904-1905)

# Center for Solutions

The spirit of innovation lives on at Dixon

> With the grand opening in March of a 12,000-square-foot Innovation Center, Dixon is building significantly on its mission to develop coupling product solutions that improve processes, productivity and safety.

“To the best of our knowledge, other hose coupling manufacturers haven’t made this degree of commitment to continuing [such] innovation,” said Bill Harr, Dixon’s global marketing director. “We’re providing expertise, training, information and answers. For many of our customers, the Center effectively serves as an extension of their own technical area.”

Activities at the Innovation Center, located in Chestertown, Md., encompass a wide variety of technologies and products, all aimed at developing new products and finding solutions pertaining to Dixon’s industrial and specialty market segments including petrochemicals, construction, mining, fire prevention and suppression, food and beverage processing and pharmaceutical processing.

**“WE’VE ALWAYS ENCOURAGED CUSTOMERS TO SHARE THE CHALLENGES THEY FACE PERTAINING TO SPECIFIC APPLICATION NEEDS.”** —Scott Jones, vice president of sales and marketing

Center director Jim Shifrin leads the staff of product development engineers and technical support personnel. Research, development and testing functions include prototype product design and manufacturing, application-specific testing and competitor product benchmarking. To support these functions, the Center houses



Dixon customers can find training, information and answers at the new center.

technologically advanced machine tools, testing equipment, plus computer-aided design using SolidWorks modeling and simulation.

In addition, the Innovation Center conducts training sessions for Dixon distributors and end-users in a large,

interactive training facility suitable for serving groups up to 75 people. Wide-ranging training topics include sessions on fluid and dry material transfer applications, industrial hose coupling workshops and specific market segment training. Programs designed for small and large groups—including general and custom

courses—are part of the training options offered.

According to Scott Jones, vice president of sales and marketing, one key mission of the Innovation Center is to be a resource wherein customers can collaborate with Dixon engineers on proprietary projects. “We’ve always encouraged customers to share the challenges they face pertaining to specific application needs. We’re now taking this to a new level of support by working side by side with customer personnel here at the Center to come up with strong solutions,” he said.

Jones said that another goal of the Center is to support companies throughout the world, not merely those in North America.

The Dixon Innovation Center is dedicated to Howard W. Goodall, founder of Dixon, and his son Richard



Equipped with technologically advanced machine tools, testing equipment and computer-aided design, the Innovation Center offers opportunities for prototype product design and manufacturing, application-specific testing and competitor product benchmarking.

B. Goodall, who combined led the company from 1916 to 1994.

Bob Grace, president of Dixon, explained the significance of naming the Center after these men. “We are structuring the activities of the new Innovation Center around the needs of our customers. And this customer-centric focus is a hallmark of our company that goes right back to our early leaders,” Grace said.

Dick Goodall, CEO of Dixon, provided a personal perspective on the company’s culture of listening to customers. “Howard Goodall, my

grandfather, was more than an astute inventor and engineer. He was a person who recognized the importance of asking consumers in various industries what they needed to do their jobs better,” he said.

“This was no easy feat to do in the early days of Dixon. But he crisscrossed the country, visiting construction sites, mining operations, oil drilling companies and railroads. From these visits, he was able to build a solid product line that solved many of those challenges,” Goodall noted.

Under the leadership of Howard

Goodall’s successor, Richard B. Goodall, the company continued to grow and prosper largely due to R.B.’s long-range thinking and understanding of the industrial hose and fitting business. “My grandfather and father set the foundation for the company. Both men were great innovators and motivators,” said Dick Goodall.

*To learn more about the resources of the Dixon Innovation Center, including training course topics, visit [www.dixonvalve.com/innovation](http://www.dixonvalve.com/innovation), call 800-520-0947 or email your request to [bharr@dixonvalve.com](mailto:bharr@dixonvalve.com).* ■



Dixon flourished under the company’s founder, Howard W. Goodall, and his son Richard B. Goodall, who combined led the company from 1916 to 1994. The new Innovation Center is dedicated to them. “Both men were great innovators and motivators,” says CEO Dick Goodall.

# The Dangers of Dust

Checking industrial hose assemblies for electrical continuity is crucial when organic dust is present

> The process of making sugar from sugar cane has been around since before the birth of Jesus Christ. In many countries, sugar is still made the same way: The stalks are cut, the juice is extracted by ox-drawn crushers and then boiled to remove impurities, and finally it is evaporated to produce sugar crystals. Sugar was once a luxury item for the rich or presented only at special occasions. In the 1700s,

sugar had another moniker: “white gold.” In today’s sugar processing plant, moving from sugar cane juice to the white crystals we see in the bowl on our kitchen table is done on a much grander scale. The equipment used in extraction, evaporation, boiling, centrifugal and, finally, packaging make this an amazingly quick journey. However, dangers are inherent to this automation, one in a most incon-

spicuous form: dust.

One old plant had been cranking out sugar in roughly the same quantities for decades with very little change in its equipment. After the plant’s sale, the new management team apparently had a simple strategy for profitability: Increase production while reducing expenses. Increasing production was relatively easy—just speed up the equipment. Reducing costs was not so simple. One cost-saving measure was reducing the maintenance department’s staffing by one-third. The result: reduced maintenance intervals on aging, now overworked equipment, especially in the packaging department.

Sugar is transported via conveyor belt to the packaging equipment. This modern marvel takes the sack and proceeds to fill it, fold it and then seal it. All of this takes place in the blink

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of an eye. Around this equipment are vacuums that collect the dust from this process. Even then, sugar dust collects on everything and is everywhere. The conveyor in this plant, because of its increased workload and sporadic maintenance, was on a collision course with disaster. One of the bearings that had not been greased in some time began to fail. The friction created enough heat to ignite the nearby dust. The ensuing explosion

of the plant. Several employees were injured from the initial explosion and several more were burned from the raging fire.

Organic dust such as that found in grain elevators, flour processing plants and sugar refineries is extremely volatile. All it takes is a heat source or spark to trigger an explosion. Any equipment, including industrial hose assemblies that transport these products, needs regular

wear, they need to be checked for electrical continuity. During normal use of a hose assembly, the built-in static wire or the helical wire that is used to complete the electrical circuit for static grounding can get damaged. If the hose assembly is crushed or kinked, it must be checked for electrical continuity before further use.

All equipment used in dry bulk transfer of products such as sugar, flour and grain must be properly maintained and inspected. Hose assemblies used for these products must be static grounded and periodically checked for electrical continuity. We generally think of fireworks as the kind that produce oohs and aahs. Improperly maintained equipment used in the presence of organic dust can result in fireworks that can produce screams of pain and injuries. ☛

**ORGANIC DUST SUCH AS THAT FOUND IN GRAIN ELEVATORS, FLOUR PROCESSING PLANTS AND SUGAR REFINERIES IS EXTREMELY VOLATILE. ALL IT TAKES IS A HEAT SOURCE OR SPARK TO TRIGGER AN EXPLOSION.**

rocked the entire plant. The prevalence of the sugar dust allowed the fire to spread quickly throughout the rest

inspection and maintenance. Industrial hose assemblies not only need to be inspected for



## Easy Burn

Five fun (and inexpensive) ways to build exercise into your daily routine

> It's no secret that Americans are getting heavier. Need proof? Look no further than the U.S. Coast Guard. In late 2011, the venerable institution changed its weight restrictions on seagoing vessels from 160 pounds per person to 185 pounds (72.5 to 84 kg.), due to its new Assumed Average Weight per Person index—news that is unsettling enough to make many of us rethink our eating and exercise habits.

Two of the biggest factors at play in

our struggle to exercise and lose or maintain weight are a lack of time and aversion to the traditional activities we normally consider as exercise—a visit to the gym, a spin class, running. While gym memberships and Zumba are great, they aren't the only way to get in shape. Working physical activity into your day is easy—and free.

Carrie McFadden, an exercise physiologist at Towson University in Maryland, advises “asking yourself what you can

do at home a little differently.”

“Maybe mow your own lawn instead of paying someone to do it,” she suggests. “Or get out and walk your dog.”

You also can find ways to exercise at your workplace, notes registered dietitian Jessica Crandall. She suggests easy activities like doing push-ups or squats against an office wall or jumping jacks, if space and privacy allows.

Here, find five tips for activities that will burn an estimated 300 calories.



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Combined with cutting just 250 calories from your daily intake (just one 20-ounce soda), this small burn will put you on a path to losing slightly more than a pound per week. Estimates are based on an average weight of 160 pounds (72.5 kg.) and are calculated via the American Council on Exercise's Physical Activity Calorie Calculator.

#### Have Some Fun

Playing games with your kids, your friends or your pet can be an enjoyable way to be active. Forty minutes of kickball, soccer or touch football burns nearly 350 calories, while an hour of shooting baskets burns just over 300. And don't feel like you have to play a regulation game. "Kicking a soccer ball to an active puppy can be a great workout," says McFadden.

#### Get Out the Broom

Most people don't realize it (at least

until their muscles ache the next day), but over time, work done around the house can build muscle and heart strength in the same way a gym workout can. One hour of moderate yardwork will burn 290 calories. More intense activities—say digging vegetable beds, shoveling snow or pushing a mower for an hour—will consume closer to 400 calories. And don't overlook vacuuming and other housework. Ninety minutes of picking up around the house burns 327 calories.

#### Grab and Go

You don't need a bench press to benefit from weight training. Crandall suggests using hand weights at home, particularly during sedentary time, say when you're watching television. You need 90 minutes of activity to reach the 300-calorie goal, so consider breaking your workout into shorter segments (like grabbing the

weights each time there's a commercial break during a big football game).

#### Put One Foot in Front of the Other

Walking is one of the easiest, convenient and most affordable ways to exercise. If you're a multi-tasker, consider listening to books on your MP3 player while taking a brisk 50-minute walk. If you need a walking buddy to get you moving, what about forming a lunchtime walking club at work?

#### Stand and Stretch

Standing burns more calories than sitting and it's better for your back. If your work is sedentary, consider changing your traditional desk to a standing desk where you may burn slightly more than 300 calories in two hours. Stretching is also crucial to maintaining a healthy back. Stretching or gentle yoga done in small intervals throughout the day can provide comfort—and burn calories. ◀

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# Flush with Success

The advent of the indoor toilet made life sweeter for all

> The thing to do when discussing the history of one of the greatest inventions of all time is to flush away what you may have heard about Thomas Crapper. Because, although the London plumber did make and patent significant improvements to the invention in the late 1800s, he did not invent the flush toilet.

That honor goes to a gentleman (another fastidious and ingenious Englishman) named Sir Thomas Harrington, who, in 1596, came up with the idea for the so-called “water closet”—a seat perched atop a cistern of water that handily swished away whatever waste was deposited into it. The godson of none other than Queen Elizabeth I, Harrington designed it for her (leading many to speculate that’s where the term, “He’s on the throne,” comes from).

**THE WASTE WOULD BE DROPPED INTO THE STAGNANT MOAT WATER BELOW, ADDING YET ANOTHER IMPEDIMENT TO ANY ENEMY FOOLISH ENOUGH TO CONSIDER STORMING THE REEKING RAMPARTS.**

But we’re getting ahead of ourselves here. Long before there was indoor plumbing fit for royalty, there was the natural human desire to rid ourselves of the unpleasantness of what the Chinese euphemistically call “the big necessity.” Since the beginning of time, people have needed a sanitary (and, in most cultures, a relatively private) place to dispose of their bodily

waste, and they have put their ingenuity to work in a variety of ways.

Probably most popular across most cultures in early history was the use of a simple bowl or pot used day and night as needed and emptied outside in a field or nearby body of water. The English called this a “chamber pot.”

Ancient Romans built outhouses or latrines directly over an elaborate system of sewers that emptied into the Tiber River, flushing away waste immediately. Famous for their community bathhouses, the Romans also had commu-

nal lavatories where people could come in and, well, deposit their waste in giant toilets with long, bench-like seats while sharing gossip and the news of the day. Usually, though, ordinary Romans found it easiest just to toss their waste from chamber pots into the streets.

One of the more disgusting iterations of the toilet appeared during the



Middle Ages with the invention of the castle garderobe: a small room jutting out of the castle wall where royalty would go to deposit their waste. The waste would be dropped into the stagnant moat water below, adding yet another impediment to any enemy foolish enough to consider storming the reeking ramparts.

Many in England breathed a sigh of relief (and a whiff of fresh air) when Harrington came along with his idea. The queen installed Harrington’s invention—a raised bowl with a small pipe in which water ran down when released by a valve—in her Richmond Palace. It would be another three centuries until the appropriately named Thomas Crapper improved on the design and it began to catch on.

Today, we think of the flush toilet as a necessity and can hardly imagine our lives without it. But in truth, only 60 percent of the world has access to “proper sanitation”—that is, indoor toilets. There are many in the world using, if not garderobes and Roman communal bench toilets, their own versions of the chamber pot—something to keep in mind the next time you get up for your “big necessity” on a cold, dark night. ●

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*Listen to what Tribute's customers are saying:*



Tribute's relationship with Dixon helps us streamline our supply chain and saves us money



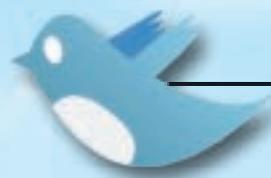
Tribute's knowledge of the hose and accessories industry ensures that their product development focus will continue to help optimize our business



We love that when we call Tribute that the support reps know us and our business; and that goes a long way toward helping us grow



TrulinX from Tribute more than paid for itself in the first year alone by helping us reduce our operating costs and grow top line revenue



Tribute's support staff is quick to respond, knowledgeable and fun to work with and the counter sales feature allows us to better serve our customers



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