

The Salt Lake Tribune

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BLACK MONDAY STOCK CRASH STILL RESONATES, E1

RED SOX EVEN IT UP

J.D. Drew's slam helps Boston force Game 7 with Indians, S1



WOMEN MAKE HISTORY

Humanities Book Fest, D1

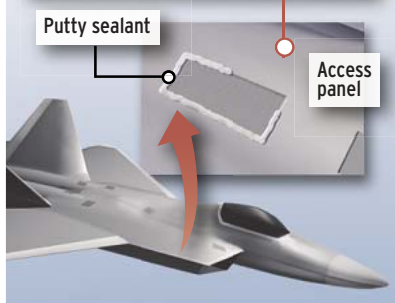
SUNDAY ❖ OCTOBER 21, 2007

Problem on the Raptor

Sixty-seven of the U.S. Air Force's newest and most advanced fighter jets are cycling through Hill Air Force Base for repairs. A decade ago, the F-22's designers warned of corrosion problems on mechanical access panels. But the proposed fix was scrapped.

What's happening:

Moisture is trapped by the sealant used to seal access panels. An interaction between the paint, moisture and sealant causes the aluminum panel to corrode.



The Salt Lake Tribune

Decade-old design flaw puts fighter jets in shop

Raptor's makers knew long ago of a corrosion issue that's costing millions to fix at Hill

By MATTHEW D. LAPLANTE
The Salt Lake Tribune

The manufacturers of the Air Force's newest fighter jet knew years ago that the composition of some mechanical access panels made the F-22 Raptor susceptible to corrosion. Military officials even changed the design to fix the problem.

But a decade later in a program already fraught with setbacks, the design flaw reappeared. Now, about two-thirds of the military's fleet of Raptors are suffering from corrosion, prompting the Air Force to speed up the timeline for bringing the aircraft through Hill Air Force Base for maintenance.

"So the world's most expensive, most advanced aircraft is in the shop for repairs for something simple that someone figured out a long time ago?" said Nick Schwellenbach, national security investigator for the Project On Government Oversight.

"I'd like to say I was outraged, and it is outrageous," Schwellenbach said, "but it's all too common."

The Project on Government Oversight has exposed numerous other problems with the Raptor, which costs more than \$130 million per plane — and nearly three times that when research, development and other costs are factored in.

See RAPTOR, A9

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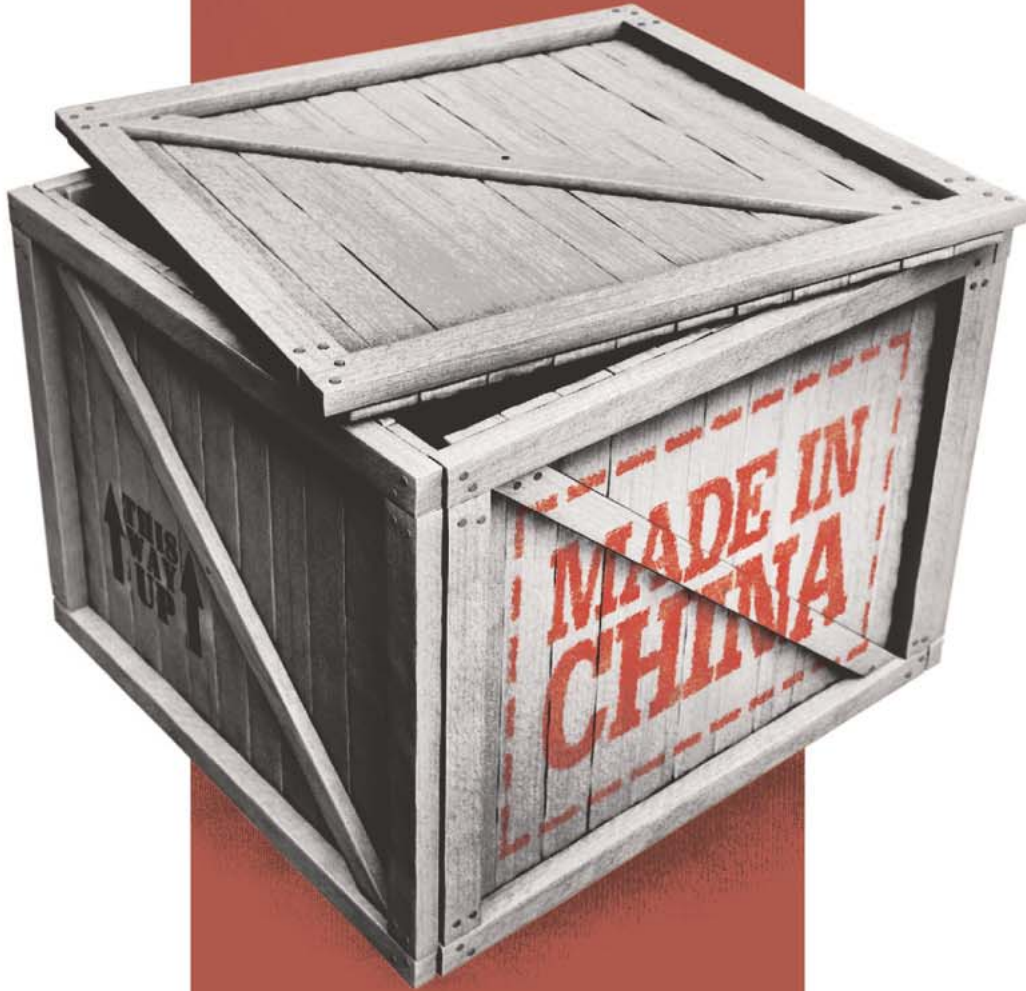


Snow flurries in a.m. north, with highs in the upper 40s; sunny in south and 47 to 65.

VOLUME 275
NUMBER 7



The human cost of doing business



Their lungs shut down, their kidneys fail, they lose fingers, limbs, all so Americans are guaranteed an unfettered flow of cut-rate merchandise

By LORETTA TOFANI
Special to The Salt Lake Tribune

- TODAY**
Dying Chinese workers pay the price of cheap U.S. imports.
- MONDAY**
Outdated machines cause an epidemic of amputations.
- TUESDAY**
Batteries made by hand lead to kidney failure and death.
- WEDNESDAY**
Who's responsible for workers' health? Not us, American companies say.

ON THE WEB
Read the entire four-day series, view multimedia, discover additional resources and leave comments at www.sltrib.com/china.

American Imports, Chinese Deaths

Part one of four



Meet Wei Chaihua — he's dying of silicosis, a fatal lung disease he acquired making Char-Broil gas ovens for U.S. export. Unlike a U.S. Char-Broil factory, the plant in China did not provide proper ventilation or respirator masks. Read more on **A6**.

Teacher misconduct

Pupils often sexual targets

Students in America's schools are groped. They are raped. They are pursued, seduced and think they're in love. An Associated Press investigation found more than 2,500 cases over five years in which educators were punished for actions from bizarre to sadistic. Those cases included 57 in Utah. The data show nearly 53 percent of Utah teachers who lost their licenses from 2001 to 2005 lost them for sexual misconduct, twice the national rate, according to the AP. How bad is the problem in Utah? An attorney for the Utah Office of Education acknowledges she has seen more cases this year than usual. But she believes there aren't more victims, it's just that increased awareness means more victims are coming forward.

INSIDE

- Unprecedented nationwide look at scope of educators' sex offenses, **A14**
- Utah teachers busted for sexual misconduct more than U.S. average, **A16**
- A list of Utah teachers charged with sex crimes from 2002-2007, **A16**

ON THE WEB AT SLTRIB.COM

- Reports on legal loopholes that keep some teacher misconduct secret, patchwork laws that allow it to flourish, a guide for parents worried about abuse, and how society views male and female victims differently.

Tools or weapons?

Jihadi Web sites are under the microscope

Is it better for U.S. counterterrorism officials to shut them down and try to prosecute those involved? Or should the material be left up as a way to learn something in the larger battle against terrorists? **NATION, A5**

Iranian negotiator



Associated Press file photo

Iran's top nuclear negotiator, Ali Larijani.

Resignation could intensify nuke dispute

Ali Larijani's departure is seen as a victory for Iranian hard-line President Mahmoud Ahmadinejad, who often clashed with the envoy. Some fear the move could push Iran into an even more defiant position in its standoff with the West. **WORLD, A3**

ABOUT THE SERIES



Veteran reporter **Loretta Tofani's** most recent investigative project took her to China, where over a 12-month period she visited more than 25 factories and observed firsthand how Chinese workers routinely lose their health and their lives making products for export to the United States and other countries.

Tofani examined thousands of U.S. import documents for these stories. With a travel grant from the Pulitzer Center on Crisis Reporting in Washington, D.C., (www.pulitzercenter.org) she interviewed Chinese workers in hospitals, homes and outside their factories as well as dozens of attorneys, business leaders, government officials and labor activists. She also reviewed medical and legal records, medical journal articles, government reports and other documents.

The Center for Investigative Reporting in Berkeley, Calif., also helped fund travel for the project with a grant from the Dick Goldensohn Fund for International Reporting.



AMERICAN IMPORTS, CHINESE DEATHS

Part two of four

Benzene: In the bones

Sick from furniture fumes

China has laws limiting worker exposure to toxins from paint and varnish, but regulations are rarely enforced

By **LORETTA TOFANI**
Special to *The Salt Lake Tribune*

A GUANGZHOU, China mputation isn't the only hazard afflicting Chinese workers who make furniture and home accessories for U.S. consumers.

Direct and indirect exposure to unhealthy levels of benzene and other chemicals in paint and varnish also are claiming victims.

He Yuyun, 36, for years

worked at the Ya Li Shan Zhuo factory in China, which shipping documents show was destined for Restoration Hardware, Ethan Allen Furniture, Haverty Furniture and other U.S. companies.

Now, she suffers from "chronic occupational benzene poisoning," according to a Sept. 29, 2006, medical record. The carcinogen benzene has damaged her bone marrow, leaving her with too few white blood cells. She and at least two co-workers have been diagnosed with myelodysplastic anemia, which is a disease that progresses to fatal leukemia.

He Yuyun inhaled the toxins from two sources: her own factory work as she painted and varnished furniture with a brush, and the work of others who spray-painted furniture without access to spray booths like those

U.S. workers use to control fumes.

She represents a new type of health problem in Chinese factories. Previously, workers performing the same tasks were grouped together. Now, in the name of "just in time" delivery, which seeks to ensure few finished goods are warehoused, some factories have been grouping workers performing different tasks near each other. The practice speeds production time, but can expose workers to multiple hazards.

In her case, the chemical hazards — benzene, toluene and xylene — were the same, but she inhaled them from different sources. In other cases, workers applying a variety of solvents and organic chemicals have sat next to sewing machine operators who work without proper ventilation or masks, according to Garrett Brown, a California industrial hy-

gienist who evaluated dozens of factories in China. Similarly, sewing machine operators sitting next to punch-press operators sometimes lack hearing protection from noise that can cause hearing loss, Brown said.

Such systems "can actually increase hazards by mixing previously separated exposures, with additive and cumulative effects," he wrote in a 2007 article in *Journal of Occupational and Environmental Health*.

Benzene, toluene and xylene also are used in the manufacture of shoes, suitcases, some toys and other goods. Toluene is considered a possible carcinogen. China in 2002 adopted regulations that decreased the permissible level of benzene in the air from 10 parts per million to 1.8 parts per million. The level allowed in the

See **BENZENE**, next page



Li Xueping, who lost three fingers while making kitchen and bathroom equipment for shipment to the U.S., is consoled at Shenzhen Renan Hospital by Yu Wanlin, who lost part of his left index finger.

Ho Yongjiang recuperates at Shenzhen Renan Hospital after cutting off the top part of his thumb in an old bandsaw while making furniture in a Chinese factory for export to California and New York.

Amputees losing life and limb

► Continued from A1

Machines that mutilate: No official statistics count the number of amputations in China, but millions of Chinese workers have lost legs, arms, hands or fingers since 1995, said Zhou Litai, a lawyer who represents such workers.

In the southern province of Guangdong alone since 1995, at least 360,000 factory workers have lost limbs, said Liu Kaiming of the Institute of Contemporary Observation, a Shenzhen-based think tank.

Throughout China, workers making goods for export use crude machines that lack safety features standard in the U.S. Often, the equipment is discarded industrial machinery from Japan, South Korea and Taiwan, said Garrett Brown, an industrial hygienist from California who reviewed other researchers' reports and inspected numerous large factories in China from 2000 through 2006.

China's 2002 Law on the Prevention and Control of Occupational Diseases orders factories to gradually replace unsafe machines. It is illegal to import or use equipment that may produce "occupational-disease hazards."

But the law is rarely enforced. "Inspections on the factory floor are zippo, and that's the best of the lot," Brown said.

Beijing, which enacted the law, is limited in what it can do because enforcement is left to local governments, added Fu Hualing, a Hong Kong University law professor. "But what is the incentive for local government?"

Interviews with 17 amputees,

A LACK OF SAFETY FEATURES

The table saw pictured below amputated the fingers of Wang Suona and Yu Wanlin. Here's where it falls short of U.S. safety standards.

1 No blade guard: To prevent workers' fingers from entering the point of operation.

2 No anti-kickback device: To prevent wood pieces from being ejected back toward the worker as he/she is pushing the wood through the saw.

3 No rip fence: To keep the wood being sawed from shifting side to side.

4 No push sticks: To enable workers to push wood through the saw without their fingers touching the wood.

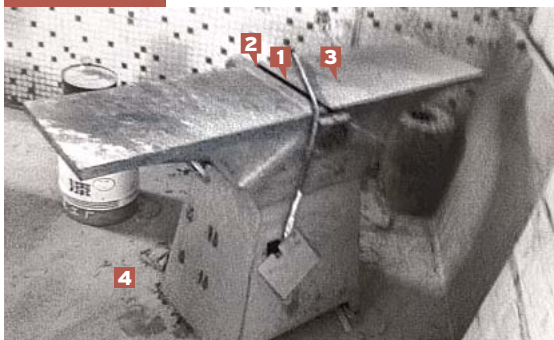
numerous experts and more than 25 factory visits reveal the following recurring problems:

- Most machines lack safety guards or mechanical systems to prevent workers' hands from touching fast-moving blades and saws.
- Even when machine guards exist, they often are not used because they slow down production.
- Broken or poorly maintained machinery is commonly used despite threats to worker safety.
- Factories often continue using machines that amputate limbs and fingers.
- Workers are expected to work 11-hour days, six or seven days a week. Coupled with use of crude machines, extreme fatigue causes accidents.

■ ■ ■

'All I could see was blood': The stories of the three amputees interviewed in the Shenzhen hospital are typical of others throughout China, lawyers for amputees said.

Li Xueping had worked in the Helixing Hardware and Crafts Co. Ltd. factory in Shenzhen for six months when his accident occurred. The factory employs 185 workers who make metal Christmas ornaments, file cabinets, baskets and kitchen and bathroom equipment, according to its Web site. It exports to the U.S. for Globeunion, a Taiwanese company, which also has an office in Wheaton, Ill.



A farmer from Sichuan Province, Li came to this city nine years ago to improve his family's standard of living, leaving his wife and 11-year-old son behind. He consoled himself that the money was worth it: He earned about \$200 a month, more than double what he had earned at his previous job in another metal factory.

His accident occurred on March 16. Li took his place at a machine with a round blade that automatically descends and cuts, then rises back in place. His job was to remove each metal towel rack after it had been cut, then put a new uncut metal piece in its place.

The blade descended, cut the metal, and rose. Li inserted his gloved left hand to withdraw the metal when the blade unexpectedly descended again, instantly, automatically.

"I knew my fingers had been amputated," said Li, his dark eyes intense as he told his story from his hospital bed. "I couldn't see them through the glove, all I could see was blood, but when I tried to move my fingers I couldn't feel them. I knew they weren't attached."

In a telephone interview, Xia Shenghuan, a manager at the Helixing factory, said "worker carelessness" caused the accident.

"If you're a little more careful, the accident won't happen," Xia said. "A worker shouldn't put his fingers under the blade."

In the U.S. and most other industrialized countries, such machines must have metal guards to keep workers' fingers away from blades, said Jim Frederick, assistant director of health and safety for the United Steel Workers. "Either there's a guard over the blade, or a tether keeps the worker away, or if you take even one hand off the machine the saw stops," he said. "You wouldn't find a blade like that in a manufacturing setting in this country."

Meanwhile, at the factory, Li

yelled for help. A driver took him to the hospital in a factory car: Li sat in the back seat, cradling his bleeding gloved hand.

As he lay on a bed at the hospital, a drape over his hand, a physician cut his glove off. Li heard something fall into a metal container. "My fingers," he said.

A surgeon reattached Li's three fingers, but it's unclear whether he will regain their use, he said.

Now, back at the Helixing factory, Li is on "sick leave" for two months and not expected to work, according to Chinese regulations. His employer must pay him his salary, as well as provide food and his dormitory room.

But Li feels uncomfortable not working, so he is in the factory every day, examining the quality of products and reminding other workers to keep their hands away from saw blades. In mid-May, he said he had not been paid since just before the accident in March.

With the gauze bandages off Li's hand, his three reattached fingers appear swollen, scarred and rough.

"I don't have any feeling in them," he said. "I hope some feeling will come back."

Asked about the unsafe machinery that workers use at the factory that supplies Restoration Hardware, a spokeswoman said the factory apparently was a temporary subcontractor, not one the company ordinarily uses.

Fran Hammond, senior vice president of global sourcing at Corte Madera, Calif.-based Restoration Hardware, said company policy forbids purchasing from overseas factories that have unsafe, unguarded machinery, unless the factory is taking clear steps to get rid of unsafe equipment in six months or less.

"We rely on our agents to do an inspection and auditors to do a compliance program," said Hammond, adding that inspections are based on compliance with local laws and conventions

of the Switzerland-based International Labor Organization of which China is a member.

■ ■ ■

'The finger is useless': Yu Wanlin, one of Li's two visitors at the hospital, tells a story similar to Li's. He lost part of his left index finger at the Xin Chang factory in Shenzhen while making furniture for U.S. consumers.

Yu met Li at the hospital weeks earlier while visiting Wang Suona, 21, who also worked at the Xin Chang factory. Wang also had lost an index finger using the same machine at the factory that amputated Yu's.

"The surgeon amputated Wang's toe to replace his finger," Yu said, a wide smile spreading across his face. "I told him I couldn't understand why he agreed to that, to suffer pain in two places instead of just one."

Like Li, Yu had come to Shenzhen from rural Sichuan Province hoping to better provide for his parents and 8-year-old daughter. He began working in the furniture factory on Oct. 25, 2004, earning about \$200 per month, including overtime. Each month, he sent home about \$125, which allowed his family to move to a two-story, two-room home. As subsistence farmers, they were able to buy more chickens, as well as seven ducks and five pigs.

Before his accident on Jan. 12, 2006, Yu was feeling sorry for himself. Not only was he exhausted from having worked 15-hour days for 30 days straight, he had not seen his wife in two months. She worked in a shoe factory in the nearby city of Dongguan. "I was thinking I had become a machine," Yu explained.

The table saw Yu used every day had been jury-rigged. Carpenters once had used the table to sand lumber, but a factory supervisor told Yu he had changed the machine himself.

See **AMPUTEES**, next page

“Now all I want is to have some energy, to get through each day.”

He Yuyun, 36, who for years had painted furniture at the Ya Li Shan Zhuo factory in China

BENZENE, from previous page

U.S. is 0.5 part of benzene per million parts of air in the workplace during an eight-hour workday, 40-hour workweek.

China's regulations, however, are rarely enforced, factory workers and occupational health professionals say. In 59 percent of 27 industries in China surveyed by scientists after the 2002 regulations went into effect, the median benzene exposure level was above the new standard of 1.8 parts per million, according to a 2005 study published in the *Journal of Chemico-Biological Interactions*. Last year, an article in *Regulatory Toxicology and Pharmacology* found that "the majority of facilities in the shoemaking industry . . . were not in compliance with the occupational exposure limits in effect at the time." The

ABOUT BENZENE

Benzene, a colorless or light yellow flammable liquid, is a solvent found in ink, paint, finishes, plastic, rubber, gasoline and synthetic fibers such as nylon and polyester.

Uses: It is used in the manufacture of detergents, pesticides, plastics, extraction of oils, pharmaceuticals and explosives. Benzene is also used in dry-cleaning.

factory where He Yuyun, a migrant worker from rural Shaanxi Province, worked is known in English as Alexandre International Corp. Inc.

Fran Hammond, a Restoration Hardware spokeswoman, said she was surprised to hear about the workers who had developed myelodysplastic anemia working in the factory. She said she has visited the factory many times and saw that it had "extractor fans" and an adequate ventilation system. In addition, she said, Restoration Hardware uses water-based paints and varnish on its furniture, so "when you walk in, there's no smell." Other American furniture companies use different types of paint in the same factory, she noted.

"Water-based" paint still has carcinogenic solvents, according to Brown, the industrial hygienist. "Everyone pretends that if

there is less solvent in the paint than previously, then it is 'no solvent' paint," Brown said. "[That's] simply not true."

A factory inspection report by the Shenzhen Songgang Prevention and Health Care Institute on Dec. 1, 2005, found that although workers in that factory were using a type of acetone solution made from bananas, the solution was 0.1 percent benzene, 29 percent toluene and 32 percent xylene. In addition, He Yuyun and the others worked 10 hours seven days a week, according to her medical report, so they inhaled greater toxin levels than scientists planned when they established "permissible levels" of toxins.

Hammond said when issues of noncompliance with health and safety standards arise in factories that Restoration Hardware buys from "our agents will work with

the vendors and factories to help remediate the problems. It's not an overnight thing. It's a step-by-step process."

Neither Ethan Allen nor Haverty granted requests for interviews. Ethan Allen said in an e-mail only that it did not use benzene in its paints or varnishes. Haverty Furniture's e-mail said the company was surprised to hear about the poisoning because a team of quality-control personnel oversee all furniture made in the factory.

He Yuyun's illness manifested itself in May 2006. She fainted, often was dizzy, had severe back pain and always seemed sick with colds and sore throats.

She was admitted to the hospital and spent a year there.

"I had hoped to help my family build a house," He Yuyun said. "Now all I want is to have some energy, to get through each day."

BENZENE EXPOSURE

Humans can be exposed to the chemical through inhalation, consumption of tainted food or water or through contact with the skin. Prolonged exposure to benzene can lead to:

Leukemia

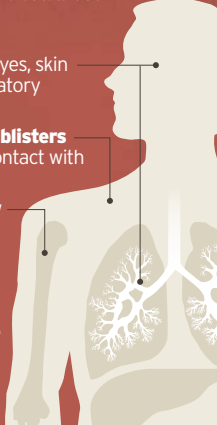
Irritation to eyes, skin and the respiratory system

Redness and blisters if directly in contact with skin

Bone marrow damage

Immune system damage

Reproductive and developmental damage



Sources: EPA, Center for Disease Control, OSHA



LORETTA TOFANI/For The Salt Lake Tribune

He Yuyun, 36, shown outside the Guangdong hospital, suffers from myelodysplastic anemia, a precursor to leukemia, from breathing in vapors while painting and varnishing furniture for U.S. companies.

► **AMPUTEES**, from previous page

On the day of the accident, Yu was cutting and fashioning a couch for export to New York. Yu pushed the lumber into the table saw blade, but it resisted, seemingly stuck on an uneven part of the table. Suddenly, the wood shifted to the left, and Yu took his eyes off the saw as he placed his hand on a different part of the wood to guide it into the saw. "I was just thinking of putting the wood back in the right place. I wasn't thinking about my finger," said Yu, who saw the injury before he felt it: The top third of his index finger was missing.

A co-worker ripped a shirt and fashioned a tourniquet for Yu. The colleague helped him to the street, but no taxi was available. Yu got into a type of three-wheeled vehicle not allowed on main streets, so the ride to Longgang Central Hospital took nearly an hour. Although the physical pain was more severe than any he had ever experienced, the mental pain was worse.

"I wondered if I'd be able to work in a factory again," Yu said. "I wondered how I'd earn money."

Yu's employer paid for Yu's hospitalization and surgery, as required under Chinese law.

After the accident, Yu spent two months living at the three-story concrete factory, without working. Then Yu resumed work for a few months. But he quit, he said, because the owner, Huang Bingseng, twice told him to leave after they argued over back pay that Yu felt he was owed. Contacted by telephone, Huang said he did not clearly remember Yu.

"There are many workers in the factory," Huang said. "Injuries happen but not that much. Sometimes workers are responsible and sometimes it's the machine."

A Shenzhen People's Court judgment dated March 2007

shows the court ordered Huang to pay Yu nearly \$1,000 for "losses from industrial injuries." Huang had declined to insure himself against Yu's disability, so he must pay Yu from his own pocket.

The city Labor and Social Welfare Protection Bureau certified Yu's case as an occupational injury, according to a document dated March 6, 2006. Later that month, the city Labor Arbitration Committee decided Yu's injury was a "grade 10." Injuries are ranked on a scale of 1 to 10, with 10 the least severe. The grade of an injury, as well as a worker's salary, are computed in a formula to determine the worker's disability payment. In the end, Yu gave the money to his parents.

One of the U.S. businesses that imported from the Xin Chang factory while Yu used its primitive equipment was Furniture On Consignment in Omaha, Neb., according to 2005 import documents. Owner Rod Kush said he never had visited the factory in China. He ordered the furniture at the High Point Market in North Carolina, a fair where wholesalers display their furniture. "All the big companies use Chinese factories to make their furniture — Drexel, La-Z-Boy, Thomasville. I don't remember which brands I ordered that time."

Yu has no feeling in the finger that was amputated — not even in the part of the finger that was not amputated. "The finger is useless," he said. "It's like it isn't there."

He has not found another steady job, although he has had occasional work as a carpenter since the accident. The lack of feeling in his index finger makes him slower and less efficient in handling tools and lumber, he said, perhaps making him less employable. Now, he says, he is lucky to earn an estimated \$60 per month. Sometimes, to supplement his unsteady carpenter's income, he offers people rides on

his bicycle's back seat for about 25 cents.

■ ■ ■

'Why should they care about me?': Li's hospital roommate Ho Yongjiang rested in his bed, quietly watching a police drama on TV. A thick gauze bandage covered his left hand and his arm.

Below his elbow, a neat row of stitches binds the wound where a surgeon removed the skin from the fatty part of his arm and used it to rebuild a thumb for him, Ho said.

He knew it was dangerous to work in a furniture factory. During his 11 years at the Shenzhen New Nantian Industrial Co. factory, a two-story, 35,000-square-meter building in a sleek industrial park, 30 to 40 of about 60 carpenters in his workshop had lost fingers, hands, arms or parts of arms, he said. Often, the accidents occurred while they used table saws lacking safety devices.

"Things might be better if we had better machines," said Ho, adding that his factory had purchased one table saw with safety guards earlier this year. The nine other table saws still have no guards, he said.

Representatives of companies that buy from New Nantian said they never saw the workers who made their products.

Armen Art Ltd. of North Hollywood, Calif., which wholesales furniture throughout the U.S., received a shipment worth \$20,454 from the factory in November 2006. Bob Phillips, an Armen Art sales manager, said he visited the New Nantian factory, but only saw its design room and its finished products. He added he visited three factories a day in China and did not linger at any one factory. Phillips said he was impressed with the factory because "they actually had a forklift. Most forklifts in China are nothing more than 10 guys."

"They had some products we wanted to try," Phillips contin-

ued. "We tried it, for about 15 to 16 months, but it didn't work out. They're not a supplier to us now."

Another company, Nova Metal Co. of New York City, imported \$20,974 worth of furniture in May 2005 from New Nantian, according to import documents. Nova Metal's buyer, Joe Dell, said he visited the factory but, "They only showed me the showroom," Dell said. "I brought in a few containers from them, then I stopped."

Ho's accident occurred March 28 when he was using a table saw without a guard to cut lumber for a cabinet. He pushed the lumber toward the saw with his hands. He happened to glance at his right hand and saw blood on his thumb. The top of his thumb was missing.

The factory's driver took Ho to



LORETTA TOFANI/For The Salt Lake Tribune

Zhu Qiang, 24, lost his right arm while making plastic shopping bags for U.S. stores. Zhu's job was to place small plastic pieces into a machine that made bags. The machine's suction grabbed Zhu's arm, tearing it off. The same thing happened to another worker 15 days later, Zhu said.

People's Hospital, where he waited for about an hour in excruciating pain, the inch remaining on his thumb bleeding profusely despite Ho squeezing it with his other hand. Then nurses decided not to admit him because "They said it was too serious, I had to go to a different hospital," Ho recalled.

The driver took Ho to Shenzhen Renan Hospital, 20 minutes away, where he was admitted. Just as Ho was feeling calmer, telling himself he would finally get attention, the X-ray machine suddenly stopped working, nurses told Ho. They suggested he get an X-ray at another hospital.

He ended up back at People's Hospital. "They thought it was strange that I'd want an X-ray, when I wasn't going to have surgery there, so they made we wait," Ho recalled. Finally, nearly four hours after the accident, an X-ray was taken of Ho's thumb. But no one gave him any pain medicine.

Delirious with pain, Ho got back into the car and emerged, again, at Shenzhen Renan Hospital. The driver handed nurses Ho's X-ray. Ho waited. Finally, five hours after Ho's thumb was severed, he was wheeled into an operating room.

"I concluded the hospital is not a good place for people to go," Ho said. "There's no use in being angry. There are so many patients in the hospital, so why should they care about me?"

A manager at New Nantian refused to discuss Ho's injury. "He's an ordinary worker," he said, then hung up.

But for the three men in the hospital room, all facing futures as amputees, there is but one reason for their plight: old, outdated machinery.

"I know in developed countries they have better machines, but in my case I can only push the wood with my own hands," said Ho. "Of course it's dangerous."

China: The high price of cheap goods

► Continued from A1

'Big problem for Americans': With each new report of lead detected on a made-in-China toy, Americans express outrage: These toys could poison children. But Chinese workers making the toys — and countless other products for America — touch and inhale carcinogenic materials every day, all day long. Benzene. Lead. Cadmium. Toluene. Nickel. Mercury.

Many are dying. They have fatal occupational diseases. Mostly they are young, in their 20s and 30s and 40s. But they are facing slow difficult deaths, caused by the hazardous substances they use to make products for the world — and for America. Some say these workers are paying the real price for America's

cheap goods from China.

"In terms of responsibility to Chinese society, this is a big problem for Americans," said Zhou Litai, a lawyer from the city of Chongqing who has represented tens of thousands of dying workers in Chinese courts.

The toxins and hazards exist in virtually every industry, including furniture, shoes, car parts, electronic items, jewelry, clothes, toys and batteries, interviews with workers confirm. The interviews were corroborated by legal documents, medical journal articles, medical records, import documents and official Chinese reports.

Although these products are being made for America, most Chinese workers lack the health protections that for nearly half a century have protected U.S. workers, such as correct protective masks, booths that limit the spread of sprayed chemicals, proper ventilation systems and enforcement to ensure that the employees' exposure to toxins will be limited to permissible doses measured in micrograms or milligrams.

Chinese workers also routinely lose fingers or arms while making American furniture, appliances and other metal goods. Their machines are too old to function properly or they lack safety guards required in the U.S.

In most cases, U.S. companies do not own these factories. American and multinational companies pay the factories to make products for America. From tiny A to Z Mining Tools in St. George to multinational corporations such as Reebok and IKEA, companies compete in the global marketplace by reducing costs — and that usually means outsourcing manufacturing to China. Last year, the U.S. imported \$287.8 billion in goods from China, up from \$51.5 billion a decade ago, according to the U.S. Commerce Department. Those imports are expected only to increase.

Never even visit the factories: Worker health and safety are considered basic human rights. But in the global economy, responsibility to workers often gets lost amid vast distances and international

boundaries.

"This is a big-picture problem," said Garrett Brown, an industrial hygienist from California who has inspected Chinese factories that export to America. "Big-picture problems don't have quick or easy solutions."

The International Labor Organization (ILO) publishes international standards for workplaces. China agreed to many of those standards and also enacted a 2002 law setting its own rigorous standards. Under Chinese law, workers have the legal right to remain safe from fatal diseases and amputations at work.

But the law hasn't been enforced, Chinese and international experts agree. Economic growth has been a more important goal to China than worker safety.

Even the World Trade Organization, which maintains some barriers to trade to protect consumers' health, does not concern itself with issues of workers' health. As a result, enforcement of health and safety standards has been left to the governments of developing countries and the companies that outsource to those countries.

Often, smaller companies never even visit the factories where their products are made. Larger companies try with only limited success to audit operations, often complaining that their efforts are failing. Records are falsified and unsafe machines are used after audits. Safety guards are removed so workers can produce faster.

"Through auditing tours, we can make good improvements and changes, but those changes are not sustainable," complained Wang Lin, a manager for IKEA based in Shanghai. "Chinese government law enforcement is greatly needed," added Wang. "Without that, companies cannot sustain a good compliance program."

In 2005, 390,000 died: The Chinese Ministry of Health in 2005 noted at least 200 million of China's labor force of 700 million workers were routinely exposed to toxic chemicals and life-threatening diseases in factories.

See **CHINA**, next page



**AMERICAN IMPORTS,
CHINESE DEATHS**

Part one
of four



LORETTA TOFANI/For The Salt Lake Tribune

The Helixing factory in Shenzhen, China (building with the red sign), which exports metal goods to many U.S. companies, does not have safety guards on its metal-cutting machines. As a result, workers' fingers have been amputated.

Silicosis: Death in the air

Worker: 'I know my days are numbered'

Father wanted a better future for his kids, so he left his farm for factory work, but now he's slowly dying

By LORETTA TOFANI
Special to the Tribune

FOSHAN, China
Factory workers in this small industrial city made parts for Char-Broil grills and gas stoves without wearing respirator masks with charcoal filters. The factory had no special ventilation systems. No ear plugs. No chemical wash units.

All of these safety protections were standard equipment when workers in Columbus, Ga., built and assembled Char-Broil stoves until their factory closed last year.

Another difference? Some of the Chinese workers are dying.

In a barracks-like building with a tin roof in Foshan, Wei Chaihua and other workers operated the machines that sanded and polished the steel for Char-Broil stoves. Now Wei's lungs are filled with microscopic metal specks that created nodules that make it difficult to breathe. Wei has silicosis, a fatal lung disease he acquired because the Bai Xing factory here had higher levels of silica dust than allowed by Chinese law, according to his medical records and a local government inspection report of the factory air.

The factory provided Wei and other workers with only thin

gauze masks.

Similarly ill-equipped factories in China make jewelry, utensils, tool and die casts, ceramic tiles, dinner plates and marble tiles for U.S. and worldwide export. Epidemiologists estimate about 4.4 million workers in China have silicosis from working in these industries without adequate protection, although most have not been diagnosed.

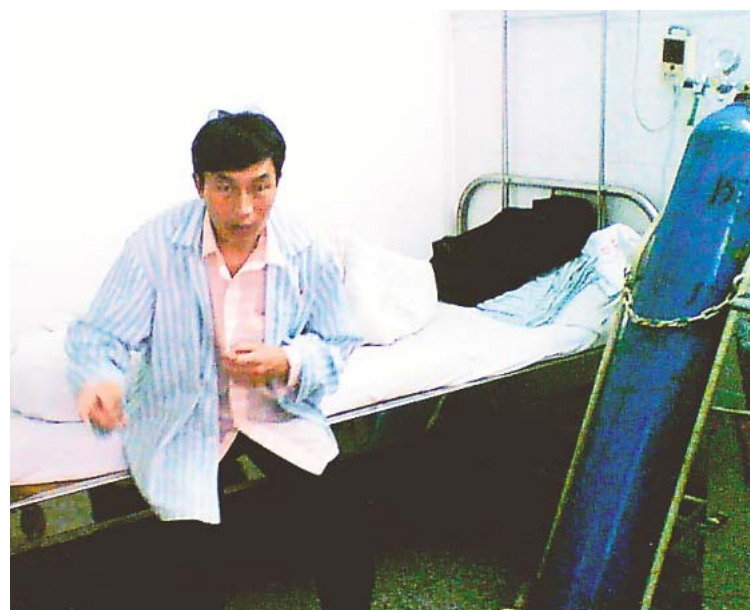
"I know my days are numbered," Wei, 44, said, raising his left hand to his heart after the exertion of talking. "I cannot believe this has happened to me."

Working at the factory: The story of Wei's high expectations in taking a factory job compared to the actual grim consequences of his

work is a story common throughout China. It suggests that U.S. media reports that globalization has lifted millions of Chinese out of poverty have not taken into account the widespread loss of health and life from occupational diseases.

Wei spent nearly all his life working in a farming village in a mountainous part of Hubei Province. He, his wife and two children raised corn, potatoes and Chinese cabbage on a half acre of land. The air was clear, unpolluted. There were no factories.

For most of his life, Wei said, he felt relatively satisfied. He was a subsistence farmer, but felt secure in the knowledge his family would not go hungry. Throughout the 1990s, however, Wei could not help but notice



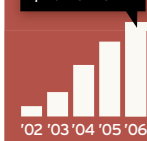
LORETTA TOFANI/For The Salt Lake Tribune

Shown with his oxygen tank nearby, Wei Chaihua, 44, suffers from silicosis, a fatal lung disease he contracted by breathing in silica dust for three years.

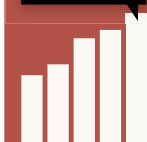
GROWING IMPORTS

Key growth areas in U.S. imports from China.

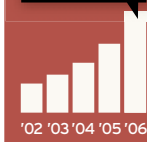
Computers:
\$17.4 billion



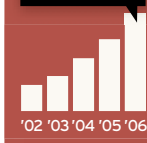
Computer parts:
\$28.9 billion



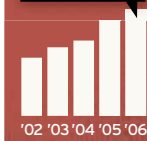
Apparel & household:
\$14.6 billion



Furniture:
\$13.2 billion



Toys:
\$22.2 billion



Source: Census Bureau

friends and neighbors leaving for jobs in distant cities. They spoke of educating their children, improving life for their families. Wei decided he should try this new route, too.

"I hoped to give my children a better future," he said.

In October 2002, Wei said goodbye to his family, not knowing when he would see them again. He traveled for 36 hours by train to southern Guangzhou Province, arriving first in Shenzhen. The heavy traffic, the noise, the loud blaring music in the streets, the tall buildings and the many factories all surprised him. The air looked like grey lint, thick with industrial dust and chemicals.

In Shenzhen, Wei initially worked in construction, but ended up seeking factory work in Foshan, only a few hours away by bus.

He found a job in the Bai Xing factory, which transformed raw steel into polished, shiny stainless steel for charcoal and gas grills. It also made "Dutch ovens," cast iron pots overlaid with bright orange, red, blue and green enamel.

The discipline, rigor and monotony of factory work surprised Wei. "I missed home, my old life, a lot," he said.

But he forced himself to adjust.

Most workers, like Wei, didn't even know what they were making, having never seen an outdoor gas oven before. When asked to name the object he made, Wei insisted he did not know. "Waiguo dongxi," he said. "Foreign thing."

Wei operated one of four machines that sand and polish steel, each machine producing metallic dust as it sanded with ever

greater refinement. His machine was last in line, producing dust containing the finest particles.

A manager told Wei the thin gauze mask he wore would protect him. Wei said he thought, simply, it would protect him from getting dust in his lungs. He did not know it was supposed to protect him from an actual disease that could kill him.

At work, Wei would open the door of the large machine that did the sanding, put the steel in its proper position, close the door and press a button. The machine made a swishing sound as it sanded; then the noise stopped. When Wei opened the door, metal dust flew out, covering his hair and face with a grey film. He'd take the steel out, put it aside, and start the whole process again.

After three years, by April 2006, Wei had difficulty breathing and suffered frequent nausea. He became tired easily, even after just two hours of standing at work. He could not walk more than a few yards without feeling breathless.

Four months later, lacking stamina, Wei stopped working and sought medical treatment. He hasn't returned to work since.

Meanwhile, the Foshan Nanhai Disease Prevention and Control Center investigated Wei's medical complaint. An inspector from the center visited Wei's factory on Dec. 8, 2006, according to an inspection document, and found the concentration of silica dust exceeded the maximum short-term exposure limit by 56 percent over 15 minutes, and exceeded the maximum permissible time weighted-average concentra-

See **SILICOSIS**, next page

► **CHINA**, from previous page

"More than 16 million enterprises in China have been subjecting workers to high, poisonous levels of toxic chemicals," the ministry said at a conference on occupational diseases in Beijing, which was reported by the state-controlled media. The ministry particularly blamed "foreign-funded" enterprises that exported goods.

China has more deaths per capita from work-related illnesses than any other country, according to the International Labor Organization. In 2005, the most recent year for which data are available, 386,645 Chinese workers died of occupational illnesses, according to Chinese government data compiled by the ILO and cited in the July 14, 2006, *Journal of Epidemiology*. Millions more live with fatal diseases caused by factory work, other epidemiologists estimated in the article.

The number of workers living with fatal diseases does not include those who suffer amputations. Primitive, unsafe machines

with blades that lack safety guards have caused millions of limb amputations since 1995, according to lawyers for Chinese workers.

The scale of the fatal diseases, deaths and amputations challenge the common wisdom — recited in both the Chinese and American press — that U.S. trade with China has helped Chinese factory workers improve their lives and living standards. "If I had known about the serious effects of the chemicals, I would not possibly have taken that job," said Chen Honghuan, 40, who was poisoned while handling cadmium to make batteries for export to Rayovac, Eveready, Energizer and Panasonic in the U.S.

China's 2002 Occupational Disease and Prevention Control Act established limits on workplace poisons, which in most cases are as strict or nearly as strict as U.S. regulations.

But it hasn't helped much. After the law was enacted, for example, the average benzene level in Chinese factories reported in 24 scientific journals from 2002 through 2004 was more than 11

times the allowable level, according to scientists from Fudan University of Public Health in Shanghai, writing in the November 2006 *Journal of Regulatory Toxicology and Pharmacology*.

Scientists reached the same conclusion about workers' exposure to lead in the manufacture of paint, batteries, iron and steel, glass, cables and certain plastics.

"The data demonstrated that many facilities in the lead industries reported in the literature were not in compliance with the OELs [occupational exposure limits], wrote Xibiao Ye and Otto Wong in a 2006 medical journal article. "Similarly, there appeared to be only a minor impact of the 2002 Act on the reduction of occupational lead poisoning in China. The current overall occupational health-monitoring system appears inadequate, lacking the necessary enforcement."

■ ■ ■

The visitors never see: Most American businesses that import from China are small and medium-sized, U.S. shipping records show. Unlike large compa-

“**There appeared to be only a minor impact of the 2002 Act on the reduction of occupational lead poisoning in China. The current overall occupational health-monitoring system appears inadequate, lacking the necessary enforcement.**”

Xibiao Ye and Otto Wong in a 2006 medical journal article

nies, they ordinarily do not visit the factories or check on factory conditions.

"I found the factory on the Internet two years ago," Michael Been, owner of A to Z Mining Tools in St. George, said of a factory he uses in Guizhou Province. "They have someone who writes English."

Been has never been to the factory and has no plans to visit.

Some larger companies, however, pay auditors to monitor conditions in the factories they use. But auditors' visits provide merely a "snapshot in time," business owners say. Chinese workers suggest those snapshots often are staged, with the number of toxins reduced before the visits and workers reassigned to new and safer tasks. The glimpse that visitors get of Chinese factories often is incomplete for other reasons: Many large factories have small satellite "workshops," which are much smaller factories nearby that visitors never see, according to Chinese workers interviewed for this story.

"These Americans visited the large factory, but never visited the

workshop where I worked," Chen Faju, 31, said as she pointed to numerous photos in her factory's magazines of visiting Americans. "If they had visited, they would have smelled the poisons."

Chen and colleagues from the workshop were hospitalized for chronic anemia and myelodysplastic anemia, beginning in 2002, a result of brushing toxic glues for years onto the soles of New Balance and other sport shoes sold in the U.S. The shoes were made by 30,000 workers in the Yue Yuen industrial park in the city of Dongguan.

Chen's medical record, dated Feb. 14, advises that she be removed from a job of "working with organic chemicals." A manager from Chen's workshop, Du Masheng, said toxins are not used anymore.

In addition, auditors typically have been more concerned with fair wages than worker safety.

Derek Wang, a former auditor for Reebok, recalls that he and his former boss lurked outside factories at night to see if workers

See **CHINA**, next page



GARRETT BROWN/Courtesy photo

A worker places shoe parts covered with chemicals in a drying booth in a Dongguan City sports-shoe factory, which made sport shoes for U.S. and the world. The worker is wearing a gauze mask with a center section of activated charcoal, which is commonly used in China. This mask, according to industrial hygienist Garrett Brown, does not have an airtight seal and provides no protection for the worker.



LORETTA TOFANI/For The Salt Lake Tribune

Patients wait at the Guangdong Hospital for Treatment and Prevention of Occupational Diseases. The patients shown here had been poisoned by carcinogens and other toxins while making cell-phone shells, sport shoes and batteries for American consumers. The woman knitting, Xu Genyi, worked in a metal-products factory that supplied cell-phone shells to U.S. companies. Xu suffers from ethane poisoning.

“My only dream now is to be at home with my family when I die.”

Wei Chaihua who contracted silicosis while at a factory in Foshan, China

► **SILICOSIS**, from previous page

tion over eight hours by 144 percent.

A spokesman for the Desheng Enamel Development Co. in Guangzhou, which owns the Bai Xing factory where Wei worked, said he knew about Wei's illness but did not believe it had resulted from his work in the factory. "We always have followed the law and regulations of the country in what we do for the worker," Zhang Li Tao said. "He only worked for the factory for one year, so we're not sure if it's the factory's fault that he has this disease or a factory where he worked previously."

Wei's identity card from the factory shows he worked there for three years. Wei says he did not work in any other factory.

Zhang said Char-Broil was the company's largest customer. The Bai Xing factory sends its products to Char-Broil using the Guangzhou Trademaster and Creation Co.

Shipping documents show that on May 15, Guangzhou Trademaster sent \$44,258 worth of barbecue parts in 7,200 cartons through the Port of Long Beach to Char-Broil. On May 21, Char-Broil received \$58,407 of "brass burners" from Desheng Enamel's shipping company.

W.C. Bradley Co., which moved its manufacturing to China in stages over the past decade, requires all overseas vendors to sign agreements saying they and any sub-contractors will comply with their country's health and safety regulations, Chief Executive Steve Butler said. "We don't want to be part of a system that creates a problem for workers," he said.

But monitoring the manufacture of the Char-Broil gas stoves from Georgia has been a challenge. W.C. Bradley employs Chinese agents to help the company operate in China. "They are responsible for sourcing our products, and for compliance — making sure the products conform to design specifications, and the materials conform to design standards," Butler said.

Butler said he did not know how agents made sure that factories comply with China's health and safety regulations, and acknowledged independent auditing may be necessary.

"How do we look over their shoulders?" Butler asked, referring to agents and factories. At a recent meeting, the company decided to include money in its bud-

get for "plane tickets to China" so employees can conduct their own audits, he said.

■ ■ ■

To return home to die: In January 2007, Wei obtained his diagnosis from the Guangzhou Occupational Disease and Prevention Hospital. A physician there told him he had silicosis and needed treatment.

Wei had never heard of the disease but was happy it could be treated. He assumed he'd get better. Instead, he got worse.

On March 19, Wei was admitted to the Guangzhou Occupational Disease and Prevention Hospital, which provided him with an oxygen tank to help him breathe.

Wei asked a physician when he'd be cured. The physician, Wei recalled, looked at him apologetically. "He told me, 'There is no cure,'" Wei said.

A medical report from the hospital dated March 27 noted Wei had "second stage silicosis." The third stage is terminal.

Now, unable to work, Wei lives in a one-room apartment rented for him by the factory. He receives a "maintenance allowance" of about \$55 per month, \$75 less than he earned while he was working. Someone from the factory brings him his meals. Under Chinese law, workers with medical records certifying that they have occupational diseases are entitled to sick pay, hospitalization and medical expenses from the employer. The employer also must provide them with housing and meals.

If the state later determines that an employee cannot work, the employer or the employer's insurance must pay them disability compensation — in most cases no more than the equivalent of two

SILICOSIS SYMPTOMS

Continued exposure:

- Shortness of Breath
- Fever
- Bluish skin at the ear lobes or lips

As the disease progresses:

- Fatigue
- Extreme shortness of breath
- Loss of appetite
- Chest pain
- Respiratory failure

AT-RISK JOBS

- Construction
- Mining
- Sandblasting
- Masonry
- Demolition
- Manufacturing of glass and metal products
- Plumbing
- Painting

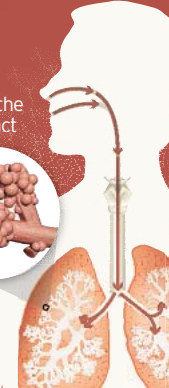
HOW SILICOSIS WORKS

Silicosis is an often fatal lung disease caused by breathing dust containing crystalline silica particles, a basic component of sand and granite. There is no cure and treatment is limited; however precautions can be taken to reduce exposure.

Inhaling **crystalline silica dust** reduces the lungs' ability to extract oxygen from the air.

Dust that's embedded in the lungs' **alveolar sacs** can't be cleared with mucous or coughing.

Source: silicosis.com



China: The high price of cheap goods

► Continued from A7

were working overtime so they could make sure they were paid for the additional work.

But asked for the ingredients of glues the factories used to make the shoes, Wang said he didn't know. He never had glues tested for carcinogenic benzene or n-hexane.

■ ■ ■

No incentive to reform: Chinese provincial governments are responsible for checking compliance with Chinese law. But too often, officials have a financial stake in businesses, leading to corruption and 24-hour warnings before rare inspections occur, said Liu Kaiming, executive director of the Institute of Contemporary Observation, a Chinese think tank.

There are too few inspectors in China to monitor safety, experts say. There is one inspector for every 35,000 Chinese workers, Brown, the American industrial hygienist, calculated in a journal article. Local governments in China also do not fully understand the "adverse effects on workers' health" of occupational hazards, according to an article this year in the journal *Regulatory Toxicology and Pharmacology*.

"Chinese labor law is not that bad," said Dominique Muller, the Hong Kong director of the International Confederation of Free Trade Unions. "The problem is the implementation."

Added Guo Jianmei, a law professor at Beijing University who represents workers injured in factories: "The problem is that the Chinese government does not have an incentive to reform the

TOXIC CHEMICALS IN THE WORKPLACE

In many cases Chinese law is more restrictive than U.S. law when it comes to toxic chemical allowances in the workplace, but enforcement is typically more lax.

What U.S. law allows



Cadmium, causes renal damage and failure

.05 milligrams per cubic meter of air over an eight-hour period for manufacture of plates for nickel-cadmium batteries.

Toluene, causes central nervous system depression

375 milligrams per cubic meter of air over eight hours.

Benzene, causes myelodysplastic anemia, a precursor to leukemia

3.19 milligrams per cubic meter of air over eight hours.

Vinyl chloride, causes liver angiosarcoma

2.5 milligrams per cubic meter of air over eight hours

Arsenic, causes lung cancer and skin carcinoma

.01 milligrams per cubic meter of air over eight hours

Chromium compounds, causes lung cancer

.5 milligrams per cubic meter of air over eight hours.

What Chinese law allows



0.01 milligrams per cubic meter of air over eight hours.

50 milligrams per cubic meter of air over eight hours.

6 milligrams per cubic meter of air over eight hours.

10 milligrams per cubic meter of air over eight hours.

.01 milligrams per cubic meter of air over eight hours.

.05 milligrams per cubic meter of air over eight hours.

Sources: OSHA, 2002 Occupational Disease and Prevention Control Act of the People's Republic of China

enterprises."

In most countries, trade unions help ensure that employers abide by occupational health and safety regulations. The unions also help train workers in proper use of machines and protective equipment.

China has only one trade union, controlled by the central government. Its function is to enhance production and maintain labor discipline. Workers who try to organize or establish their own free trade unions are arrested and face lengthy prison sentences. Lawyers who have tried to help them also have been imprisoned.

"In China, there is absolutely nothing you can do," said Au Loong-yu, a researcher for the nonprofit organization Globalization Monitor in Hong Kong.

"Workers have been robbed of the basic tool of self-defense, forming independent unions. And the government is biased in favor of the business sector, so it cracks down on workers who try to speak up for themselves."

Indeed, the Chinese government treats issues related to workers' rights as sensitive matters of

state security. Even those workers with diseases or amputations who try to help other workers with similar conditions — by forming independent nongovernment organizations (NGOs) — have had their organizations shut down by state security police, they said in interviews.

"Now we pose as a business, as a consulting firm," said Zhu Qiang, an underground NGO leader in Shenzhen who lost his arm in a crude machine while making plastic bags for America.

■ ■ ■

Savings and profits for Americans:

China's failure to permit free trade unions translates into additional cost savings for American consumers and profits for American companies, reducing the cost of manufactured imports from China from 11 percent to 44 percent, according to Columbia University law professor Mark Barenberg.

The lack of unions also makes it even more lucrative to use Chinese workers to make goods.

"In the U.S., if you are a manufacturer, you have to contribute to unemployment insurance and worker compensation insurance, you have to buy workplace environmental insurance and liability insurance, and you have to comply with the occupational health and safety law," said David Welker, research coordinator for the International Brotherhood of Teamsters in Washington, D.C.

U.S. businesses, while adamant they don't want Chinese workers to get sick or hurt, know their costs are lower because the regulatory environment is more lax.

Meanwhile, the shipping containers from China arrive every day.

ABOUT THE SERIES



Veteran reporter **Loretta Tofani's** most recent investigative project took her to China, where over a 12-

month period she visited more than 25 factories and observed firsthand how Chinese workers routinely lose their health and their lives making products for export to the United States and other countries.

Tofani, who from 1992 to 1996 was *The Philadelphia Inquirer's* Asia correspondent based in Beijing, examined thousands of U.S. import documents for this story. With a travel grant from the Pulitzer Center on Crisis Reporting in Washington, D.C. (www.pulitzercenter.org), she interviewed Chinese workers in hospitals, homes and outside their factories as well as dozens of attorneys, business leaders, government officials and labor activists. She also reviewed medical and legal records, medical journal articles, government reports and other documents.

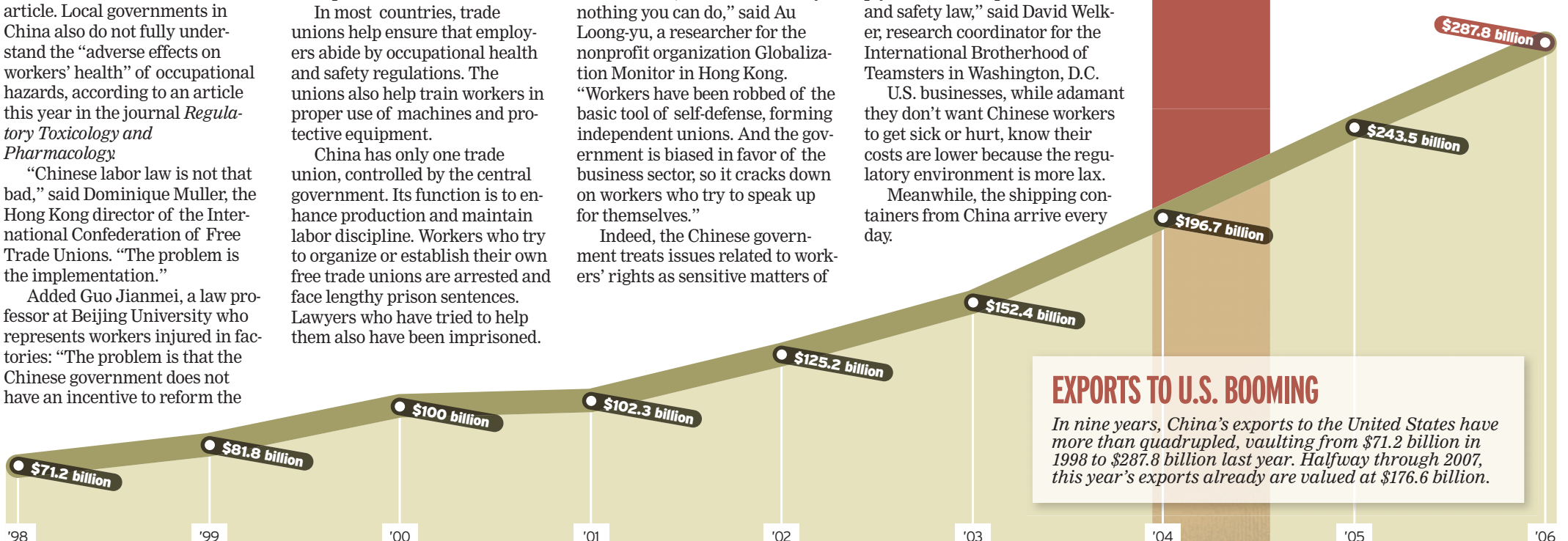
The Center for Investigative Reporting in Berkeley, Calif., also helped fund travel for the project with a grant from the Dick Goldensohn Fund for International Reporting.

Tofani won a Pulitzer Prize in 1983 at *The Washington Post* for a series documenting gang rape in a Maryland jail. She lives in Ogden.



AMERICAN IMPORTS, CHINESE DEATHS

Part one of four



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