

Salt Lake Tribune Special Report: Chinese workers lose their lives producing goods for America

*By Loretta Tofani
Special to the Tribune*

GUANGZHOU, China -- The patients arrive every day in Chinese hospitals with disabling and fatal diseases, acquired while making products for America.

On the sixth floor of the Guangzhou Occupational Disease and Prevention Hospital, Wei Chaihua, 44, sits on his iron-rail bed, tethered to an oxygen tank. He is dying of the lung disease silicosis, a result of making Char-Broil gas stoves sold in Utah and throughout the U.S.

Down the hall, He Yuyun, 36, who for years brushed America's furniture with paint containing benzene and other solvents, receives treatment for myelodysplastic anemia, a precursor to leukemia.

In another room rests Xiang Zhiqing, 39, her hair falling out and her kidneys beginning to fail from prolonged exposure to cadmium that she placed in batteries sent to the U.S.

"Do people in your country handle cadmium while they make batteries?" Xiang asks. "Do they also die from this?"

'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 dying, 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.

And 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 their 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 has not 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. "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 each year than any other country, according to the ILO. 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, EverReady, 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 Chinese and foreign experts agree enforcement has been lax. 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 companies, 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, 2007, 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 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, Huang said he did not 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 enterprises."

Unions outlawed

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 non-government 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.

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Salt Lake Tribune Special Report: Metal factories fail to protect against fatal lung diseases

*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 contracted 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 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 concentration 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, 2007, 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 budget 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 years' salary, usually not more than \$5,000. But many employers succeed in not paying it, according to lawyers.

Although Wei's employer must feed and house him for now, Wei is afraid of the factory's bosses. Like most factories in China, his factory employs a team of security guards. They are backed up, Wei believes, by gang members. Indeed, other Chinese workers interviewed for these stories who argued with their employers over back pay or overtime pay had physical evidence of severe beatings.

In one case, worker Hu Yongxian, 39, a carpenter at a factory that exported furniture to the U.S., pulled up his shirt to show wide black marks across his back and similar markings on his scalp.

"They used iron pipes," Hu said, referring to the factory's security guards, who settled a dispute over Hu's back pay. "I fell to the ground and they kept beating me."

During one of several interviews in a restaurant, Wei's cell phone rang jarringly six times, at intervals of 15 to 30 minutes each. He did not answer, but he did glance at the number on his phone each time. "It's the factory again,"

he said. "They keep calling me. They are watching me. They know I'm not in my room. They don't want me to talk about my disease, about what happened to me."

At one point, Wei considered leaving the restaurant in Foshan and cutting the interview short. "The factory has a gang," he said. "I'm afraid they will have me killed."

The factory's spokesman, Zhang Li Tao, said the factory protects itself from outside troublemakers with security guards, but he says it does not use those guards against employees.

Every day now, Wei, who has trouble eating anything more substantial than soup, wakes up around 11:30 a.m. and goes to sleep at 6 p.m. He spends most of each day in bed, listening to the radio. Sometimes, if he is feeling well enough, he walks down the block and back to his apartment.

He is waiting for the social security bureau to decide the severity of his disability so he can ask the factory for disability money. The degree of the disability, factored in a formula with Wei's salary, will determine the amount of compensation Wei can receive. He hopes for a few thousand dollars.

Wei does not intend to go to court, he said, adding that he wants a quick resolution.

Workers who go to court, usually because their employers refuse to pay compensation, tend to receive much more money than those who do not, according to a spokesman at China Labour Bulletin, a non-government organization in Hong Kong. On Dec. 22, 2005, the Huidong County People's Court awarded a silicosis patient, Feng Xingzhong, 33, a record amount: nearly \$60,000. Approximately half the amount was to cover long-term medical treatment. It was the first time a court had awarded compensation for long-term treatment to an occupational-disease patient.

Wei wants to return home to die. But he does not want to leave Foshan until he has some disability money to take home with him. As it is, he has given up his dreams of sending his children to high school and college.

"My only dream now," said Wei, "is to be at home with my family when I die."

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Salt Lake Tribune Special Report: Primitive machines take digits and limbs

*By Loretta Tofani
Special to the Tribune*

SHENZHEN, CHINA -- Three patients in a room at Shenzhen Renan Hospital share their plight with hundreds of thousands of Chinese workers: They became amputees using outdated, dangerous machines to make goods for America and the world.

Li Xueping, 44, his right hand and arm swathed in thick gauze, lost three fingers making metal kitchen and bathroom accessories for numerous American companies, including Corte Madera, Calif.-based Restoration Hardware, shipping records show.

Ho Yongjiang, 39, lost part of his thumb, and Yu Wanlin, 33, lost part of his left index finger making furniture bound for the U.S.

"I can't grow my finger back," Yu said, "so there really is no compensation."

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, 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, Restoration Hardware's senior vice-president of global sourcing, 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 had also 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 jerry-rigged. Carpenters once had used the table to sand lumber, but a factory supervisor told Yu he had changed the machine himself.

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 their design room and their 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 continued. "We tried it, for about 15-16 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 People's Hospital, where he waited for about an hour in electrifying 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'd 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."

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Salt Lake Tribune Special Report: Workers inhale toxins up to 70 hours a week

*By Loretta Tofani
Special to the Tribune*

GUANGZHOU, China -- Amputation 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 painted furniture 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. Carcinogens have 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, a disease that progresses to fatal leukemia.

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 hygienist 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 are used as solvents in paint and varnish, and also are used in the manufacture of shoes, suitcases, some toys and other goods. Benzene has been classified as a carcinogen, leading to leukemia, and 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 U.S. is 0.5 part of benzene per million parts of air in the workplace during an eight-hour work day, 40-hour work week.

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 factory where 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."

Indeed, 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, Yuyun and the others worked 10 hours seven days a week, according to her medical report, so they inhaled greater levels of toxins than scientists planned when they established "permissible levels" of toxins.

Hammond said when issues of noncompliance with health and safety standards arise in factories 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.

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

She was admitted to the hospital and she was there for a year.

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

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Salt Lake Tribune Special Report: Cadmium dust causes kidney failure, death

*By Loretta Tofani
Special to the Tribune*

GUANGZHOU, CHINA -- The red cadmium dust clouded the air, making it difficult to see. It coated machines, tables, floors, workers' clothes and food. It colored their hair.

"In a half-hour, the powder would be a half-inch high," recalled Liu Hongmei, 35, an assembly-line worker who handled the cadmium used to make batteries for major U.S. distributors such as Rayovac, Panasonic, Eveready and Energizer. "We were always sweeping it with hand brushes, trying to keep things clean."

For years, Liu and several thousand other workers at four factories owned by Gold Peak International made nickel-cadmium batteries using hand tools and simple machines. And for years, these workers complained of headaches, sore throats and vomiting. No one told them cadmium is a carcinogen capable of causing severe bone pain, kidney failure and death.

In 2004, tests showed Liu and at least 400 other workers in the four factories were suffering from much higher than normal levels of cadmium in their blood. Several of Liu's young co-workers already have died.

She and other workers learned the true nature of their illnesses only after challenging their government and their employer, confrontations for which they risked imprisonment in authoritarian China.

Chinese employers and the government failed to protect these workers, but so, too, did U.S. companies seduced by the cheap batteries they imported from China.

Today, U.S. companies no longer widely sell AA and AAA nickel-cadmium batteries in the U.S. They mostly sell the batteries on the Internet for use in cordless phones, laptops, camcorders and digital cameras. Gold Peak claims it no longer manufactures them, but has "fulfilled its obligations" to provide nickel-cadmium batteries by using a subcontractor.

Such changes are of little consolation to Liu, who has constant pain in her knees and feet. Her throat is always sore. Her head hurts. Her hair falls out in thick tufts on her pillow.

"I feel very scared," she said. "There is no medicine that can eliminate the poison, so I will have to live in pain until I have a painful death. I feel very worried. When will I die? Who will take care of my son?"

'It's impossible to breathe'

Liu began working at the Gold Peak Xianjin factory in the city of Huizhou in 1990. The factory, now called the Huizhou Advanced Battery Technology (ABT) Co. Ltd., is one of 13 battery factories Gold Peak owns in China. The 400 or so workers at the Xianjin factory produced about 50,000 batteries per day.

The workers never knew the names of the companies that ordered batteries, and it didn't matter to Liu. She just wanted the prestige and higher salary that came with factory work, she said. Liu's parents were uneducated rice farmers with high expectations for their daughter, who had attended high school, a level of education uncommon in poor rural areas. She initially earned about \$40 a month working 12-hour days, with a maximum of two days off per month.

On her first day, "The supervisor told me, 'don't be late' and 'don't leave early,'" Liu recalled. "Nothing else."

No one ever mentioned the benzene, lead, nickel and other chemicals, the cause of repulsive smells. "For a normal

person, the first time you enter the factory, it's impossible to breathe," Liu said. "It was a terrible smell."

But the chemical present in the most toxic amount was one that had no smell -- cadmium.

In the U.S., evidence of cadmium's toxicity in 1992 led the Occupational Health and Safety Administration to regulate cadmium as a carcinogen. It decreased the permissible level of cadmium dust and fumes allowed in industrial workplaces from 100 and 200 micrograms per cubic meter of air to 5 micrograms.

Even before health standards in U.S. factories became more stringent, the production of nickel-cadmium batteries had begun to shift to off-shore factories in Japan, Mexico and China, Don Dennis recalled. He worked as an engineer with General Electric Co. when it had a nickel-cadmium battery factory in Georgia in the 1960s.

Shipping records show a regular flow of Gold Peak batteries made in China to U.S. companies.

At least 20 U.S. companies bought batteries made in China from Gold Peak's factories from 1997 through 2007, import documents show. They include national chain stores, such as Best Buy, as well as single stores. The biggest customers, though, were U.S. battery companies themselves.

Energizer Holdings, for example, imported "dry batteries" from Gold Peak through the Port of Los Angeles in 2003 with a factory price of at least \$540,000. During the last three months of 1999, the Eveready Company imported \$415,100 of batteries from Gold Peak.

Rayovac, renamed Spectrum Brands in May 2005, imported at least \$2 million worth of batteries from Gold Peak's factories in China in 2003 through the ports of Los Angeles and Long Beach. Panasonic Industrial Co. imported \$145,563 of batteries from Gold Peak through the Port of Long Beach on Sept. 12, 2000.

Batteries come first

In China, each step of the battery-making process required human labor. A worker first scooped the cadmium powder out of bags that arrived from Hong Kong with a hand shovel, separating it into smaller quantities and mixing it with other metals, including nickel. She would place the mixture into a machine that would stir and press it, forming it into rolls of cadmium paper. The cadmium then was ready for the assembly line.

Liu's job was to unroll the copper-colored sheet of cadmium paper that would help a finished battery conduct electricity. Then, using a simple clamping machine, she would attach nickel hydroxide onto the sheet.

Liu was given a paper mask to wear, as well as a cotton glove for her right hand. No one received gloves for their left hands in an apparent measure to economize, she said, and even the glove for her right hand seemed useless.

"It was just cloth, so chemicals would pass through the material and sting," she said. "The other hand hurt even more."

The mask did not cover her nose. Cadmium dust entered her nostrils and mouth and lodged in her throat and her mouth, burning them, she said. It also covered her hair. When she returned home, she'd wash her hair in a basin, shampooing and rinsing three times. "The water was all red," she said.

The factory had no ventilation. In the early and mid-1990s, there were fans, but the windows never were opened, not even during the summer, Liu and other workers from the same factory said. "The supervisors were afraid the moisture in the [outside] air would hurt the batteries," Liu said. "They were concerned about protecting the batteries, not the workers."

Later, air conditioners were installed, but the ducts to the outside were sealed shut, so the ventilation still was limited.

After working at the factory for three years Liu developed severe headaches, a near-constant sore throat, and pains in her back and knees. Her voice grew hoarse. By the late 1990s, she would sometimes open her mouth to speak and hear no sound.

She and her colleagues compared ailments. "We had the same kinds of problems. We just thought we were too tired, that it was because of the long hours we were working," Liu said.

Across town, at the Huizhou Power Pack factory owned by Gold Peak, Xie Xin Rong, now 35, felt lucky. Her parents had been poor rice farmers. But she had a good factory job and was able to work lots of overtime. Some months she'd bring home the equivalent of \$70.

Her job was similar to Liu's. For 11 hours each day, she'd hold thousands of small metal plates of pressed cadmium powder. Xie would hold each plate in her left hand. With her right, she'd hold a clamping machine, and clamp another metal plate of nickel hydroxide onto the cadmium plate. The plates would become the two poles of the battery. In one hour, she estimated, she would hold 1,200 plates of pressed cadmium powder.

After working in the factory for a year, in 2000 she became ill: Her hair fell out, her knees hurt, and she had severe headaches and vomiting. "I knew if I felt a headache coming, that I had to run to the toilet to vomit," she said, adding that she had to beg her supervisors for permission to be excused. "If they'd say 'no,' I'd keep asking and start crying."

On strike

By 2002, China had toughened its own limits for airborne cadmium in factories to 20 micrograms per cubic meter. But Chinese inspection reports show these limits often were exceeded.

On March 3, 2003, for example, an inspector with the Huizhou Center of Disease Control found the level of cadmium in the air at the Gold Peak ABT factory in Huizhou was 10 times the maximum allowable amount. Less than a year later, another inspector found cadmium in the ABT factory was 35 times higher than permissible levels.

The company failed to notify workers of the toxic level of cadmium in the factory, company executive director W.S. Hui said in a written statement, because "annual health checks [of workers] before 2004 did not reveal any abnormality." Prior to 2004, blood or urine tests to detect cadmium were unavailable in southern China, Hui said, although workers disputed that claim.

Workers themselves, at both of the Gold Peak factories, discovered on their own how they had absorbed high levels of cadmium. In December 2003, a worker from the Huizhou Power Pack factory went to the Guangzhou Occupational Disease Prevention and Treatment Centre, where a blood test showed his cadmium level was much higher than allowable limits, according to Au Loong-yu, a researcher with Globalisation Monitor, which has collected the workers' medical records.

A few months later, when the factory did nothing about the employee's high test results, the workers did something courageous in China: They went on strike.

Dozens of workers paid for blood tests themselves at the Guangzhou hospital. "They all came back with bad news, having excessive levels of cadmium in their blood," said Lu Haifeng, another worker from the Power Pack factory.

Lu learned the cadmium in her blood was four times the allowable limit.

"How could the factory do this to me?" she asked. "I am only 31 years old; what am I going to do with the rest of my life? Who is going to take care of my children?"

A few weeks later, Liu and the other Gold Peak ABT workers, no longer docile and industrious, staged a sit-in. They demanded that their own factory have them tested for cadmium .

Liu's blood test showed she had 18.9 micrograms of cadmium per liter; the normal range is 5 or lower.

After the test results were disclosed, dozens of battery workers from both factories went to Beijing to seek help from the central government. Huizhou police and officials unsuccessfully tried to stop them, battery worker Xiang Zhiqing, and others said. In Beijing, the workers visited central government offices of the health and labor

departments. Officials there directed them to seek help from provincial officials, Xiang said.

A Huizhou government panel led by Huizhou Mayor Huang Yebun later issued a written warning to the workers against complaining to high-ranking officials. The Sept. 3, 2004, warning noted that workers must "obey the law strictly."

Police did not arrest the workers when they visited Beijing. "However, after 4th September, if anyone does the same act, the police will exercise the corresponding punishment on them, according to the Public Security Management Punishment Enactment," the letter read, a reference to arrest and imprisonment.

Guarded responses

As Chinese workers fought to learn about their illnesses, little evidence exists that U.S. battery suppliers sought to learn of working conditions in the factories that provided their products.

Energizer Holdings and Rayovac on their Web sites address concerns about U.S. consumers' safety in using the batteries, noting in product safety sheets that nickel and cadmium are possible carcinogens. But neither company would say whether they ever visited these factories from the time they started buying the batteries.

When asked about Energizer Holdings' concerns for Chinese workers who made Eveready and Energizer batteries for the company for many years, acting spokeswoman Jacqueline Burwitz said: "We are not the manufacturers of the batteries . . . I have no knowledge of those Chinese workers at another employer's plant."

The company also emphasizes on its Web site its policy of providing "safe, healthy, clean and sanitary working conditions at all facilities" and of following all "occupational health and safety laws." But it does not specifically address the safety of overseas workers who made batteries for Energizer Holdings yet were employed by another company.

Rayovac notes on its Web site a policy of maintaining facilities free from recognizable hazards.

Ryan Chuckel, a Rayovac spokesman, said in an e-mail that "safety and quality are the top priority for Rayovac in all aspects of the manufacturing process." The company, according to the e-mail, conducts "comprehensive inspections of all overseas manufacturing facilities before entering into outsourcing arrangements, including reviews of engineering, quality, service and compliance with local regulations and laws."

The e-mail, however, did not specifically address how the company checks on compliance with China's worker-safety laws. The company declined to comment beyond the e-mail statement.

Panasonic is now the North American branch of the Japanese electric products manufacturer Matsushita Electric. The company did not return numerous e-mail and telephone calls.

In interviews, Chinese factory workers complained that whenever non-Asian visitors came to their factories, supervisors removed obvious hazards, such as glues with high benzene content. In general, U.S. business executives say that Chinese manufacturers often show them only their most modern factories and rarely grant access to those plants with substandard equipment and working conditions.

'This is really unbearable'

By the end of summer 2004, most of the workers with abnormal cadmium levels left their jobs at Gold Peak's two factories in Huizhou. Factory representatives told the workers they could continue working at the factory, in different jobs, or quit immediately and accept compensation of about \$400 to \$1,000 depending on the severity of their illness and how much they made.

Liu and Xie accepted the money: in their cases \$500 each, or less than a year's salary. They have spent it, mostly on doctor visits and pain medicine.

In 2005, about 300 former Gold Peak workers filed civil suits in Huizhou, seeking compensation of about \$31,000 each. The court denied the workers' claims, finding their conditions "had not reached the nationally

recognized level that qualifies as cadmium poisoning."

Cadmium poisoning in China is defined as clear clinical manifestation, essentially near-death, when kidneys don't function. But less severe abnormalities in kidney function -- such as difficulties in cleaning waste and delivering nutrients to the body -- usually occur gradually over the years, worsening over time, according to medical journals.

In 2001, Liu gave birth to a boy, named Yi Hao, now 6.

Like most of the 45 other children whose mothers were pregnant while they worked in four factories manufacturing nickel-cadmium batteries in China, Yi has a weak immune system. Liu said her son has constant severe colds and sore throats. In one study of seven such children, Chinese researchers found that their urinary cadmium concentration was higher than in a control group.

Liu lives in a one-bedroom apartment with her son, her husband, and her husband's parents. Her husband has been unable to find a steady job. They borrow money from her husband's brother for food and rent.

Today, Liu is still has pain in her knees, and feet. Her throat is always sore, her head hurts and big chunks of her hair fall out.

"From the outside you cannot tell I have these problems," Liu said. "Even on the day I die, you won't be able to know from the way I look."

Now, Lu and Xie are unemployed and worry about their children. Although she is only 35, Lu always thinks about death and dying. "I worry, 'When will my death, my destiny come? Who will take care of my children?' This is really unbearable for me."

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Salt Lake Tribune Special Report: Companies say they are not to blame; who is?

*By Loretta Tofani
Special to the Tribune*

HUNTINGTON -- Genco Mine Service, a small company that sells trucks that transport miners deep underground, buys its vehicles from a factory in Beijing. The company's owners know the factory uses outdated machinery and unsafe production methods, but they accept those conditions as the normal course of doing business with China.

"China's equipment and machinery are like ours in the 1940s," Genco co-owner Glenn Sebring said. "They can't afford a forklift. If they have to move a truck, they stick four boards under the body and they walk it around."

As he sees it, it's up to China -- not him -- to figure out how to protect factory workers from occupational diseases and injuries. If China someday increases his costs by buying new machines or by providing workers with better protective gear, Sebring may do business elsewhere to remain competitive. "Next maybe it's Micronesia," he said.

Sebring emphasizes that he doesn't want workers to get sick or hurt. But he doesn't believe small businesses like his are responsible for working conditions in factories they may buy from but hardly control.

So who is responsible?

Is it Chinese businesses or the nation's central or local governments? International trade and labor organizations? Consumers themselves who buy -- and demand -- cheap Chinese-made goods?

Pat Goodsell never considered the role she and other shoppers play. The Ogden woman was simply bargain hunting when she paid \$99 for a Char-Broil gas stove that she bought as a Mother's Day present for herself.

Told recently that Chinese workers sanding and polishing the parts for the metal grills had contracted the lung disease silicosis, she reacted with dismay.

"I never thought about the Chinese workers who made them," she said, articulating a widespread American view. "We just want it [the product] to work."

Import records tell the story of Utah's growing reliance on Chinese-made goods. In the first five months of this year, Utah companies received 1,680 shipments from overseas. About 85 percent of those shipments originated in China.

What comes here from China? Almost everything, it seems. Furniture, sprinklers and other irrigation equipment, treadmills and stationary bicycles, sleeping bags, rings and necklaces, trampolines, automobile parts, floor tiles and countertops, shipping documents show.

Shipments from China arrive with such regularity that there's little doubt China has become Utah's factory, yet worker safety in China has not been a primary concern.

Businesses typically are singularly focused on the end result when it comes to Chinese-made goods. They exist to increase profits in part by lowering costs, and few businesses are naive about why costs are lower in China.

Sebring, for example, describes how Chinese workers in the factory that makes his mining vehicles wear masks with charcoal filters while spray-painting the vehicles. But they don't work in ventilated spray booths as workers do in the United States -- booths that increase production costs.

"There are no [independent] unions, so they work longer hours," said Sebring, who has visited the factory he used in Beijing at least seven times in the past 10 years. "They don't have a 40-hour work week, like we do."

And although a 2002 Chinese law seeks to protect workers from occupational illnesses, critics say it is rarely enforced.

"The Chinese don't have the same respect for human life we do," he said. "They almost treat the worker as a machine. The attitude is, 'when it wears out, we get another one.'"

Other businesses certainly are motivated to make money, but emphasize they at least try to improve conditions for Chinese workers.

Jeff Elvin, owner of Dakota Enterprises in Edina, Minn., has been to the southern China factory that cuts and polishes the gemstone beads his company imports. While there, he noticed the lack of proper protective gear.

"My dad works in the safety industry, so we sent them boxes of 3-M face masks to stop any rock particles," he said. A 2004 Chinese medical survey organized by Zhang Donghui, a researcher with the Guangzhou Occupational Disease and Prevention Centre, found 56 percent of testing sites inside 152 gem-processing factories in Guangdong Province alone had levels of silica dust exceeding legal limits. Particles from cut rocks and minerals lodge into workers' lungs, causing silicosis, a disease that makes breathing difficult, and eventually impossible.

Elvin said he noticed on a subsequent visit that workers never wore the masks he sent to the factory. "The boxes were there, and the masks were still inside them."

Yet he continues to do business with the factory, Ko Ngar Gems Factory Ltd., even after a court last year ordered its Hong Kong owners to pay worker Feng Xingzhong nearly \$60,000 in compensation for silicosis.

"The workers are not completely aware of the dangers that go on, and they don't place value on the same things we do," Elvin said. "They are building income for the family, and the individual doesn't matter so much. They're working for the greater good of the family."

His company provided the masks, he said. "That's as far as we could go."

Does his own inspecting

Downeast Outfitters of Orem does independent audits itself of factories it pays to make its furniture.

Co-owner Bill Freedman said he travels to China up to seven times a year. "People I know in the furniture industry think I'm insane; it's so unusual not to work with a trading partner or agent," he said. "I have no problem traveling there, going by myself."

Freedman said the 15- to 20-hour plane trips are worth it because he can personally inspect factories where he is considering placing orders. Through visits, he can eliminate those factories where conditions are poor or blatantly unsafe.

"They have a gold-rush mentality in China," he said. "People are in such a rush to produce, produce, produce that they're less concerned with providing a safe environment."

On his laptop computer, Freedman displayed a photo of a factory he considered using. On the screen appeared a gymnasium-sized concrete room with small, closed windows near the ceiling. "There's no ventilation in this room,

but there's lots of dust," he said. "If you're sanding, the dust has to be ducted to the outside of the factory. This factory doesn't have ducts."

Freedman displayed another photo of someone kneeling, pushing an electric sander over lumber in the factory. "See this man sanding?" he asked. "He's not sitting on a stool. And he's not wearing a mask."

The factory offered Freedman rock-bottom prices, but he decided not to place an order. "If they don't treat the workers well, you know they're not going to treat you well," he said.

As well-intentioned as Freedman appears, he doesn't know whether machines in the factories he visited have safety guards to protect workers from amputation. He also doesn't know whether any accidents or amputations occurred in the dozens of factories he visited.

Still, he feels it's important to work with factories where the conditions appear generous; those factories are more likely to produce quality furniture.

Like all business owners, though, Freedman must juggle his goal of using factories that have decent work conditions with two other goals: getting the products and styles he wants at good quality, and getting a low price.

The concept of American corporate responsibility to overseas workers is still evolving. In the early 1990s, Nike was widely criticized for the low wages it paid workers in Asian factories. Nike initially ignored or deflected criticisms, noting it did not own the factories.

But concerned that criticism could tarnish its brands, Nike and other companies eventually developed codes of conduct they sometimes posted on walls in overseas factories. The codes typically noted the factories were expected to abide by all local laws, including wage and overtime laws.

Still, stories appeared about problems in overseas factories, alleging Nike was not just cheating workers out of wages and overtime, but was using child labor. A 1996 Life magazine photo showed a 12-year-old boy in Pakistan stitching a Nike soccer ball.

To enforce codes of conduct, U.S. and multinational companies began hiring auditors to check on compliance. Auditing apparently has protected some children from working in factories; U.S. and multinational companies say they have "zero tolerance" for use of child labor.

But the auditors -- usually, accounting firms -- often miss other major problems, according to Dara O'Rourke, assistant professor of environmental and labor policy at the University of California, Berkeley.

In a September 2000 research paper, O'Rourke wrote that he accompanied auditors on factory inspections in China and Korea in 2000. The auditors failed to note hazardous chemical use, other serious health and safety problems, as well as barriers to freedom of association and collective bargaining.

The reports "miss major issues and paint a false impression of a factory's compliance with local laws," O'Rourke wrote.

Today, some business managers and labor activists alike echo O'Rourke's complaints.

Han Dongfang, a Chinese labor activist expelled from China in 1993, believes the idea of business leaders voluntarily auditing factories -- or paying a company to check that factories abide by health and safety laws -- is ridiculous. "It is naive to expect foreign companies to promote good labor practices," said Han, who works from Hong Kong at China Labour Bulletin. "The reason they go to China is to take advantage of cheap labor and improve their profits."

For its part, the Chinese government acknowledges that millions of workers routinely suffer fatal diseases from

toxins used in "foreign-funded" enterprises. It blames the U.S. and other countries for the carcinogenic chemicals and other toxins that are used to make products for export without regard for the Chinese people.

Qiao Jian, the government official who heads the All China Federation of Trade Unions, said one way to address China's occupational safety and health crisis may be to expand the government- controlled union's reach into factories where worker representation is lacking.

"Previously we thought that the trade union should be controlled from top downward and set up by the boss," he said. "But now we're thinking it might be best to leave some things up to the workers and have them express their own free will."

Hansen Wang, owner of Gilbert, Ariz.-based Gem Mall and Popular Gems Corp., cautions against applying U.S. standards to developing nations.

Wang, who said he is from China, has visited the Lucky Gem and Jewelry Factory in Guangdong Province while buying gems. The factory was ordered by a Chinese court to compensate 48 workers for silicosis, including 12 workers who courts ruled had developed silicosis from working at the factory. "From what I've seen there has been much improvement but still there is room to improve," Wang said, noting that the factory has purchased some fans. "More needs to be done."

Virtually all gem-processing factories overseas have unhealthy conditions, Wang said.

"The factory environment cannot be as good as people in the U.S. would like to see," he said. "The standards in the environment outside the factories are not high, so they cannot be high inside the factories. They are factories, after all, and they are in poorer countries."

Regardless, Chinese workers will demand safer work environments, according to labor activist Han. As more Chinese workers get occupational diseases or amputations, the number of strikes and labor actions will spiral in China, he said.

He believes strikes and lawsuits also will challenge U.S. and other overseas companies that do business in China. "Chinese workers must hold foreign companies responsible and take legal actions insisting on the protection of workers' rights," he said.

Garrett Brown, the California industrial hygienist, thinks global change is needed to truly protect workers. The problem is the world economic system -- a system that so prizes low wages and low factory costs that workers' health is ruined, said Brown, who also coordinates the Maquiladora Health & Safety Support Network, a group of 400 professionals working to improve factory conditions.

"Unless you change the world economic system," he said, "you're not going to change this system."

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Salt Lake Tribune Special Report: About the series

*By Loretta Tofani
Special to the Tribune*

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 first-hand how Chinese workers routinely risk their health and sometimes 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., 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.

NEW: Governor Huntsman reacts to the series, calls for business owners to protect Chinese workers. Read the story at http://www.sltrib.com/china/ci_7264708.

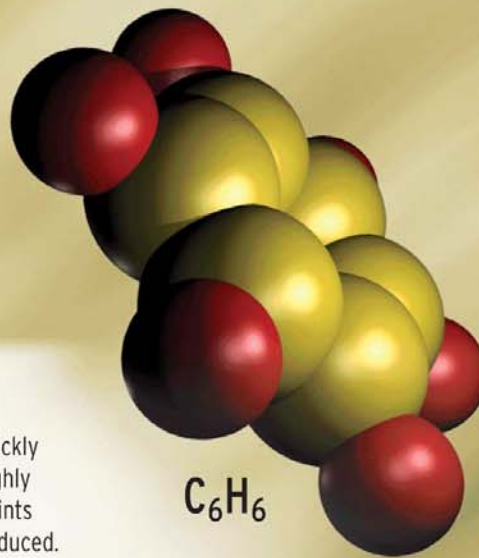
Additional resources:

- Law of the People's Republic of China on prevention and control of occupational diseases: http://english.gov.cn/laws/2005-10/10content_75718.htm
- Journal article on Occupational Health and Safety Legislation and Implementation in China: http://www.ijoh.com/pfds/0904_Su.pdf
- U.S. Agency for Toxic Substances and Disease Registry: <http://www.atsdr.cdc.gov/tfacts5.html>
- Maquiladora Health and Safety Support Network: <http://mhssn.igc.org>
- Globalization Monitor: <http://www.globalmon.org>
- China Labour Bulletin: <http://www.clb.org.hk>
- Journal article on workers exposed to Benzene in China: <http://www.ehponline.org/docs/1996/Suppl-6/yin.html>
- Journal Article on standards in China: http://mhssn.igc.org/IJOEH_ORourke.pdf
- Journal Article, "The Absence of Rigor and Failure of Implementation": http://mhssn.igc.org/IJOEH_Pringle.pdf
- International Labour Organization: <http://www.ilo.org>

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Benzene

This aromatic hydrocarbon is widely used, mostly in paints, and prolonged exposure can cause leukemia



ABOUT THE SUBSTANCE

Benzene is a colorless or light yellow liquid. It evaporates quickly and has a sweet odor. The vapor is heavier than air and is highly flammable. Benzene is widely used in the manufacture of paints and printing products and is one of the top 20 chemicals produced.

In the past benzene was produced from coal. Now it is made using petroleum for greater volume. It occurs in the environment from motor vehicle exhaust, industrial emissions, gasoline, and naturally from forest fires and volcanos. A common source of benzene exposure is from cigarette smoke.

WHERE IS IT?

Benzene is found in ink, paint, finishes, plastic, rubber, gasoline and synthetic fibers such as nylon and polyester. It is used in the manufacture of detergents, pesticides, plastics, pharmaceuticals and explosives, and in the extraction of oils. Benzene is also used in dry-cleaning.



EXPOSURE TO BENZENE

Humans can be exposed to the chemical through inhalation, consumption of food or water contaminated with benzene or through contact with the skin.

Short-term exposure or consumption symptoms:

- Vomiting
- Stomach irritation
- Dizziness
- Drowsiness
- Sleepiness
- Convulsions
- Headaches
- Tremors
- Confusion
- Rapid or irregular heartbeat
- Death (at very high levels)

Long-term exposure health effects:

Bone marrow damage (loss of red blood cell production) including aplastic anemia

Leukemia (cancer of white blood cell-forming tissue)

Immune system damage (loss of white blood cell production)

Reproductive and developmental damage (may impair fertility in women and adversely affect the fetus)

Exposure to vapors and liquids may irritate the eyes, skin and respiratory system

Dermal contact can result in redness and blisters

Liver breaks down the benzene

Cadmium

This common battery and paint ingredient can be very toxic, especially for those who handle it in production

ABOUT THE SUBSTANCE

Cadmium is a soft, bluish-white metal. Often found as an impurity in other metal ores, cadmium also naturally occurs in the environment through erosion of soil and rock, forest fires and volcanic eruptions.

PRODUCTION

It is mainly produced from the refining and smelting of zinc ore, and in smaller amounts from lead and copper ore. Small amounts also are recovered from recycling iron and steel in the smelting process. China is the current top producer of cadmium

PRODUCT USAGE

Since about 1850 cadmium has been used as a pigment, producing bright reds, strong yellows and orange hues. It is used to color paints, ceramics, glass and plastics.

Since the time of Thomas Edison cadmium has been used in batteries. Currently more than three quarters of all cadmium is now used for nickel cadmium (NiCd) rechargeable batteries. Cadmium also is used in the electroplating process and as a stabilizer in plastics such as PVC.

TOXIC HEALTH EFFECTS

Cadmium can be ingested, inhaled or absorbed through the skin. Most safety issues deal with inhalation, as it is responsible for the quickest and highest levels of exposure for workers in factories.

Short-term exposure: nausea, vomiting, diarrhea, muscle cramps, sensory disturbances, liver injury, convulsions, shock and renal failure.

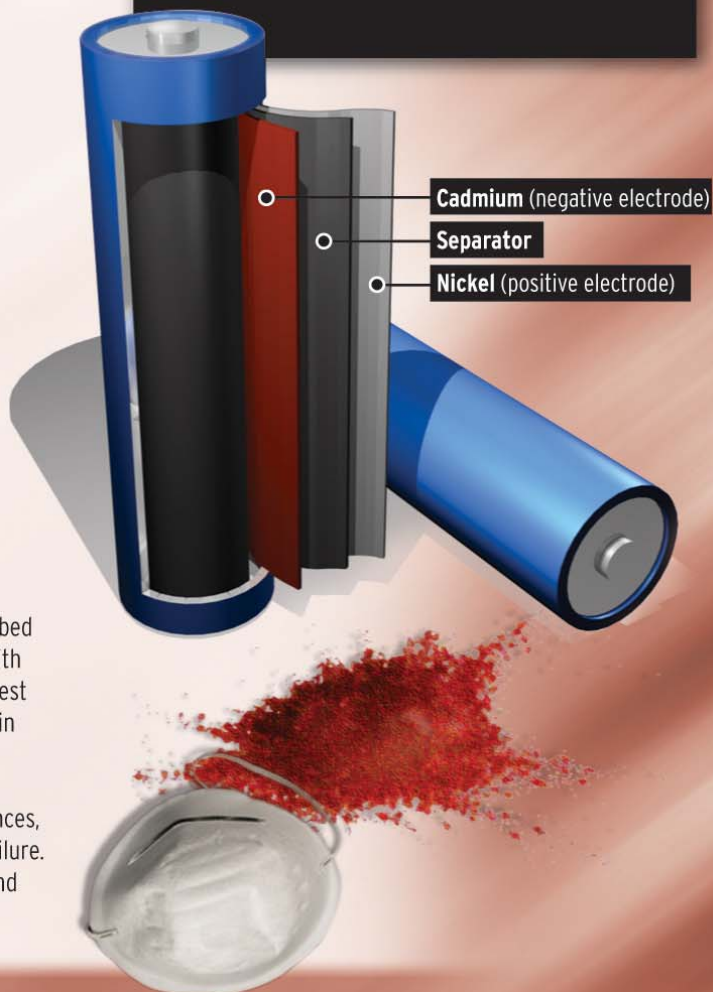
Long-term exposure: kidney, liver, bone and blood damage.



Small cadmium rocks

How a battery works

Thin sheets of nickel and cadmium are tightly rolled to form the core. A chemical reaction between nickel hydroxide, cadmium hydroxide and an electrolyte, potassium hydroxide, produces an electrical current.



Silicosis: Occupational lung disease

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 for silicosis, and treatment options are limited. However, the condition can be prevented if measures are taken to reduce exposure.

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

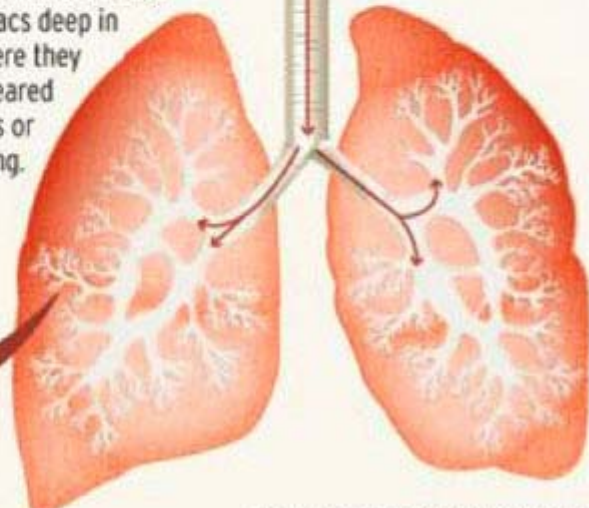
At-risk occupations

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

Inhaling the dust can cause scar tissue to form in the lungs that reduces the lungs' ability to extract oxygen from the air.

CRYSTALLINE SILICA DUST

Silica dust particles can embed themselves in the alveolar sacs deep in the lungs where they cannot be cleared by mucous or coughing.



Source: U.S. Department of Labor Occupational Safety and Health Administration, silicosis.com

AMY LEWIS/The Salt Lake Tribune

