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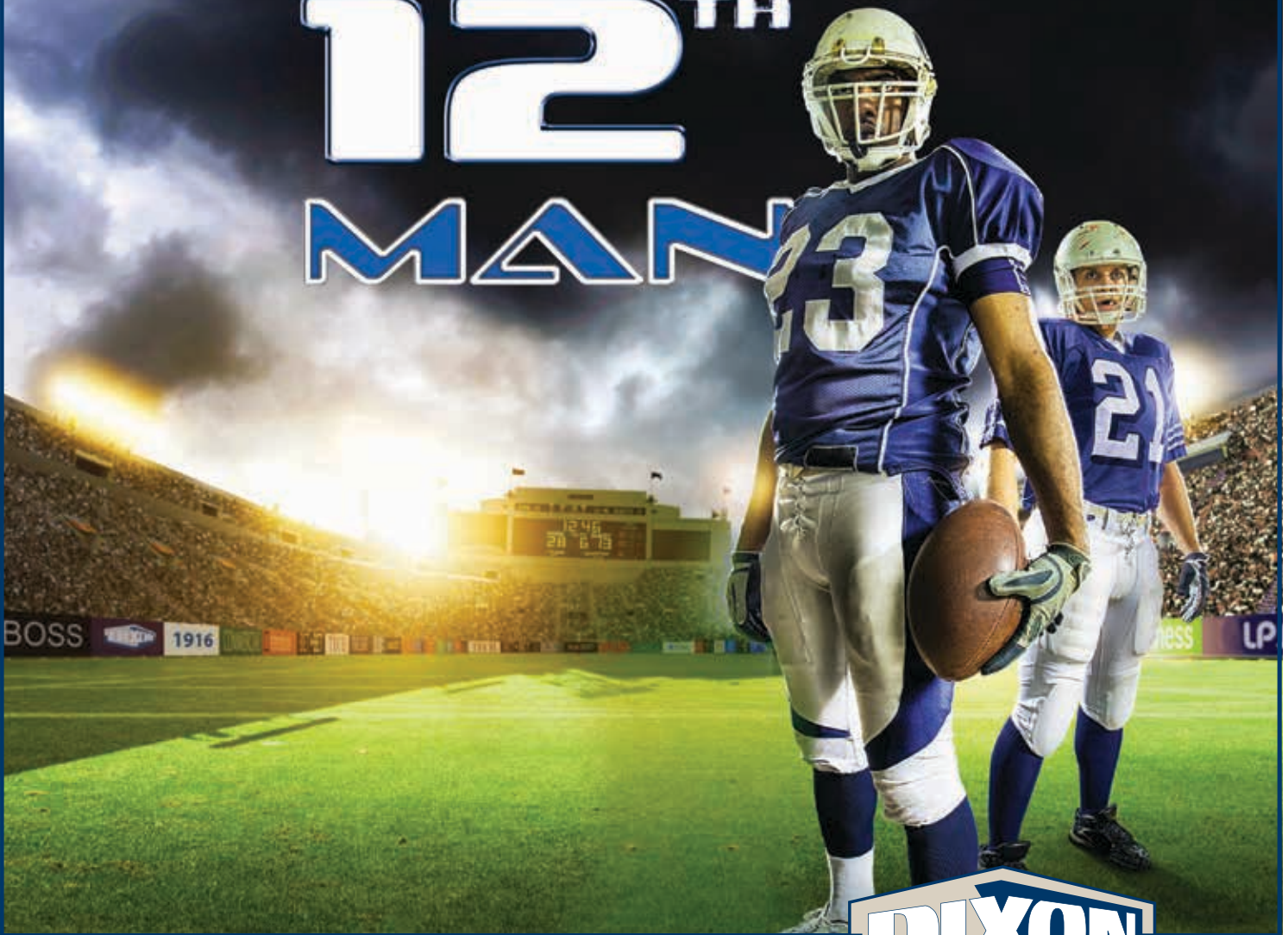
Strong, malleable, plentiful and cheap, steel made possible the age of mass production

FALL/WINTER 2015  
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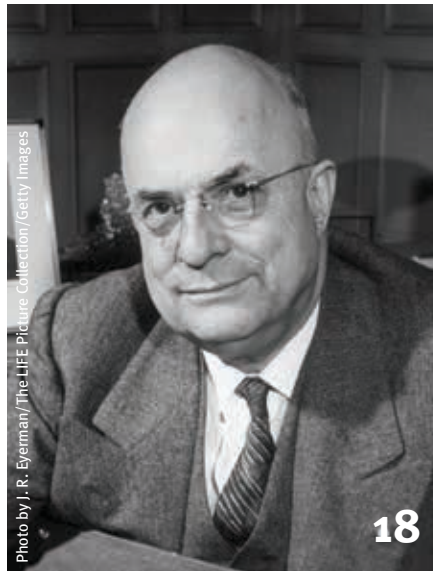


Photo by J. R. Eyerman/The LIFE Picture Collection/Getty Images

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## TRUE CHARACTER

**Children aren't born with strong character.** It is up to the adults around them to model good character and to encourage them to avoid the easy path in favor of the true one.

To see the character-building process in action, you need only turn to p. 5, where we feature the youngest writers we have ever published. Our Building Character department this issue is devoted to local students (from 2nd grade to 12th grade) who have written about what good character means to them. In these essays the children share their understanding of the Six Pillars of Character (trustworthiness, respect, responsibility, fairness, caring and citizenship). They talk candidly about how they have been tested, how they've occasionally fallen short, about the role models who guide them, and about the insights they've gained.

Together with 40 other Dixon employees, I volunteer as a Character Counts coach in our local school system and it never ceases to amaze me the wisdom our children possess. As adults, we need to make sure we continue to focus on these values in our daily interactions with our families and at work. Living these values builds a firm ethical foundation and leads to a life of wellbeing.

I hope you enjoy this issue of *BOSS* magazine and thank you for your business!

Thanks for reading,

*Dick Goodall*

# BOSS

**FALL/WINTER 2015**

ASIA/PACIFIC – SUMMER 2015

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**ON THE COVER**

Hot steel in a rotary furnace at a steel plant in Baltimore, Maryland.

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## Lessons Learned

Each week, dozens of Dixon employees spend time in Kent County, Md. public schools sharing insights with students of all ages about the “Six Pillars” of good character, as outlined by the national “Character Counts!” curriculum. Their volunteer efforts clearly have an impact, as you’ll read in excerpts from the following student essays, which were honored with awards at the end of the 2014-2015 academic year.

### > “My Grandpa Knows About Character”

A few years ago my grandpa retired from the Board of Education in Queen Anne’s County. Since he retired he has spent a lot of time with me and those who need him. He has been important in my life and has helped me learn about character.

Sometimes I argue with my sister. My grandpa encourages us to talk out our problems without whining. This is one way he teaches us about fairness.

I am learning about respect: when I see my grandpa shake hands, look others in the eye when they are speaking and by watching him hold doors open for me.

My great-grandfather needs rides to the doctor and my grandpa says it is our responsibility to take him and make sure he is cared for. I help by bringing him food and drawing cheerful pictures.

When you do what you say you are going to do it also makes you trustworthy. Every Sunday, my grandpa and I go visit my great-grandfather. He knows we won’t forget so he always has delicious doughnuts waiting.

My grandpa and I went shopping and bought presents for the girls down the street. We don’t know them, but we thought they would be excited on Christmas to see the gifts so we sneaked on their lawn and left them presents. We felt as though they might not get other presents under the tree like most kids. My grandpa said looking out for our neighbor is part of good citizenship.

Finally, my grandpa teaches me about caring by watching my sporting

events, holding my hand when we cross the street (even though I can make it myself) and bringing me milkshakes when I am sick. My grandpa knows about character and has made the time to teach about it also.

—Sydney Carr, 2nd Grade

### “Every Person’s Opinion is Worth Hearing”

Respect is something we need to have for both others and ourselves. When we have respect for ourselves and other people we are able to be upstanding members of our community.

I understand that teachers can become frustrated when students are disrespectful and do not listen. It is important to be respectful when others are speaking and listen to what they have to say. Not only is every person’s opinion worth hearing, but we also should want others to give us the same respect and treat us the way we would want to be treated. Five ways to tell whether a class is respectful or not is to observe if they are raising their hands, quiet, seated, keeping their hands to themselves and listening to the person who is speaking. In my experiences, it is much easier to learn in a classroom full of respectful students.

—Isaiah Hackett, 7th Grade

### “I Look Up to My Dad”

My dad is a man of character. He is a great man, and I learn a lot from him. My dad teaches me how to be a great man. He teaches me not to be afraid of anything and to face my fears. He has

not been there all my life, but he has been there through the hardest times.

I was only 2 when my dad left my brothers and me with our mom [in Africa] to come to the United States. And being a responsible father, he remembered us the whole time he was there. He never forgot about us little boys and his wife he left back home. He sent us money to go to school and to feed ourselves. Seeing how great this country was and also being a great dad, he brought us here to enjoy it with him. Finally, I actually spent time with my dad who I barely remembered.

I look up to my dad and he shows me perfect examples of how to act. My dad cares for his family, but he also cares for others. I remember about four months ago, there was a huge explosion in our Laundromat and the whole place caught on fire. There was a young lady in the fire screaming for help and none of the neighbors made any attempts to help the lady or even put out the fire. It would take the firefighters a long time to get there, but my dad, being a caring neighbor, couldn’t wait around while someone needed his help. He ran out of our apartment with a huge blanket and helped the lady. He carried her up to her apartment so she could change because her clothes were burned and there was blood all over her. What surprised me the most was that my dad didn’t expect anything out of this. He did it because it was the right thing to do.

—Gbenga Taiwo, 9th Grade

More essays on page 22

# 'Liberty's High Price'

As a prisoner of war in Vietnam, Captain Rocky Versace refused to bend to his captors

> Army Capt. Humbert Roque "Rocky" Versace was a soldier's soldier—a West Point graduate and a Green Beret who lived and breathed the code of duty, honor and country.

But it was during Versace's two years as a prisoner of war in Vietnam that the intelligence advisor truly distinguished himself.

Captured by the Viet Cong two weeks before he was scheduled to return home and enter the seminary, Versace was forced to live in a tiny bamboo

crate and was bound, gagged and starved. Over the course of nearly two years, he tried to escape four times, swore at the enemy in three languages, rejected their attempts at brainwashing and served as an inspiration to his fellow prisoners not to give up. On the night before he was executed, Versace could be heard singing "God Bless America" at the top of his lungs.

Versace was awarded the Medal of Honor, a first for a prisoner of war,

for his bravery while in captivity in Southeast Asia.

"In his defiance and later his death, he set an example of extraordinary dedication that changed the lives of his fellow soldiers who saw it firsthand," President George W. Bush said on July 8, 2002, when he awarded the medal more than 35 years after Versace's death. "His story echoes across the years, reminding us of liberty's high price and of the noble passion that caused one good man to pay that price in full."

Versace was born on July 2, 1937, in Honolulu to Marie Teresa Rios, an author, and Col. Humbert Joseph Versace. The oldest of five children, he grew up in Alexandria, Va., Germany, and Norfolk, Va., and graduated from Norfolk Catholic High School. Even as a kid, Rocky had a strong sense of moral duty and could be headstrong, his brother Steve recalled. "If he thought he was right, he was a pain in the neck. If he knew he was right, he was absolutely atrocious."

Like his father, he attended the United States Military Academy at West Point, graduating in 1959, and was commissioned a second lieutenant of armor in the Army. Versace graduated from Ranger School (he would posthumously be inducted into the Ranger Hall of Fame in 2013) and then attended Airborne School, where he earned a parachutist badge. In 1962, he volunteered for duty in Vietnam. When his first year of duty ended, he volunteered for another six months. He intended to enter the priesthood when his tour ended and return to Southeast Asia to work with orphans.

Versace never got the chance.

Rocky Versace is all smiles after receiving his combat infantryman's badge in 1963 and before his second tour of duty in Vietnam.



On Oct. 29, 1963, while on a mission to attack and remove a Viet Cong command post in U Minh Forest, Versace's unit was ambushed and overrun by enemy troops, and he was wounded. Versace was captured and taken into the jungle with two other U.S. soldiers, Lt. Nick Rowe and Sgt. Dan Pitzer.

Despite his injuries, Versace tried to escape, even attempting to crawl to freedom when he could not walk. His captors wanted him to confess to crimes he did not commit so they could use his confessions as propaganda. He refused.

"He told them to go to hell in Vietnamese, French and English," Pitzer told a historian. "He got a lot of pressure and torture, but he held his path. As a West Point grad it was duty, honor, country. There was no other way. He was brutally murdered because of it.

Versace died on Sept. 26, 1965. His remains were never recovered.

He was nominated for the Medal of Honor in 1969 but received the Silver Star instead. His family and friends were devastated that the Army would not award Versace the nation's highest military decoration for combat valor. So in 1999 they renewed their effort to get him the recognition he deserved.

When Versace was finally honored with the Medal of Honor some 38 years after his capture, they knew his memory would live on.

"We never gave up, that's what it all comes down to," supporter Duane Frederic told *The Washington Post*. "Everybody understood that this man really deserves the Medal of Honor. And now we have closure.

**"He got a lot of pressure and torture, but he held his path. As a West Point grad it was duty, honor, country."**

Their work was complicated by the initial stigma surrounding the Vietnam War and by the fact that the two men with whom Versace was imprisoned were dead. But his supporters persevered.

In the end it's all about these soldiers who died with their boots on fighting for our freedom. We should never forget that." —

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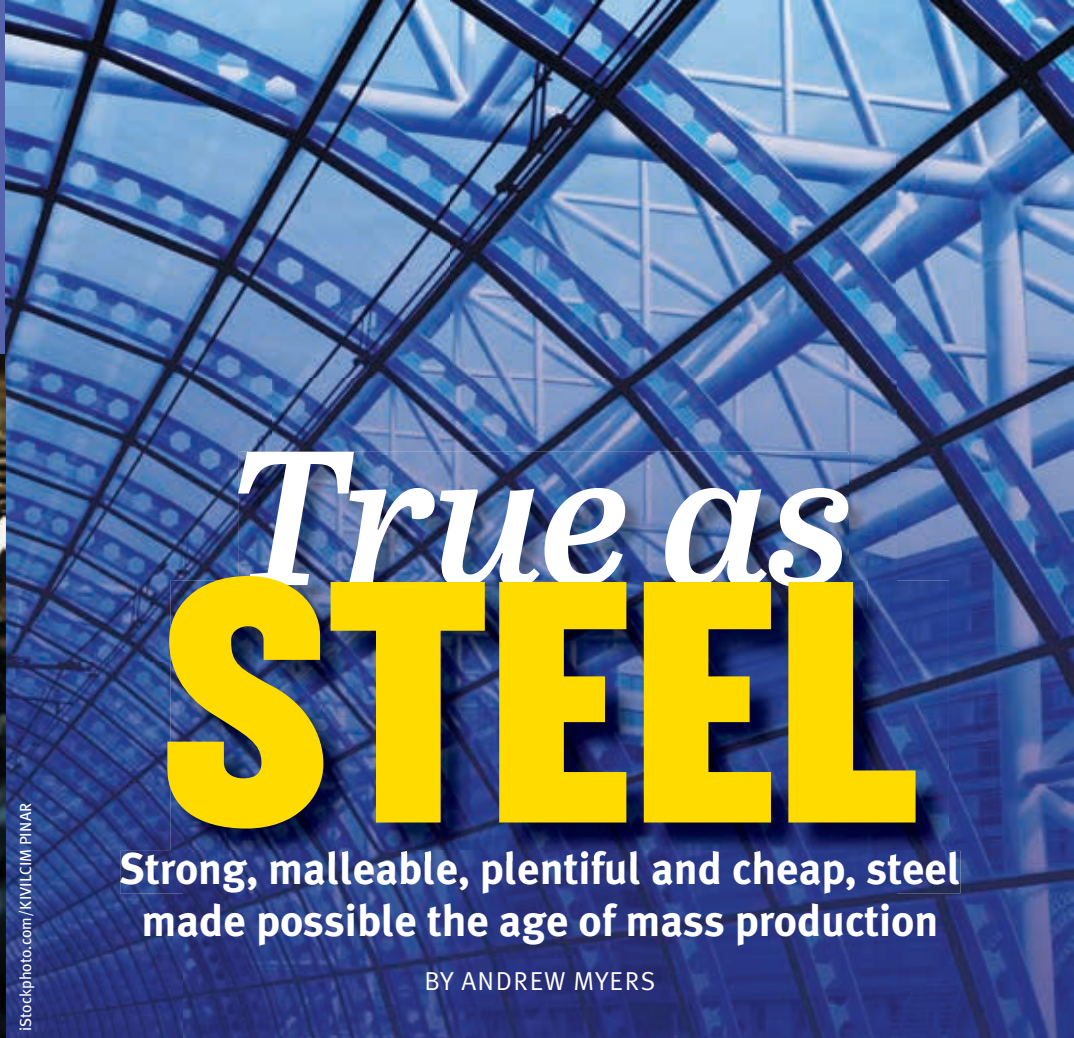


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# True as **STEEL**

Strong, malleable, plentiful and cheap, steel made possible the age of mass production

BY ANDREW MYERS



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One day in the mid-1850s, Henry Bessemer gazed into his blazing furnace, expecting to see a glowing bath of molten pig iron, the high-carbon precursor to wrought iron. Despite the intensity of the furnace, he noticed that several pieces of the raw metal had not liquefied. Stoking the fire by opening the air vent, he left to attend to other business. A half-hour later he returned, only to find the same pieces—still unmelted.

Bessemer jabbed at the pieces with a poker and realized they were not pig iron at all but highly purified iron—the raw material of steel. The carbon had been burned away. Intrigued by what he had witnessed, Bessemer surmised that oxygen in the blast of air had ignited the carbon in the pig iron and burned it up, like a brick of charcoal, leaving behind almost pure iron.

Henry Bessemer had purified iron with nothing more than a blast of hot air. It was cheap. It was simple. It was transcendent. Steel would become the raw material of a second industrial revolution. The course of history had been altered by happenstance.

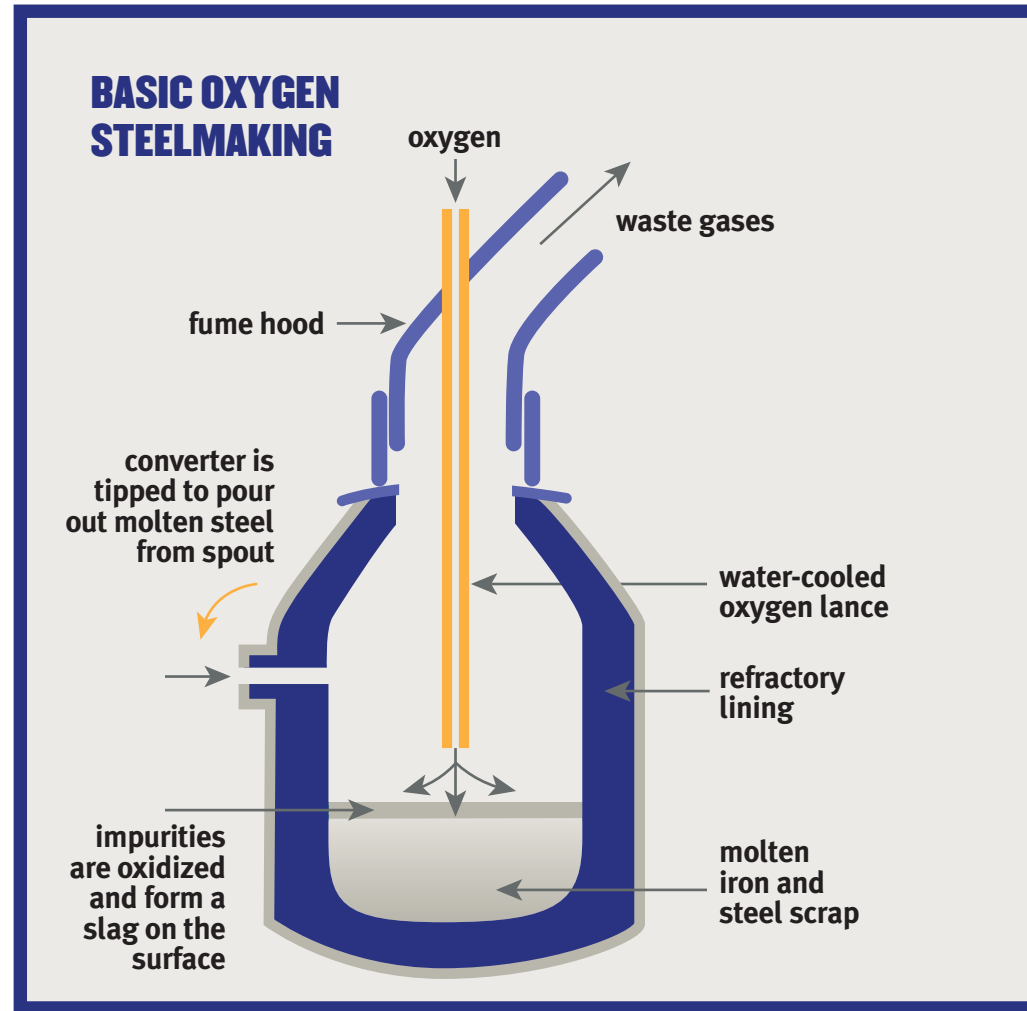
### THE STUFF OF MODERN LIFE

In many ways, the familiar things of today's world—railroads, bridges, battleships, skyscrapers, electrical grids, cars, washing machines, bicycles and much more—chart their technological underpinnings to Bessemer's workshop in Sheffield, England.

Bessemer did not invent steel that day; he only discovered—some say he rediscovered—a method to make it cheaply and in quantity. Others would claim to have discovered the magical effect of air bubbling through molten iron before Bessemer, but it would be Bessemer who patented and commercialized the process and whose name would be forever linked to the economical mass production of steel.

"Steel was strong. Steel was malleable. And now, thanks to Bessemer, steel was plentiful and cheap. Over the next century, steel became woven into the economic, social and physical fabric of American life and became the signature material of the second industrial revolution—the age of mass production," notes Thomas J. Misa, a professor of the history of technology at the University of Minnesota and author of *A Nation of Steel: The Making of Modern America 1865-1925*.

Steel is, in fact, not a single thing at



all, but many. There are some 3,500 varieties of steel, according to the World Steel Association, each with its own properties. Some steels are lighter. Others are hard like glass. Some steels are stiff. Others endure great torsions and tensions. Some steels are rigid. Other steels are lithe and springy. Some steels can be honed to the sharpest edge. Others never rust.

Steel is also a metal of stunning

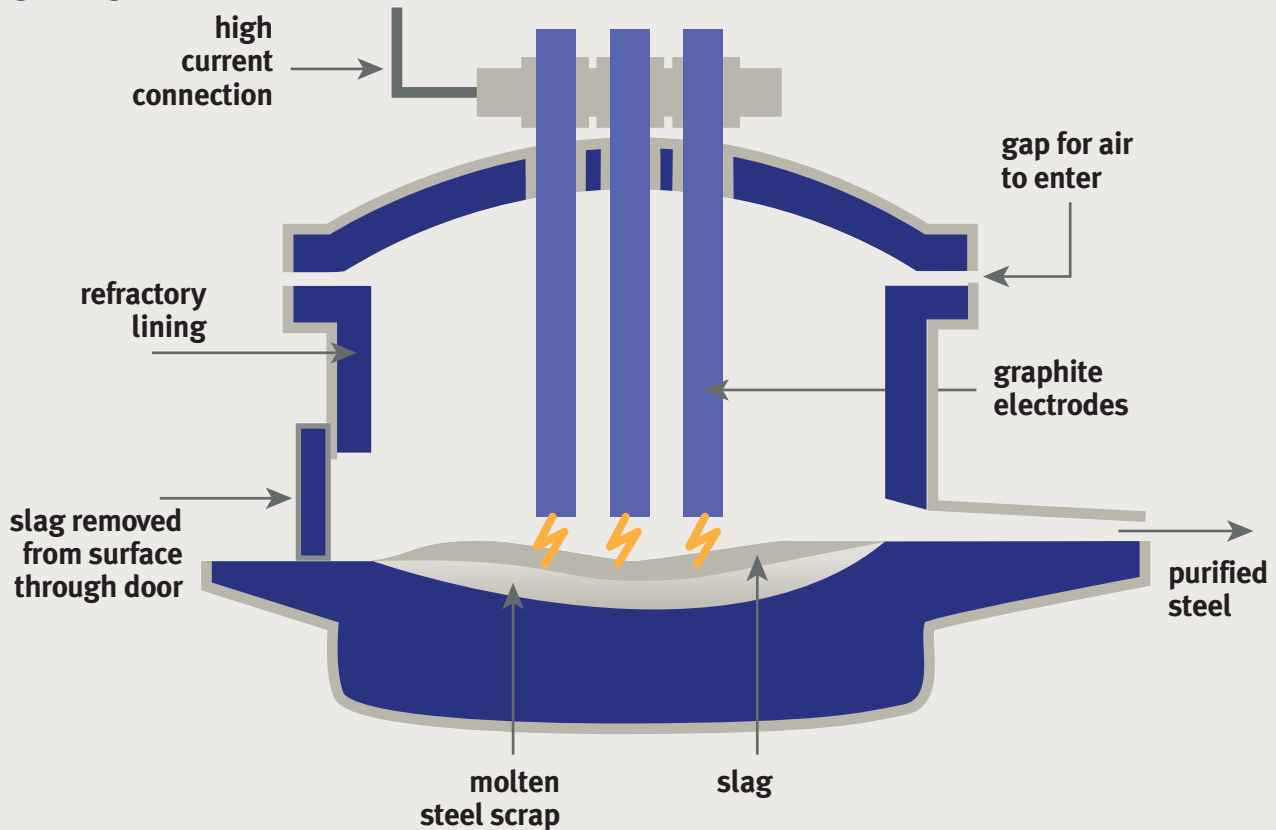
versatility. Steel can be shaped into rigid beams able to support the tallest skyscrapers. It can be rolled into thick plates for the hulls of ships or thin sheets for household appliances and cars. It can be forged into myriad tools. It can be coiled into springs. It can be spun into wire.

In chemical terms, steel is comprised of iron and carbon. The relative amount of carbon largely

**Steel is, in fact, not a single thing at all, but many.**

**There are some 3,500 varieties of steel, according to the World Steel Association, each with its own properties.**

## ELECTRIC ARC FURNACE



determines the hardness of any given steel. Low-carbon steel is ductile and workable. Additional carbon makes steel hard as, well, nails, which can also be made of steel. Above 2 percent carbon concentration, steel becomes brittle. In fact, it becomes a different product altogether: cast iron.

Over the course of the next 100 years, other metals and minerals would be added to the mix. Alloys of tungsten, vanadium, chromium, molybdenum, nickel, silicon and manganese have each extended steel's potential.

### FEEL THE HEAT

Steel begins its life in the ground as iron oxide ore with names like hematite, limonite, magnetite and so forth, each varying according to its iron content. Taconite, an ore relatively low in iron, is the primary ore used in U.S. steelmaking.

The first step in making today's steel is to refine the low-grade taconite ore itself, which is pulverized to dust and the iron separated, as much as possible, by huge magnets, a practice dubbed "benefication." The resulting powder is roughly 60 percent iron. It is mixed into clay-like dough and rolled and baked into half-inch pellets, all ready for shipping to feed the gaping maws of the steel mill's furnaces.

Today, there are two major commercial processes for making steel:

**Basic oxygen steelmaking** is done in blast furnaces, and involves blowing oxygen through molten pig iron or scrap steel; this lowers the alloy's carbon content and changes it into low-carbon steel. During this process, coke, limestone and other "fluxes" are added. These bind to the impurities and rise out of the molten iron as slag. Mills that

use blast furnaces to make new steel from iron ore are known as *integrated steel mills*.

In **electric arc furnace (EAF) steelmaking**, electric energy is used to melt solid scrap and/or direct reduced iron (DRI) inside a giant refractory-lined vessel. These huge vessels (capacities average about 100 tonnes) are usually cooled by water. Often the resulting molten steel is further refined in a *ladle metallurgy* process. Mills that use electric arc furnaces to melt and refine scrap metal are known as *mini mills*.

In 1970, mini mills accounted for just 10 percent of U.S. steel production, according to the U.S. Environmental Protection Agency. By 2006, more than half of the nation's steel output was produced in mini mills. Among the advantages of EAF steelmaking is its gentler impact on the environment:



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## ***A “Green” Approach***

Recycled scrap constitutes over 90 percent of the material input of electric furnace steel producers, according to the Steel Manufacturers Association. Last year, the entire U.S. steel industry recycled roughly 70 million tons of ferrous scrap, with approximately 80 percent of that consumed in electric arc furnaces.



Henry Bessemer

According to the Steel Manufacturer's Association, mini mill steel production results in 65 to 90 percent reduction in greenhouse gas production when compared with steel production from iron ore.

Most recently, a consortium of European steelmakers have turned to using the *HIsarna steelmaking process*, which uses a new type of blast furnace known as the *cyclone converter furnace*. It allows steelmakers to skip the process of manufacturing pig iron pellets, the feedstock in basic oxygen steelmaking. As a result, the HIsarna process uses less energy and is less deleterious to the environment than the traditional process. While HIsarna steelmaking is still in the early stages of implementation, the European Union hopes to have HIsarna plants up and running widely by 2020.

### THE BREAKTHROUGH

In order to fully understand the steel-manufacturing picture today, it is helpful to step back in time to explore the path that led us here.

Achieving the refinement necessary for steel proved so difficult and so expensive for so long that steel remained



Bessemer converter

largely a luxury for thousands of years—the champagne among industrial metals. Nearly 3,000 years elapsed between the discovery of iron and the day in 1856 when Henry Bessemer announced his process for purifying steel before the British Association for the Advancement of Science.

A Bessemer converter looks like a 20-foot, jet-black Easter egg topped with a crooked stovepipe hat. Molten pig iron is poured into its belly. At the bottom of the converter is a series of vents, known as tuyeres. Air is blasted up and into the molten pig iron through the tuyeres. When air hits metal, sparks fly—literally.

“The first element attacked by the atmospheric oxygen is the silicon,” Bessemer wrote, describing his fiery process. “Its combustion furnishes a great deal of heat; but it is very undemonstrative, a few sparks and hot gases ... But after ... ten or twelve minutes, when the carbon ... is seized on by the oxygen, a voluminous white flame is produced, which rushes out of

the openings ... and brilliantly illuminates the whole space around.”

With oxygen as fuel, the carbon burned white-hot, and the Bessemer converter spit and spewed until the impurities were incinerated or fused with the fluxes. Thus, pig iron was purified into steel in a matter of minutes without need of any additional fuel or heat.

### THE REVOLUTION

By 1865, Andrew Carnegie was already a wealthy man when he “retired” from the Pennsylvania Railroad. At the tender age of 30, he had purchased the Keystone Bridge Works and the Union Ironworks. Witnessing the bridge-making torch being passed from wood to iron in the preceding years, he anticipated a deluge of demand for iron. He was little prepared for the revolution to come.

Just three short years after buying the iron companies, while on a trip to England, Carnegie toured Henry Bessemer's steel operation in Sheffield.



## GOING VERTICAL

Andrew Carnegie was the master of operational efficiency. To that end, he was among the first to vertically integrate his company, owning every piece of the production puzzle.

Carnegie owned the steel mills, of course. But he also laid claim to mineral rights in the iron ranges of Minnesota, almost a thousand miles away. He commissioned an armada of steamer ships to ferry the ore across the Great Lakes. He bought coalfields, too. And he commanded a personal railway to shuttle all these raw materials almost directly into the mouths of his hungry furnaces.

It was a model of efficiency that others would mimic, but which could not last. While vertical integration helped Carnegie, Rockefeller, Vanderbilt and others build their empires, soon Teddy Roosevelt and the “trust busters” would see to it that vertical integration was outlawed and the monopolies of the Gilded Age were divided into independent entities.

It was as if he had received a bolt of lightning. Carnegie immediately grasped the import.

Lighter, stronger, cheaper steel would soon replace iron. Steel was to be the future, and Andrew Carnegie would become its patron saint.

Just one year later, in 1869, the golden spike was driven at Promontory Point, Utah, and a single railway united East and West. It was soon possible to travel or to ship goods from the East Coast to the West Coast by train in a

week’s time, whereas before it took a month or more.

In the ensuing decades the spindly tendrils of the U.S. railway system would creep into virtually every crevice and corner of the country. Much of that rail would eventually be produced by Andrew Carnegie’s burgeoning Bessemer steelworks on the banks of the Monongahela River near Pittsburgh.

As the rail network crept across the country, like a capillary system for capitalism, demand for steel grew apace.

Carnegie was swamped with orders, unable to meet demand for years to come.

Like all industrial boom times, the spreading railway network eventually reached a plateau. There simply were no more corners to reach. Just when things seemed darkest, a new market for steel arose, quite literally, from the streets of Chicago. New buildings were going up, supported by lightweight, incredibly strong steel skeletons that fostered a new era of architecture.

In the last two decades of the 19<sup>th</sup> century, it was as if spring had arrived in America’s urban centers, as architects used steel to build ever-taller buildings that grew into the air like fresh flowers to accommodate the influx of new residents and workers into the cities.

With the golden spike driven in 1869 (below), a single railway united East and West. Much of that rail would eventually be produced by Andrew Carnegie’s burgeoning steelworks.



## CHANGING DEMANDS

The advent of structural steel portended an era of change not only in the cities but in the steel mills as well. As good as the Bessemer process was at producing cheap steel in great quantity, it remained a crude technique and yielded steel of questionable quality, much of it unfit for structural uses in bridges and buildings.

New techniques were needed to meet the demand for higher quality. Soon, **open-hearth furnaces** affording better control of the refinement process began to replace the Bessemer systems



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that had ruled for nearly half a century. Carnegie soon retooled his factories to meet the demand of engineers, and a new type of open-hearth furnace would come to dominate production.

It was the turn of the century. Carnegie was in his mid-60s. Having bested all his rivals in the race to dominate the most important industry of his day, Carnegie had triumphed. His arch nemesis, financier J.P. Morgan, perhaps the only man in the world able to muster the financial resources necessary to buy Carnegie out, did just that.

Morgan was so desperate to have the nettlesome Carnegie out of the way that he let Carnegie name his price: \$480,000,000—the equivalent today of about \$13 billion. Morgan accepted without negotiation. Andrew Carnegie was out of the steel business. His share of the sale price, \$225,639,000 (roughly \$6.4 billion today), made him the richest man in the world.

It was 1901, the first year of the

American century. U.S. Steel was born—the world's first billion-dollar company.

### A LUMBERING GIANT

If anything, the story of steel is the story of a remarkably versatile metal that, for a century, rose to meet every challenge placed before it.

No sooner had demand for steel

precipitating a need for new types of steels worthy of the twisting and ripping physical abuses unique to the car. The auto industry responded with alloys like Henry Ford's torsion-resistant vanadium steel.

The 1920s saw a resurrection of structural steel as skyscrapers stretched higher into the sky than ever before (See

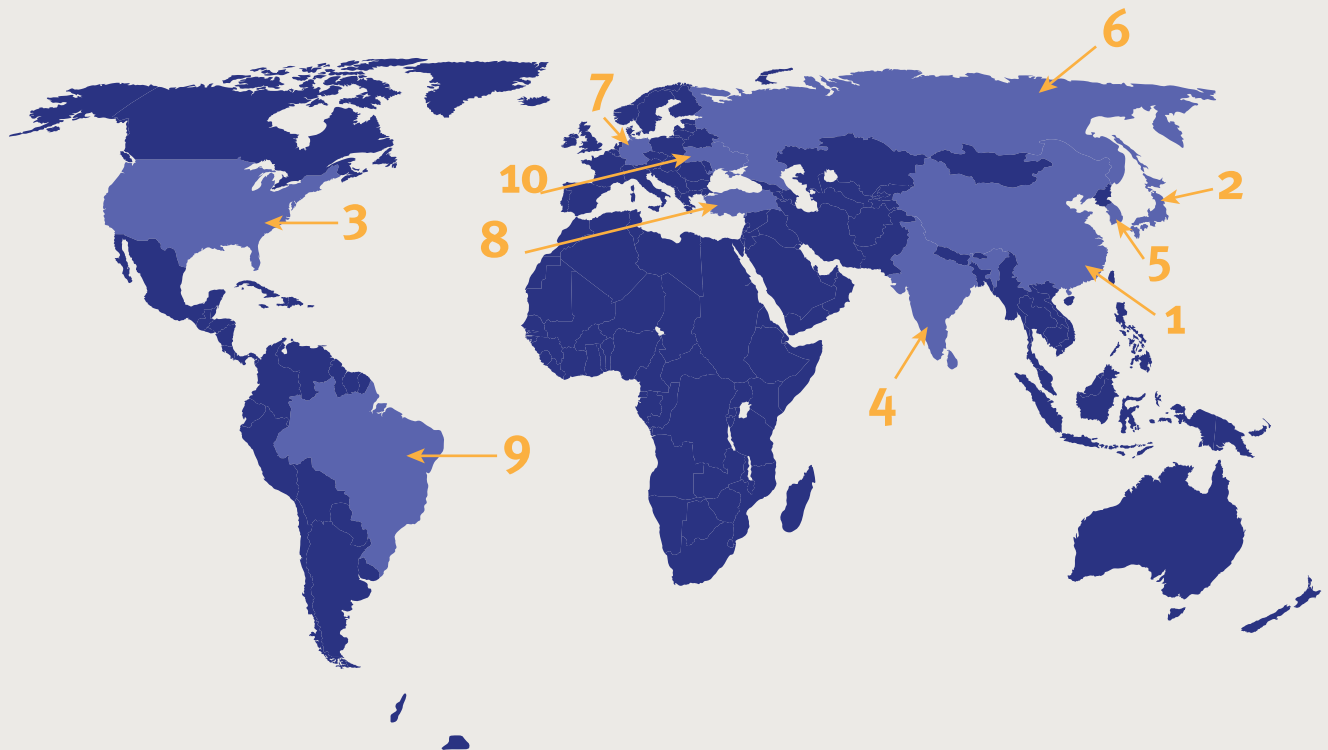
## The 1920s saw a resurrection of structural steel as skyscrapers stretched higher into the sky than ever before.

rails waned than structural steel arose. When that demand dissipated, a rush to build modern navies clad in thick layers of hardened steel supplanted it. When all the navies had been christened, the automobile industry blossomed,

“The Sky's the Limit,” Fall 2007). Later, as electrification spread across the nation, new alloys of iron and silicon shaped that industry.

In recent years, the story of steel has

# Top 10 Steel-Producing Nations 2014



<b>COUNTRY</b>	<b>PRODUCTION (millions of tons)</b>
1 China	822.7
2 Japan	110.7
3 United States	88.3
4 India	83.2
5 South Korea	71
6 Russia	70.7
7 Germany	42.9
8 Turkey	34
9 Brazil	33.9
10 Ukraine	27.2

Source: World Steel Association



been a race to find less expensive production models to compete with low-cost providers, primarily in China, which today leads the world in steel production by a huge margin. In 2014, China's state-owned mills produced more steel than the rest of the world combined: 822.7 million tons, which is significantly more than second-place Japan (110.7 million tons) and third-place United States (88.3 million tons).

U.S. imports of cheap Chinese steel have been on the rise for years, jumping 68 percent last year alone, according to *The Washington Post*. The result? Waves of pink slips for American steelworkers, and ongoing calls from U.S. steelmakers for trade sanctions against overseas competitors.

In an attempt to stay competitive, steel companies across the United States, including the venerable U.S. Steel (now the 13<sup>th</sup>-largest steel

producer in the world) have been refitting their decades-old blast furnaces with the new-age **electric arc furnaces**.

The more flexible arc furnaces recycle scrap steel from old cars, appliances and structural metal into new steel. They have the great advantage that they can be turned on and off as demand ebbs and flows. Such competitive agility has been particularly important in recent years as prices have plunged due to a worldwide glut fueled in part by declining demand for pipes from the volatile petroleum industry.

The prospect is not cheap. Each retrofit to electric arc furnace costs a quarter of a billion dollars.

As the U.S. steel companies struggle, it grows more apparent by the day that they will need to continue to transform themselves in the face of new realities. The shift to arc furnaces will be key to the growth of U.S. Steel—a company that traces its roots to

## DIXON PRODUCTS USED IN THE STEELMAKING PROCESS:

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Andrew Carnegie's mills along the Monongahela River.

Meanwhile, the great story of steel continues on, oblivious to the vagaries of history as the river itself. ●

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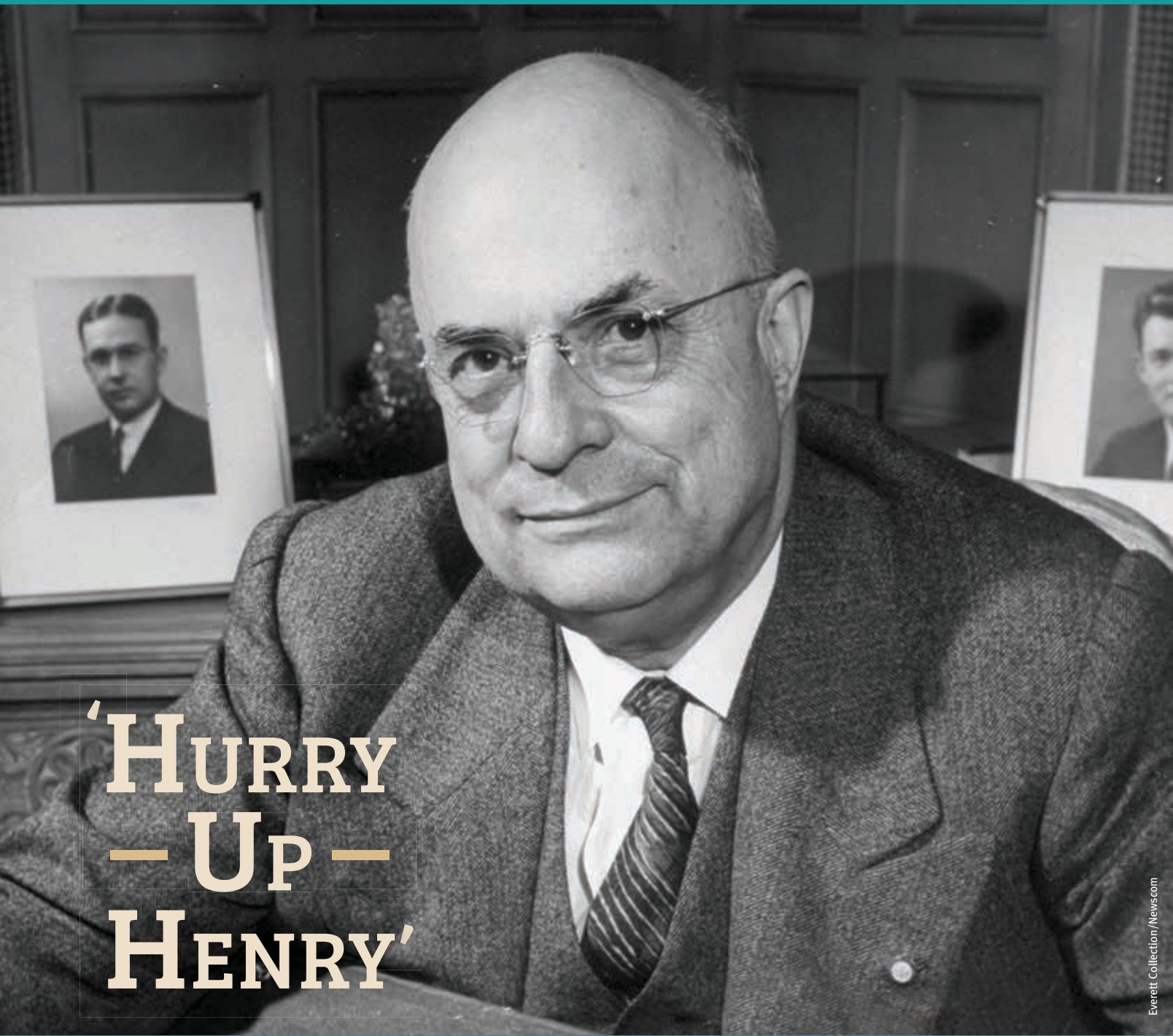
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The Right Connection®



Everett Collection/News.com

# 'HURRY — UP — HENRY'

HENRY J. KAISER USED HIS BRAINS AND UNFLAGGING ENERGY TO HARNESS THE AMERICAN WEST AND CREATE A FORTUNE—REMAKING THE COUNTRY IN THE PROCESS

BY DAVID HOLZEL

**F** Edgar Fosburgh, a wealthy East Coast merchant, drove a hard bargain. Before he agreed to let his daughter, Bess, marry an eager 23-year-old traveling salesman and storeowner named Henry John Kaiser, the young man would have to prove he had the talent to make a home for Fosburgh's daughter.

Kaiser could marry Bess if he could attain a monthly income of \$125 (\$3,400 in 2015), show assets of \$1,000 (\$27,100) and build a suitable home for his family. Fosburgh offered young Kaiser a piece of advice: Go West.

So in July 1906, Kaiser stepped aboard a westbound train, and when he reached Spokane, Wash., he got off. The closing of the frontier had been noted in 1890, but there were still wide swaths of the West barely touched by increasingly urban America. Spokane was at the edge, a railroad hub energized by the logging and mining industries in the state's rugged interior.

In Spokane, Kaiser talked himself into a bottom-rung job at a hardware company. He soon became its traveling salesman. Ten months after arriving in Spokane, Kaiser returned to Fosburgh, having fulfilled his part of the bargain. Kaiser and Bess married in Boston on April 8, 1907.

Throughout his life, Henry J. Kaiser made it an axiom to fulfill his promises ahead of schedule and under budget. As an increasingly successful and powerful industrialist, he built roads and then dams that tapped the potential of the still wild West. Later, as World War II approached, he built the ships that

helped determine American victory. And as the war neared its end, he turned his attention to the hunger for consumer goods that he was sure peacetime would unleash.

Unlike the Fords, Edisons and Carnegies, Kaiser has disappeared from the popular roster of Captains of Industry. His name is largely preserved in the health maintenance organization that he started in the 1930s: Kaiser Permanente. Although the model of a private health system was once denounced as socialist, Kaiser was a gleeful and practical

## He was a titan of industry who cooperated with organized labor and thrived on public works projects.

capitalist and an unusual self-made millionaire. He was a titan of industry who cooperated with organized labor and thrived on public works projects. His responsibilities brought him close to President Franklin Delano Roosevelt, who briefly considered Kaiser as his 1944 running mate.

In his heyday, Kaiser was the symbol of America's can-do spirit. "Hurry up Henry," a small-town son of German immigrants, used his brains and unflagging energy to harness the potential of the West and create a fortune—remaking the country in the process.

### A Life of Adventure

As the story of Kaiser's engagement to Bess Fosburgh suggests, his life can read like an adventure novel, as the irrepressible entrepreneur leapfrogged from project to project and from adventure to adventure.

He was born in 1882 in Sprout Brook, in upstate New York. His father, Franz (later Frank), and mother, Anna Marie (later Mary), were immigrants from Germany. Frank Kaiser worked as a cobbler, and he and Mary had three daughters before their son, Heinrich, was born.

The Kaisers lived in simple circumstances. Henry, as he was soon called, left school at 13. Some suggest that he cut short his education to help the family make ends meet. But in his later years, Kaiser pointed to his characteristic restlessness and self-confidence as his reason for going to work. "I thought I was ready to lick the world single-handed," he told an interviewer. "So I dropped out."

He found his first job himself, as an errand boy at a dry goods store in Utica, N.Y. He soon found work at a photography studio and then became a traveling salesman. At 17, he went into

partnership in a photography studio and then bought out his partner. It was as a photographer at a Lake Placid resort that he met Bess.

Once the couple had married and settled in Spokane, Kaiser began contracting for road builders. In 1912, when one of his clients, a road-paving company, went out of business, Kaiser talked a bank into giving him a loan to finish the job, even though he had never built a road in his life. He made a profit, too.

Kaiser entered the road-building business just as the government was voting money to expand the highway network to meet the demand of the increasingly popular automobile. Later, he started a sand and gravel company to supply materials for his road-building projects on the West Coast and in British Columbia.

Kaiser's business thrived because of meticulous planning, which helped ensure high-quality work, and because of technical innovations, like Caterpillar tractors, diesel engines and earthmovers, all of which saved money.

But "the most essential secret of Kaiser's business," writes Arthur Herman in *Freedom's Forge*, "was his immense skill in building relations with local, state and eventually federal officials. It was Kaiser who lobbied the California Legislature to pass a tax on

gasoline to help pay for new roads—the first such tax in the nation."

Kaiser's growing reputation led to his inclusion in a building consortium called Six Companies, which in 1931 won the contract to build the Boulder (later called Hoover) Dam on the Colorado River (see "Building Hoover Dam," Summer 2015). The project was monumental, and so would be the payoff. "Whoever succeeded on the Hoover Dam project could count on follow-up contracts," writes Tom Schanetzky, in his short biography of Kaiser on the website Immigrant Entrepreneurship.

President Franklin D. Roosevelt was on hand to cut the ribbon for Hoover Dam in 1935. Kaiser and Six Companies had finished the project two years ahead of schedule.

### How Fast Can You Build a Ship?

By the time Hoover Dam was christened, Kaiser was already working on the Bonneville Dam on the Columbia River between Washington and Oregon. After he had lost a bid to build the Grand Coulee Dam, also on the Columbia, "he found his way into the project by partnering with the winners," writes H.W. Brands in *Masters of Enterprise*. Similarly, when he lost a bid to build the Shasta Dam on the Sacramento

River in California, he became the cement supplier to the winners.

It was during the building of the Grand Coulee that Kaiser began the innovation that still carries his name. Dr. Sidney Garfield had been hired to provide medical care for Kaiser's workers and their families. He suggested to Kaiser that his employees set aside part of their paychecks for health insurance, which would also be extended to families.

That was the beginning of what became Kaiser Permanente, which eventually didn't limit its enrollment to Kaiser employees. In fact, by 1955, only 5 percent of those on the health plan worked for Kaiser's companies.

Henry Kaiser reached the height of his fame during World War II. From his shipyards at Richmond, Calif., and Portland, Ore., he supplied the national demand for vessels in the war effort, building 1,490 ships throughout the war. The vessels constructed included Liberty and Victory cargo ships, troop transports, landing ships, tankers and baby flattop escort aircraft carriers, according to Brands.

To build morale and increase production speed, Kaiser encouraged the two shipyards to compete. With 60 days as a wartime standard, the Portland yard determined to build a ship in 10 days. When it succeeded, the Richmond yard built one in four days, 15 hours and 26 minutes.

It was a publicity stunt, but it underscored the efficiency and teamwork of Kaiser's patriotic enterprise. During the war, Kaiser's was one of the most famous faces in the country. And with good reason, Schanetzky writes:

"A constant phone user with supposedly the largest long-distance phone bill in the American West, owner of the largest cement factory in the world, inventor of the longest conveyer belt in the world—where the press was hungry for superlatives, Kaiser obliged."

Kaiser was ready to turn all that energy into a post-war boom. "A pent-up consumer demand will be released, seeking satisfaction in every artifice and device we know how to make," he predicted in 1942.

**The Henry J Kaiser replenishes the Abraham Lincoln.**



So Kaiser went into steel and aluminum. He also ventured into the auto business, in 1945, forming the Kaiser-Frazer Corporation. Over 10 years, it produced 750,000 automobiles. But Kaiser, who had succeeded in other enterprises despite knowing little about them, miscalculated with the auto business. The Big 3 automakers were too entrenched, their sales and supply chains too complex for him to compete against.

And there was something else about the auto industry that differed from the roads and dams and ships he had built. "The one thing missing was generous government funding," Herman writes. "Kaiser learned that selling to the American public was more difficult than selling to the federal government."

Bess Kaiser died in 1951, and in 1955, Kaiser turned over control of the company to his son Edgar F. Kaiser



Henry and Bess Kaiser were present at the first graduation of the Kaiser Foundation School of Nursing

Kaiser Foundation

and moved to Hawaii. There he worked in real estate development projects. Kaiser died in Honolulu in 1967 at the age of 85.

Kaiser's success and fortune were products of the incredible growth of the West in the first half of the 20<sup>th</sup> century. "He was a powerful and

complex man who charged full bore and seemingly without rest through the best part of the 20th century, generating big ideas, mastering big projects and projecting an endless supply of big dreams," wrote Michael Dobrin, curator of a 2004 Oakland Museum of California exhibit on Kaiser's life. ◀

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### Applications:

- Used in food processing, dairy, beverage, wineries, breweries, personal care, chemical and industrial applications

### Features:

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- Patented squeeze clamp
- Low spare part cost
- Temperatures:
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- Various pressure ranges from 0 - 300 PSI
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### Materials:

- Product contact: 316L
- Non product contact: 304
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The Right Connection®

From page 5

## “Without Responsibility, a Person Will Struggle Through Life”

The older I get, the more I realize how much I am going to need to take care of myself. My grandparents and my parents are not always going to be there to make sure I make the right decisions or to give me money when I need it; to buy me clothes or food; to keep a roof over my head; or to take me where I need to go.

The pillar of responsibility is one of the most important things a young person must learn. Without responsibility, a person will struggle through life. My parents have taught me that. I have watched their struggles because they have spent time in their lives where they chose what they wanted rather than fulfilling their responsibilities. This not only affected them, it affected our entire family, particularly my younger brother and me. Some of their choices are what have caused our family huge change.

I feel fortunate to be able to learn from some of their mistakes.

This school year has been a huge wake-up call for me. I have catching up to do in school and I am going to do it. The wake-up call has caused me to set goals for myself and given me the drive to attain them. I need to work hard to get what I want and to prepare for a better future. I have a few bumps and bruises, but I am so happy and so relieved, and I feel such a sense of self-pride that nothing can stop me now!

—Cheyenne Eggers, 10th Grade

## “Good People are Good All the Time”

Good character is not a costume that an individual can put on and take off as they please. A person of good character

is not someone who chooses when and where they are going to do good things. A person of good character is someone who demonstrates good actions and encourages others to follow their lead. Good people are good all the time.

—Alexa Jones, 12th Grade

## “We Need More People of Good Character”

As I near the end of my high school career, I have seen the way kids are treated and how many people of good character there are around me. To be honest, there are not enough. I have seen bullying and fighting and witnessed students not showing respect to teachers and administrators. These actions remind me that we need more people of good character in our community.

During a soccer game this past season, we were playing against a good team that had a chance to go to the Bayside Championship if they defeated us. During the game their best player was penalized. He got extremely upset and screamed at the referee. This caused the player to get a red card and kicked out of the game. We now had a one-man advantage and ended up winning the game. If this player had better character and showed respect to the referee, there is a good chance his team would have gone on to the championship game.

Another moment that made me realize the importance of good character was when my class got a new student in seventh grade. He was from Africa. His first day of class, I saw him being mistreated and laughed at because he was different. “Character Counts” taught me to stand up for others and treat others the way I would want to be treated. My friends and I walked over and introduced ourselves to him. Since that day, we have been great friends and the credit goes to “Character Counts” for teaching me the most important rule, The Golden Rule.

—Jake Jones, 12th Grade

## Words Worth Sharing: On TRUST

“Few things help an individual more than to place responsibility upon him, and to let him know that you trust him.”

—Booker T. Washington

“Whoever is careless with the truth in small matters cannot be trusted with important matters.”

—Albert Einstein

“It is mutual trust, even more than mutual interest, that holds human associations together.”

—H. L. Mencken

“The best way to find out if you can trust somebody is to trust them.”

—Ernest Hemingway

“To be trusted is a greater compliment than being loved.”

—George MacDonald, Scottish author, poet and minister

“Never trust someone who lies to you. Never lie to someone who trusts you.”

—Anonymous

A little girl and her father were crossing a bridge. The father was a bit scared so he asked his little daughter: “Sweetheart, please hold my hand so that you don’t fall into the river.”

The little girl replied, “No Dad. You hold my hand.”

“What’s the difference?” asked the puzzled father.

“There’s a big difference,” replied the little girl. “If I hold your hand and something happens to me, chances are that I may let your hand go. But if you hold my hand, I know for sure that no matter what happens, you will never let my hand go.”

In any relationship, the essence of trust is not in its bind, but in its bond. So hold the hand of the person whom you love rather than expecting them to hold yours.

### PRODUCT SPOTLIGHT

#### Fuel Delivery/Vapor Recovery Elbows

**Applications:** Designed for fuel delivery and vapor recovery (6400)

**Sizes:**  
3" and 4" (coupler/adaptor inlets)

- Materials:**
- cast aluminum modular construction
  - brass handle and cam arms with buna gasket
  - acrylic sight glass with Baylast seals

- Features:**
- Available in standard or tall heights to accommodate deep fill boxes
  - Bolt on inlets allow the inlet to be changed without having to worry about galling of threads
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- For additional information, please call Dixon Bayco at 800-283-4966.



#### Did you know that ...

#### TRIVIA

- Turkeys have** 5,000 to 6,000 feathers.
- Turkeys are known** to exhibit more than 20 distinct vocalizations, including a distinctive gobble, produced by males, which can be heard a mile away.
- Individual turkeys** have unique voices. This is how turkeys recognize each other.
- Turkeys are intelligent** and sensitive animals that are highly social. They create lasting social bonds with each other and are very affectionate.
- Baby turkeys** (poults) flock with

- their mother all year. Although adult wild turkeys roost in the trees, poults are unable to fly for the first couple of weeks of their lives so the mother stays with them at ground level to keep them safe and warm until they are strong enough to roost up in the safety of the trees.
- Turkeys have** outstanding geography skills. They have the ability to learn the precise details of an area more than 1,000 acres in size.
- Like peacocks**, male turkeys puff up their bodies and spread their elaborate feathers to attract a mate.

- The long** fleshy object over a male's beak is called a snood.
- Wild turkeys** are able to fly at up to 55 mph, however only for relatively short distances. Most domestic turkeys, however, are unable to fly due to being selectively bred to be larger than would be suitable in wild circumstances.
- Benjamin Franklin** wished to have wild turkeys as the national bird of the United States, rather than the bald eagle.

onekind.org

"Most frequently used word at Thanksgiving dinner: Heimlich."  
—David Letterman

"Every Thanksgiving I'm thankful I decided to wait until New Year's to start my diet."  
—Melanie White

"Thanksgiving is an emotional holiday. People travel thousands of miles to be with people they only see once a year. And then discover once a year is way too often."  
—Johnny Carson

huffingtonpost.com,  
funny-jokes-quotes-sayings.com

### ON THE LIGHTER SIDE

#### 5 Things Nobody Wants To Hear On Thanksgiving

1. "There's no more room at the adults table this year."
2. "Everyone into the living room for the vacation photo slideshow!"
3. "The pie is all gone but we saved you a slice of fruit cake."
4. "The turkey is overdone."
5. "There aren't enough mashed potatoes to go around."

#### Funny Quotations

"I like football. I find it's an exciting, strategic game. It's a great way to avoid conversation with your family at Thanksgiving."  
—Craig Ferguson

"You can tell you ate too much for Thanksgiving when you have to let your bathrobe out."  
—Jay Leno

"A new survey found that 80 percent of men claim they help cook Thanksgiving dinner. Which makes sense, when you hear they consider saying 'that smells good' to be helping."  
—Jimmy Fallon

"The perfect way to get back at a man for forgetting Valentine's Day is to forget to cook Thanksgiving dinner."  
—Melanie White

### Dates in History

**1532:** On Nov. 16, Spanish explorer Francisco Pizarro took Incan emperor Atahualpa prisoner and demanded a ransom of gold. The Incans paid, but Pizarro murdered his prisoner in the name of Christianity. What Pizarro didn't destroy on that day was a treasure that remained concealed high up in the clouds, protected by the sun god. It was Machu Picchu, the last city of the Incans.

**1968:** On Nov. 17, the Oakland Raiders scored two touchdowns in nine seconds to beat the New York Jets. But no one saw it, because they were watching the movie *Heidi* instead. With just 65 seconds left to play, NBC switched from the game in favor of its previously scheduled programming, a made-for-TV version of the children's story. Viewers were outraged, and they complained so vociferously that network execs learned a lesson they'll never forget: "Whatever you do," one said, "you better not leave an NFL football game."

**2002:** Nov. 26 was the day that President George W. Bush issued a humorous but sincere presidential pardon to a lucky turkey that otherwise might have ended up on someone's Thanksgiving Day dinner table. In doing so, he continued a tradition begun in 1947 when the National Turkey Foundation first presented Thanksgiving turkeys to President Harry S. Truman.

www.history.com

# TEXAS BIG

**The Lone Star State is a traveler's paradise, offering sights, sounds and tastes to please every appetite**

BY ANDREW MYERS

**FROM THE DESERT MOUNTAINS** in the west to the wildflowers and wineries of Hill Country to the spectacular Gulf coastline, Texas is just plain big. How big? Well, a drive from the eastern border in Texarkana to El Paso, on the western border, is some 810 miles. The distance north to south is almost as great. By any standard, Texas is “Texas big.”

Packed among those stunning square miles is a traveler's paradise—a state bigger than many nations and a destination full of history and lore, sights and sounds, tastes and treasures in which a lucky visitor never has to cross a border to enjoy all that Texas has to offer.





Kenny Braun

### LIVE MUSIC CAPITAL OF THE WORLD

There's no better place to start than the capital, Austin, which springs from the gentle rolling hills of central Texas like an oasis. Austin is storied for its music scene and bills itself as "the live music capital of the world"—a claim that is no idle boast.

A walk down Sixth Street is to be awash in an ocean of sound. The songs of one live band after another spill out of the clubs that are stacked cheek by jowl for blocks. The melodies and harmonies swirl together into a pulsing din that becomes the sound of Austin, twisting up into the nighttime sky like a wisp of smoke from a red-hot ember.

The crowning glory of Austin hotels is the Driskill, which stands like an elegant gatekeeper at the corner of Sixth and Brazos, watching over the

music scene and all that lies beyond. Completed in 1886 by cattleman Jesse Driskill, the hotel is a testament to a bygone but not forgotten era. Its elegant wood-and-leather bar, complete with genuine cowhide couches and settees, is the perfect gathering place before—or after—a night of live music.

"Austin isn't alone at the top of

the Texas music scene either," says Cesaley Sparks, a spokesperson for the Texas Governor's Office of Economic Development and Tourism. "Fort Worth has its historic Stockyards, cowboys and dancers, which are known to collide at the world's largest honky-tonk, Billy Bob's, where live professional bull riding and country music rule."

Austin's Sixth Street nightlife



Kenny Braun



TxDot



iStockphoto.com/carbonero

The Salt Lick

## MAPPING TEXAS BARBEQUE

### EAST TEXAS:

Slowly cooked meat marinated in a sweet tomato-based sauce

### CENTRAL TEXAS:

Meat rubbed with spices and cooked indirectly over pecan or oak wood

### WEST TEXAS:

Meat cooked over mesquite wood

### SOUTH TEXAS:

Meat slathered with thick molasses-like sauce that keeps it moist

iStockphoto.com/Alex Belomlinsky



### BARBEQUE HEAVEN

When it comes time to eat, a Texan's thoughts naturally turn to barbecue. True to its cattle-raising roots, Texas-style barbecue is noted for beef brisket and ribs, but there is always plenty of pork, sausage and turkey to go around. In Austin, Franklin's is a favorite and has been showered with accolades; *Bon Appétit* crowned Franklin's nothing less than "America's best BBQ."

While Franklin's garners much attention, there are plenty of other deserving barbecue restaurants throughout the state—almost too many to count. For example, take a short drive into the hills beyond Austin to the tiny town of Driftwood. Here you will come along The Salt Lick, an unassuming joint that appears at first more like a glorified rest area

than an exceptional restaurant.

The first clue that The Salt Lick is something special is the row upon row of cars parked in the nearby field. The second is the delectable aroma of burning mesquite wafting from the open pit. Sidle up to a picnic table, order some smoked and grilled meat by the pound or by the plate, and soon enough, you'll be in barbecue heaven. Oh, and don't forget your cash and your beer. The Salt Lick doesn't take credit cards and is strictly BYOB.

Wherever you turn, you can't go wrong with Texas barbecue, says Mike Leach, a sound engineer from Austin and a self-described barbecue aficionado. "For BBQ in Austin, the real insiders know you've got to head down to Kruez Market or Smitty's in Lockhart. You and your arteries can thank me later," Leach says.



Kenny Braun

Horseback riding on the beach,  
South Padre Island



Kenny Braun

## THE GREAT OUTDOORS

While Texas is certainly known for the indoor activities of music and dining, there are also plenty of activities for outdoor-inclined travelers. Six hundred miles of Gulf Coast stretch from the Mexican border to Port Arthur, in the east. This vast coastline includes a little something for everyone—from sunbathing to surfing, world-class bird watching to deep-sea fishing.

Almost the entire coast is bounded by barrier islands. For tourists and vacationers, the most popular is South Padre, near the southern border. South Padre lays claim to 34 miles of continuous beach and plenty of jet skiing, diving, parasailing, golf and other activities for the whole family.

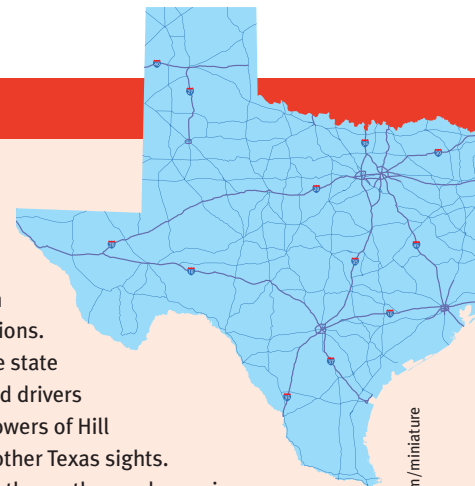
A little farther inland is Texas' famous Hill Country that rolls without interruption from north of Austin to San Antonio. "Summertime brings lots of

## GETTING AROUND TEXAS

Texas is a state that is larger than many nations, and travel from city to city can pose a challenge, especially for those with limited time. Luckily, there are a number of travel options, including airports in all major cities—Dallas, Fort Worth, San Antonio, Houston and Austin—for easy hops among the biggest destinations.

For those with more time and the desire to see the state close up, there are highways aplenty. Scenic routes lead drivers through the mountains of Big Bend Country, the wildflowers of Hill Country, the coastline of the Gulf of Mexico and many other Texas sights. Megabus is also a great alternative for those who want the on-the-road experience but not the driving.

Up north in the panhandle is historic Route 66. Along the way, be sure to visit the renowned art installation Cadillac Ranch, just outside Amarillo. And, for the true Texas experience, stop in to Devil's Rope Museum in McLean, a museum dedicated to the barbed wire that made cattle ranching possible at Texas scale.



iStockphoto.com/miniatu



TX Tourism

The Alamo



TX Tourism

San Antonio River Walk

locals and visitors seeking to escape the Texas heat by floating down the rivers in San Marcos and New Braunfels,” Sparks says.

Mexico’s army in 1836. Today, the Alamo stands as the most popular tourist site in the state. While there is indeed history galore in San Antonio,



## TODAY THE ALAMO STANDS AS THE MOST POPULAR TOURIST SITE IN THE STATE.

San Antonio is home to the Alamo, where Davy Crockett, Jim Bowie and cohort made their ill-fated stand against

this thriving city of nearly 1.5 million has much else in store, notably Riverwalk. A boardwalk on the San

Antonio River, it snakes for miles through downtown. It is among the most-visited places in the state, Sparks says, replete with luxurious hotels, fine dining, theme parks, nightclubs and entertainment for every taste.

As much as Texas tourism is about people and places and things to do, it is also about the terrain, which is every bit as big and rugged as the people who inhabit it. Natural beauty abounds in Texas. Big Bend National Park, among the most remote of American national parks, rests in the southwest, where the Rio Grande dips



Scenery in Big Bend National Park

Kenny Braun

southward to form the distinctive heel of Texas' southern border. Here, Texas' sprawling beauty is on full display, as the big river cuts a jagged path through the mountains of the Chihuahuah Desert.

Farther north in the panhandle is Palo Duro—the grand canyon of Texas—where the Red River dug into the north Texas plain. As it did, the river left behind a palette of painted rock dotted with wildflowers and hardy mesquite and juniper, from which the Palo Duro—Spanish for “hard wood”—gets its name.

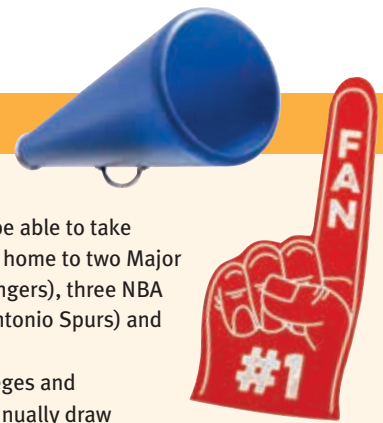
Yes, everything is bigger in Texas, and it would take a book to capture its charm and beauty and all there is to experience in the great Lone Star State. Rest assured, however, that whatever your Texas adventure holds in store, it is sure to be every bit as big and bright as the state that makes it all possible. ■

## THE SPORTING LIFE

Texans like their sports, and depending on when and where you visit, chances are good that you'll be able to take in an athletic event of some sort. After all, Texas is home to two Major League Baseball teams (Houston Astros, Texas Rangers), three NBA teams (Dallas Mavericks, Houston Rockets, San Antonio Spurs) and two NFL teams (Dallas Cowboys, Houston Texans).

As if that's not enough, the state's many colleges and universities boast dozens of athletic teams that annually draw hundreds of thousands of ardent fans to their games. At the high school level, Friday night football has become a phenomenon in itself.

In Texas, even the sporting arenas are oversized. While it's no longer possible to visit the iconic Houston Astrodome (once dubbed “The Eighth Wonder of the World,” it closed in 2006 and is now in decay), you can spend an afternoon touring AT&T Stadium, home to the Dallas Cowboys. Billed as the world's largest domed structure, the stadium offers tours during which you can throw a ball on the field, visit the Cowboy's locker room—and even admire its collection of contemporary art. Visit [attstadium.com/tours/](http://attstadium.com/tours/)



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## Vent-Lock Safety Cam & Groove

*Safety release couplings permit the controlled release of static pressure when disconnecting hose assemblies*

### Application:

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### Features:

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# A KING FOR THE AGES

*Henry VIII defined England and its legacy*

BY EUGENE FINERMAN

**H**e spared no man in his anger, no woman in his lust. Everything must yield to his will.”

That description, written in the 17th century, remains our impression of Henry VIII. He is the gluttonous lecher, a dirty joke of history, the raging tyrant who murdered saints and wives. Yet, that is only a caricature, not the full picture of Henry and his 38-year reign. His character may have been appalling, but goodness or even basic decency is not the measure of an effective king. And he was an effective king. By intention and consequence, Henry VIII defined England and its legacy.

In 1509, to the acclaim and admiration of his subjects, a 17-year-old Henry ascended the throne. He was a welcome contrast to his father. The late king—the seventh Henry and the first Tudor—had been an excellent ruler but was homely, drab and charmless. Succeeding that shriveled bureaucrat was a handsome, dashing monarch. He promised a glorious reign rather than a meticulous administration.

The young king had inherited a flourishing realm of 3 million subjects and a very efficient government. Henry VII had brought a Renaissance perspective to the rule of England. Royal offices once had been the prerogative of aristocrats, but to the shrewd king, intelligence meant more than pedigree. In place of hidebound nobles, he entrusted the administration of England to lawyers and scholars. The prudent old king had closely supervised the “new men.” His carefree young son abdicated the details to these bureaucrats. One of these new men—an Oxford-educated priest and the son of a butcher—was Thomas Wolsey. He would become Henry’s chief minister, managing the realm while the king indulged himself in sports and merriment. Serving his king (and himself), Wolsey acquired wealth and titles: Lord Chancellor of England and Cardinal of the Church.

## ***The Rampant Lion***

Until 1527, the 36-year-old Henry VIII seemed no more than a handsome playboy. Yet for all his frivolity, one serious matter weighed on him: the royal succession. In his 17 years of marriage to Catherine of Aragon, only one of their children had survived infancy: a daughter. By English law,



Henry ascended the throne at age 17.





Thomas Wolsey

Princess Mary could succeed her father, but English history refuted that possibility. The attempted succession of a queen in 1135 had led to rebellion and civil war. Henry VIII feared similar strife unless he had a son to follow him. Unfortunately, Queen Catherine was now of an age where she could not oblige Henry with further heirs. So Henry needed a new wife.

In other royal courts, inconvenient people often died of food poisoning. That, however, was not the Tudor way. Besides a certain regard for the exemplary Catherine, Henry VIII had an obsessive need for the appearance of legality. He demanded the sanction of an annulment. Catherine had previously been married to Henry's older brother, Arthur; several passages in Leviticus forbade such a marriage. Henry and his advocates would claim that this prohibition nullified the union. Other parts of the Old Testament did, however, condone such a marriage. Furthermore, the marriage of Catherine and Arthur had never been consummated. This really was a matter of diplomacy rather than theology. Where royalty was concerned, the Church could be obliging and grant an annulment, but both husband and wife had to agree to it. Catherine definitely did not. England's ambassadors went to Rome to ask for that annulment.

As the prisoner of Emperor

Charles V, Pope Clement VII was in an awkward position. Charles was the ruler of Germany, Austria, Spain, and the Netherlands, and now, thanks to his victorious army, the master of Italy and the pope. Charles also had a less formal but significant title: nephew of Catherine. He would determine the pope's decision. The emperor was not unduly sentimental, but he expected at least a suitable price for abandoning his aunt. We will never know the asking price because Cardinal Wolsey refused to ask. England made an insulting offer to return Catherine's dowry and nothing more.

Ignoring the emperor, Wolsey spent two years trying to persuade the pope. To garner legal support for Henry, Wolsey asked the legal scholars of Europe's universities to offer their opinions. Oxford and Cambridge found it prudent to support Henry; no other university did. Martin Luther offered his unsolicited opinion: He felt that the annulment was unjustified, but the Bible did permit Henry to have a second wife.

The cardinal's diplomacy had proved so surprisingly inept that he was suspected of trying to sabotage the king's case. An arrogant and greedy man, Wolsey had made many enemies, a situation that didn't worry him as

long as he had Henry's favor. Now he did not. Henry spared Wolsey the charge of treason, but the cardinal was stripped of his office and property. He was forced from London, exiled to remote, rustic Yorkshire. Broken in spirit, threatened with imprisonment, Thomas Wolsey died in 1530.

Wolsey had failed to coax an annulment; Henry now intended to coerce one. The Church had lost Northern Europe to the Reformation; would it like to lose England as well? Henry's threat went deeper than words; he imposed a series of taxes and laws that applied increasing pressure on Rome. That legislation, however, required the support of Parliament. No new law or tax could be enacted without that assembly's consent. In 1529, Henry summoned Parliament; it would be in session for seven years.

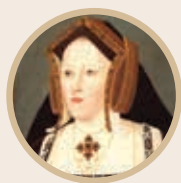
Never before had Parliament been confronted with such great issues, and Henry recognized the assembly's importance. Its members represented constituencies; the town burghers and small landowners were potential allies against the Catholic Church. Some were Protestants, but most simply disliked the popes. By supporting Henry, they would redefine England's place in history and Parliament's role in government.

Henry VIII, with third wife Jane Seymour and their son Prince Edward

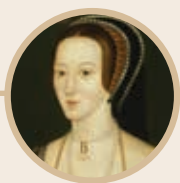




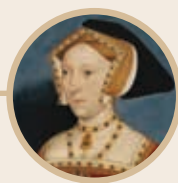
## THE SIX WIVES OF HENRY VIII



**1509-1533**  
**Catherine of Aragon**  
Divorced



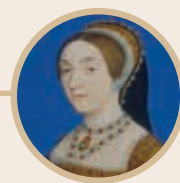
**1533-1536**  
**Anne Boleyn**  
Executed



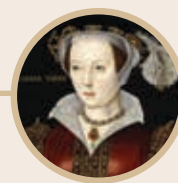
**1536-1537**  
**Jane Seymour**  
Died



**1540 (Jan.-July)**  
**Anne of Cleves**  
Divorced



**1540-1542**  
**Kathryn Howard**  
Executed



**1543-1547**  
**Katherine Parr**  
Widowed

This Parliament would pass 137 statutes, of which 32 were directly concerned “the King’s Great Matter.” The first laws were “reforms” of the Church; some were justified, others mere harassment, but all cost the Church money. Pope Clement responded with threats of excommunication. This brinkmanship lasted three years; then, in 1533, biology hastened the pace of politics. Anne Boleyn, Henry’s mistress and intended queen, became pregnant. Henry and Anne quickly married. Although Catherine of Aragon was alive, Henry had, in his mind, already annulled the first marriage. He also had appointed a friend of Anne Boleyn’s as archbishop of Canterbury. The obliging archbishop declared that Henry’s first marriage had never existed. Pope Clement then excommunicated Henry and the archbishop, but no one cared. Rome had become irrelevant; Henry’s next move would make it illegal to practice Roman Catholicism.

In 1534, the king introduced legislation that dissolved all ties with Rome, replacing it with the Church of England. Its theology remained Catholic with the services in Latin, but its politics were dogmatically English. The supreme head of this church was Henry himself. In fact, the legislation was titled The Act of Supremacy. All English subjects were required to swear their allegiance on pain of treason. Of England’s 17 Catholic bishops, 16 converted. The sole exception—Bishop John Fisher—is listed with Thomas More

in Catholic martyrology.

Henry’s final move against the Church began in 1536: the dissolution of the monasteries. There were 800 monasteries and convents in England. Not only was each a center of Catholic identity, but collectively, they were the largest landowners in the kingdom. Henry had no need for monasteries, just their wealth. The lands were seized. Members of rural communities, particularly in the North, tried to protect their local abbeys. Those who survived the initial suppression were executed according to their class standing: The gentry were beheaded, the rest hanged.

By 1540, Henry had transformed England. Wrestling itself free from the oldest bonds of the Middle Ages, his

prince, though she died in the effort. At this time, the once handsome Henry became the bloated mound we recognize. He increasingly became the pawn of factions and no longer even picked out his own wives. Divorces and executions were, however, still his decision.

Henry died in 1547, only 55, but a grotesque epitome of excess and illness. As it turned out, his daughters would reign. Elizabeth, his child with Anne Boleyn, would be one of the greatest monarchs in history. Her inheritance from Henry was red hair, a clever mind, a commanding personality and an independent England. Until Henry, England’s separation from Europe was a detail of geography; Henry made it a matter of policy, one that continues to

*In 1534, the king introduced legislation that dissolved all ties with Rome, replacing it with the Church of England. The supreme head of this church was Henry himself.*

England stood apart from Europe. Now his revolution and dynastic goals were accomplished. He had executed Anne Boleyn in 1536; his much-desired mistress had proved a shrewish wife. She also failed to produce that required son. The king orchestrated a treason trial for her. The next wife produced a healthy

this day. The king also elevated the importance of Parliament in the governance of England. Henry meant it as a gift, but Parliament would realize that authority was its right. Democracy was Henry’s inadvertent offspring.

Glutton and tyrant, his notoriety lives on ... but so does the legacy of the statesman. ■

## A Cool Solution

Why use Dixon GSM Ball Joint-Armored hose for Steel Mill Furnace hose assemblies?

> The hottest area in a steel mill is inside and around the furnace. Whether the furnace is a basic oxygen furnace (BOF) or an electric arc furnace (EAF), its surrounding area is extremely hot. The temperature required to melt the raw materials of steel is in excess of 2,750 degrees F (1,510 degrees C).

During the steelmaking process, raw materials are added to the furnace to create the proper chemistry required. Iron ore, carbon, silicon, manganese, phosphorous, sulfur, nitrogen, boron, chromium, molybdenum and scrap are all possible additives to the mix. As the furnace roof is moved out of the way, these products are added. The resulting reaction causes a shower of hot sparks, scrap, slag and “skulls” to fly from the furnace—landing on surfaces around the furnace, including hose assemblies. It’s quite a sight to see.

Because of the high ambient temperature and the hot flying sparks,

**GSM Ball Joint Armor and Insulation protecting a hose in a steel mill.**



the surrounding hose assemblies (including furnace and roof cooling water, oxygen and hydraulic assemblies) are subjected to extremely high temperatures and need to be protected.

The heat and falling slag aren’t the only stressful conditions impacting the hose. Assemblies are also subjected to movement during the unloading of the molten steel. The furnace roof swings out of the way of the tilting furnace, cooling lines are lifted free, and hydraulic lines are moved by the action on the furnace. The heat and movement of this application affect the life expectancy of each assembly, limiting the lifespan of each one to between 10 months and three years. Hydraulic assemblies may last only weeks, depending on the number of “heats” (conditions) endured.

A mill’s acquisition price is only a portion of the total cost required to remove and replace large bore

**Metal hose liners rupture from impulse cycles created by vacuum pumps when pulling spent water throughout the cooling system.**



**When using metal hose or un-protected rubber hose with swivel joints, severe hose twists can occur, restricting water and eventually causing shut-down to an EAF.**

furnace hoses. Other related costs/activities include:

- time required to move these large assemblies from storeroom to melt shop
- staging of necessary lifting equipment
- scheduling of mechanical teams for the change-out
- review of proper safety procedures, i.e. lock-out, tag-out, fall protection
- ensuring that all personnel have proper safety clothing and equipment
- limiting production downtime to a minimum (Hose change time can range from 30 minutes to six hours, and typical downtime costs can range from \$130 to more than \$600 per minute.)

### Solution:

Dixon has been fabricating and supplying GSM Ball Joint Armored hose assemblies for water-cooling, oxygen and hydraulic transfer applications in steel mills for more than 50 years. The unique half-round design not only

**DIXON GSM BALL JOINT ARMOR AND INSULATION ADVANTAGES:**

- protects hose from excessive heat
- protects hose from abrasion
- protects hose from hot partials landing
- protects hose from kinking
- protects hose from crushing
- protects hose from twisting
- protects hose assemblies

prevents hose kinks, but also keeps the hose round for continuous and consistent flow of media around the furnace crucible and roof panels. Ball joint armor can be applied to hose sizes ¼-inch through 12-inch ID.

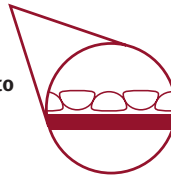
In addition the GSM Ball Joint Armor, Dixon can also apply one or more layers of 1,000 degrees F-fiberglass

ball-joint armor protects against extreme heat, molten splash, abrasion and kinking

multiple layers of 1000 °F fiberglass insulation are applied for extreme heat resistance



no interlocking parts to restrict bending



inner hoses, engineered for the application, are specialty industrial rubber, hydraulic, corrugated stainless steel or PTFE

insulation between the hose cover and the GSM Ball Joint Armor. This insulation gives even more heat resistance and longer life to whatever type of hose it is applied.

Turn to Dixon today to apply genuine GSM Ball Joint Armor to protect your hose from excessive heat, abrasion and metal braid or rubber cover abuse. ●

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The Right Connection®

# Eating to Thrive During Cancer Treatment

Healthy food is more important than ever for those battling cancer

> A cancer diagnosis is daunting. Life, job, family ... everything is suddenly thrown into crisis. Amid the tumult, what to eat during treatment may be the last thing on your mind. That can be a lost opportunity.

"When they are diagnosed and go to treatment, a lot of people are told, 'Eat whatever you want. It doesn't matter,'" says Lise Alschuler, a Seattle-based naturopathic physician who specializes in cancer patients. "[Healthy eating] isn't a concept that has made its way into the conventional oncology world just yet, despite the good data that supports a healthy diet."



## 20 FOODS

WITH CANCER-FIGHTING PROPERTIES

- |              |             |
|--------------|-------------|
| Almonds      | Mint        |
| Avocados     | Onions      |
| Bell Peppers | Oranges     |
| Broccoli     | Pineapple   |
| Cabbage      | Radishes    |
| Cayenne      | Raspberries |
| Cinnamon     | Salmon      |
| Garlic       | Spinach     |
| Halibut      | Turmeric    |
| Kale         | Walnuts     |

Courtesy The Cancer-Fighting Kitchen

iStockphoto.com/EasyBuy4u, iStockphoto.com/Rpsycho

Consider the case of colorectal cancer, for instance. Studies reveal that eating well "impacts not only recurrence but survival," says oncologist Donald Abrams, of the University of California/San Francisco's Osher Center.

"The risk of death is increased twofold for those who eat the standard American diet"—high in fats, red meats, and refined grains and sugars and low in fruits and vegetables, Abrams notes.

His healthier alternative: "I suggest patients eat an organic, plant-based, anti-oxidant rich, anti-inflammatory, whole foods diet."

Organic simply means steering clear of pesticides and antibiotics that can tax immune systems already weakened by chemotherapy. The same chemo creates lots of oxygen-based free radicals in the body. Plant-based foods, i.e., fruits and veggies, provide the anti-oxidants that vacuum up those free radicals.

These foods also often have anti-inflammatory properties—important for many reasons including keeping the liver from becoming inflamed. That's vital because the liver works overtime metabolizing and clearing chemo from the body. As for whole foods, that means moving away from processed foods that often cause spikes in blood sugar. This imbalance can create insulin resistance, which, according to Alschuler, "is considered an independent factor in cancer progression."

Alschuler suggests that her patients make gradual changes, since such modifications are more likely to stick. "For some people, they'll increase

their fruit and vegetable intake to five servings a day, and that's all we'll do. Others might make their breakfast healthy first, then move on to lunch."

Rebecca Katz, a San Francisco Bay Area chef and nutritionist, says forming a culinary support team can work wonders for cancer patients who might not have the energy to cook for themselves. "People always ask, 'What can I do to help?' So create a team.

Pick a captain. Get a cookbook and go through it with patients to see what they might like," says Katz, author of *The Cancer Fighting Kitchen*. "The captain can use an app like Google Docs that everyone can link up to and see their job: shopping, cooking, etc."

The key, says Katz, isn't to come over with a huge pan of lasagna. Rather, cook and freeze healthy dishes in small, storable, microwave-friendly containers. People going through treatment often want very small portions. Having a large supply of choices on hand encourages patients to eat. Even on the worst days, when nausea may hit hard, having a tasty, nutrient-rich broth that can be warmed up and sipped like a tea can work wonders in keeping people hydrated.

One other impediment to eating well during cancer treatment can be chemo-induced taste changes. Often people will stop eating because food tastes metallic or bitter. Katz has a neat culinary trick called FASS (fat, acid,



iStockphoto.com/Vitalina Rybakova

salt, sweet) that alleviates these negative tastes and brings flavor back to food. By using small amounts of four pantry staples—olive oil (fat), lemon (acid), sea salt (salt), and Grade B maple syrup (sweet)—Katz balances dishes and makes them appetizing (see sidebar).

One final thought: Any move toward healthful eating is a plus, and if you crave something off the wall on a given day, indulge. “People get hard on themselves,” says Alschuler. “They’ll eat well, then, following a chemo treatment, they might just want mashed potatoes and ice cream. And that’s OK because the effect of diet is cumulative and long term; one day off here and there is not going to make or break the overall positive effect.”

*Mat Edelson is co-author of The Cancer-Fighting Kitchen (Celestial Arts).*

### FASS Fixes for Troubled Taste Buds:

**Things have a metallic taste.** Add a little sweetener, such as maple syrup or agave nectar, and a squeeze of lemon. You could also try adding fat, such as a nut cream, olive oil or butter.

**Things taste too sweet.** Start by adding 6 drops of lemon or lime juice. Keep adding it in small increments until the sweet taste becomes muted.

**Things taste too salty.** Add 1/4 teaspoon of lemon juice. It erases the taste of salt.

**Things taste too bitter.** Add a little sweetener, such as maple syrup or agave nectar.

**Everything tastes like cardboard.** Add more sea salt until the flavor of the dish moves toward the front of the mouth. A spritz of fresh lemon juice also helps.

**NOTE:** If a cancer patient is having trouble swallowing or dealing with mouth sores, add fat, such as a nut cream, to food. Eat blended or pureed foods, such as blended soups and smoothies. Stay away from ginger, curry, red pepper flakes and other strong spices.

*Courtesy Rebecca Katz*



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# Getting the Shaft

How elevators transformed the world's urban landscapes

> As a kid visiting Atlantic City in the late 1960s, I had my first run-in with an elevator. My family was staying at the Traymore Hotel (long since razed to make way for the gambling palaces) when I became trapped alone between floors in a faulty elevator. It was only a minute, but it felt like a lifetime. I swore I would never get in another one. Of course, I've been in thousands of elevators since then. In our modern lives, we've come to take elevators for granted. But it's important to remember that elevators changed the way we live. Without them the skylines of the world's great metropolises would look vastly different.

The history of the elevator dates back to Greek and Roman times. Archimedes built a rudimentary elevator around 236 B.C. By 80 A.D., gladiators and animals were riding lifts in the Roman Colosseum.

Early elevators were open platforms with hoists that were operated manually to vertically transport water, building

mistress's lair on the second level. Men used ropes and pulleys from a chimney to operate this "flying chair."

By the early 19th century, elevator technology had advanced significantly. In 1823, British architects Burton and Horner constructed a steam-powered "ascending room" to transport tourists to a platform where they could gaze on London's grandest vistas. Later architects added belts and counterweights to the steam-powered elevators.

Hydraulic systems were introduced in the mid-19th century, allowing water pressure to raise and lower elevator cars, which were commonly used for transporting freight in factories and mines. But passenger elevators remained mostly a novelty because cables often snapped, killing riders and damaging building materials.

The game-changer was Elisha Otis,

The passenger elevator was created in the 18th century. Men used ropes and pulleys from a chimney to operate this "flying chair."

materials, stones and other heavy items. People and animals usually did the heavy lifting, though water wheel power was utilized as well.

The passenger elevator was created in the 18th century, and one of the first was installed in 1743 on the exterior of the Palace of Versailles under the direction of King Louis XV. The king had one that carried him to his

considered the inventor of the modern elevator. In 1852, Otis produced a design with a safety brake so that if cables broke, a wooden frame installed at the top of the elevator would snap out and hit a shaft's walls, thus stopping the elevator in its descent.

Otis demonstrated his "safety hoist" at the New York World's Fair of 1854, going up in a makeshift elevator himself



and cutting the ropes. Audiences were enthralled with his hoist, which caught the elevator within seconds.

Founding his own company, Otis installed the first public elevator in New York's Cooper Union Foundation Building in 1874. His ingenuity made it possible to construct skyscrapers, and they flourished over the next century. (Today, the Otis Elevator Co. remains the world's largest elevator manufacturer.)

In the late 1880s, American inventor Alexander Miles patented the electric elevator, though the first had been built by German inventor Werner von Siemens in 1880.

Today's elevators have steel cables as well as different braking systems, thus ensuring passengers will survive if cables snap. Shock absorbers in the wells of shafts are other safety features that will likely prevent serious injuries if an elevator plummets.

If only I had known that when I was stuck in the elevator at the Traymore all those years ago. ●



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