

# Freight train services' growth on right track



Greater rail links bring opportunities to create inland hub of opening-up

By YUAN SHENGGAO

Loaded with 1,200 metric tons of ductile cast-iron pipes produced in Shanxi province, a freight train departed from Fanglue International Bonded Land Port in the city of Houma on April 14. It will travel to the Alataw Pass Land Port in Northwest China's Xinjiang Uygur autonomous region and arrive in Babatay in the Central Asian country of Kazakhstan.

It marked the launch of the China-Central Asia freight train service in Shanxi and the latest addition to Shanxi's international cargo train services following the operations of services via the China-Europe and China-Laos railway routes.

Shanxi, which has positioned itself as a new hub for opening-up in inland China, has developed the China-Europe freight train service since 2017. The Zhongding Logistics Park in the city of Jinzhong is the major hub for this trade route.

Shanxi's freight train service toward Laos and the rest of Southeast Asia started on March 15. The bonded land port in Houma is the starting point of the route.

Since 2017, Shanxi's freight trains have reached more than 30 cities in Europe, Central Asia and Southeast Asia. These destinations are mostly located in countries and regions involved in the Belt and Road Initia-



The first China-Central Asia freight train from Shanxi leaves Fanglue International Bonded Land Port in the city of Houma on April 14.

GUO ZHENMENG / FOR CHINA DAILY

tive. The initiative was proposed by China in 2013 to improve connectivity to boost international economic exchanges.

The international train services have made Shanxi a hub for opening-up in inland China and greatly contributed to promoting international business cooperation under the framework of the BRI, local officials and industry insiders said.

Developing international logistics passageways through China's cross-border railway facilities can break the limits of the inland province to do international trade.

For this purpose, Shanxi has developed a number of land ports and logistics parks to serve interna-

tional freight trains. These include Zhongding in Jinzhong and Fanglue in Houma, as well as others in the cities of Datong, Yangquan, Jiexiu and Xiaoyi.

The recently established Fanglue International Bonded Land Port covers more than 200 hectares. It is a facility mainly serving shipments of cargo containers.

According to Wei Genshang, deputy general manager of Fanglue, the land port is now one of the important international logistics hubs in Shanxi, serving freight trains connecting Southeast Asia, Central Asia and Europe as well.

"We have established extensive and close collaborations with rail-

way operators in China, Germany, Russia and other countries for regular international freight train operations," Wei said.

He noted that the ductile cast-iron pipes onboard the inaugural China-Central Asia train were made by Tianyi Casting based in the southeastern Shanxi city of Jincheng, worth more than 20 million yuan (\$3.13 million).

Wei said this shipment is of great significance as the transactions were made during a critical period of COVID-19 pandemic control and prevention.

"We are happy to see that there are still great demands for Shanxi-made products in international

markets, despite the pandemic," the executive said. "So we are fully optimistic about our operations in the future and the general outlook of Shanxi's economy."

To date, freight trains dispatched from the city of Houma have reached destinations in more than 10 countries, through railway lines with a total length of more than 100,000 kilometers, according to Wei.

He said Fanglue is seeking close collaborations with suppliers, buyers and logistics companies in China and countries along the railway routes. He added that it is planning to make its services available at more destinations.

He cited the China-Laos railway as an example, saying that Fanglue is seeking to move more cargo to Southeast Asian countries including Laos, Thailand, Cambodia and Vietnam in the near future.

Manufacturing enterprises in Shanxi are making good use of the international freight train service to export their products.

One such example is Datong Zynitex Textile Technology, which had booked a train wagon to transport its wool to Europe. About 25 tons of wool produced by the company was loaded onto a train that left for Europe on April 15. It is scheduled to arrive in Hamburg, Germany about 20 days later.

Recent dispatches from Shanxi also include automobiles, auto parts, machinery, plastics, robots and glassware.

Zhou Zhifei, deputy general manager of Zhongding Logistics Park, one of the major operators of the China-Europe freight train service, said the past few years saw not only the growing cargo-transporting volume, but also increasing varieties of exports.

He recalled that when the freight train service was launched in 2017, construction machines and castings were the major commodities for export.

"And now the exports cover almost every aspect of life and the economy, from clothes, furniture and sports gear to metals, minerals, chemicals, electronics and machines," Zhou said. "That shows the increasing popularity of Shanxi-made commodities in global markets."

He noted that the international freight train service is not only a facilitator of Shanxi's foreign trade, but also a showcase for the province's industrial strength.

Guo Yanjie contributed to this story.

## New material producer a model of development

By YUAN SHENGGAO

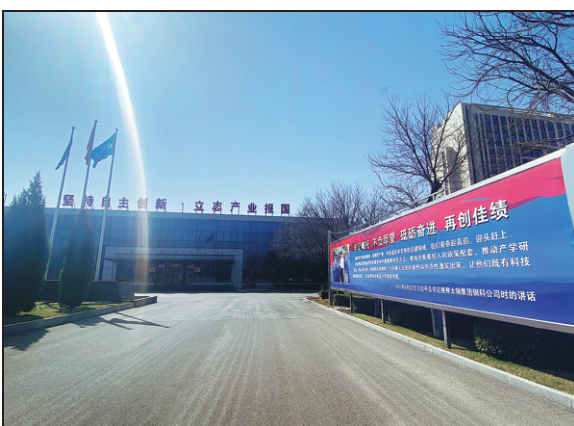
During the Beijing 2022 Olympic Winter Games in February, the carbon fiber sledges and helmets won praise from the athletes that used them and drew attention from industry insiders for their high strength and light weight.

The products were made by Shanxi-based Gangke Carbon Materials, based on their patented carbon fiber technologies.

Called "black gold" by industry insiders, carbon fiber is a new, high value-added material with wide-ranged applications. In addition to making sports gear, it is also a strategic material used in the aeronautical and astronautical industries, according to executives of the company.

Founded in 2012, Gangke Carbon Materials is a subsidiary of Taiyuan Iron & Steel Group, a leading steelmaker in Shanxi province.

It began its research, development and production of carbon fiber products five years ago. It boasts three fully automated production lines for making polyacrylonitrile carbon fiber materials, with an annual production capacity reaching 2,400 metric tons. It is now one of the leading suppliers of high-per-



Gangke Carbon Materials based in Taiyuan is a leading supplier of high-performance carbon fiber in China. ZHANG YI / FOR CHINA DAILY

formance carbon fiber in China and has been recognized as a national-level high-tech company.

Company executives said the company's success can be attributed to its steadily improving R&D capacity and its close collaborations with research institutions, universities and downstream enterprises.

The company now boasts a strong R&D team of 80 researchers and engineers.

Its R&D system comprises three

provincial-level innovation centers and a number of studios named after the leading and outstanding researchers.

According to Yang Han, head of the Yang Han Studio, the studios are so named to encourage enthusiasm for innovation among research staff members.

Yang's contributions included his bold attempt to upgrade the production line with the adjustment of some key technological

parameters, which has led to a onefold increase in efficiency.

The company's other incentives to encourage staff members' initiatives in innovation also include granting equity shares to remarkable contributors in research, according to Yang.

In addition, the company has established close partnerships with China's leading research institutions including the Chemical Institute of Chinese Academy of Sciences and Shanghai-based Fudan University to make use of their advantageous research resources and results.

It has also closely collaborated with clients for the design and development of new products tailored to specific demands.

Responding to substantially increasing market demands, Taiyuan Iron & Steel is planning additional investment in Gangke Carbon Materials, which will be used in building two production lines and one test line.

With such new facilities in place, Gangke Carbon Materials is expected to produce 6,000 tons of high-performance carbon fiber products by the end of the 14th Five-Year Plan (2021-25), according to company executives.

Wang Pei contributed to this story.



A solar farm in the county of Fanshi in Shanxi province.

LI ZHAOMIN / FOR CHINA DAILY

## Province playing a role to reduce carbon emissions

By YUAN SHENGGAO

A major coal and energy producer, North China's Shanxi province is contributing its efforts to China's campaign of carbon peaking and neutrality.

Chinese authorities pledged to the international community last year that the country will reach peak carbon emissions in 2030 and carbon neutrality in 2060.

Shanxi is one of the pilot provinces for industrial transformation and energy revolution in China. It has been reducing its reliance on coal mining and other heavy industries, prioritizing the development of clean energy resources and improving energy use efficiency to reduce emissions.

One of the major contributors to energy efficiency improvement and emission reduction is the Datong Research Institute for Clean and Efficient Utilization of Coal.

One of its research breakthroughs is the circulating fluidized coal combustion technology for boilers.

Liu Zhicheng, deputy chief of the institute, said the technology can substantially reduce emission of pollutants and also improve operational efficiency for enterprises, especially power and heating plants, through more efficient coal combustion in boilers.

The institute and its cooperative manufacturers have produced more than 70 units of such boilers to date, generating revenue of more than 30 billion yuan (\$16.8 billion).

The institute now operates seven laboratories for research on circulating fluidized coal combustion, coal gasification and coal liquefaction. Many of its research results have been widely used in coal mines, coking plants, steelmakers and power plants in Shanxi and

the rest of the country.

Coal-mining and energy giant Jinneng Holding Group is another role model in Shanxi for helping carbon peaking and neutrality through promoting clean production and improving efficiency of its coal mines.

The efficiency improvement of coal mines is made possible with digitalization, according to executives of the company.

The group's Tashan Coal Mine is among the pioneering smart coal mines in Shanxi and the entire country, using digital and 5G-connected technologies.

The coal mine is constantly upgrading its equipment and technologies to digitalize its operations, according to Li Hua, an executive with the mine.

These upgrades include the use of robots for coal mine shaft patrolling and inspection, fully automated coal cutting and conveyance, and 5G-connected monitoring, Li said.

Jinneng Holding Group plans to have all its large-scale mines going smart by the end of this year.

In Shanxi as a whole, a total of 1,000 coal-mining shafts have launched digitalized upgrades, according to the Shanxi Energy Administration.

In addition to upgrading its coal-mining and coal-consuming enterprises, Shanxi has prioritized developing clean energy resources like hydrogen, wind and solar power.

By the end of the 13th Five-Year Plan (2016-20), about 18 percent of electricity generated in Shanxi was from clean and renewable energy resources, according to the administration.

Han Linfang contributed to this story.

## Xinghuacun a historical gem in alcohol production

By YUAN SHENGGAO

China has an alcoholic beverage production history of about 6,000 years. That is according to an archaeological discovery made at the site where today's famous Shanxi distillery Xinghuacun Fenjiu Group is located.

Starting in July 1982, renowned Chinese archaeologists Huang Jinglue, Zhang Zhongpei and Wang Kelin led an excavation of ancient ruins in Xinghuacun township in the Shanxi city of Fenyang.

One of the remarkable findings was a waving spindle-shaped bottle with a distinctive feature of Yangshao Culture, an ancient civilization in the middle reaches of the Yellow River between 5,000 and 7,000 years ago.

The bottle features a small mouth and a tip bottom. Researcher identified it was an item some 6,000 years old but were not sure about its function at first.

Some guessed it was a utensil to fetch water. But the speculation was refuted by others as an experiment showed that it was inconvenient to fully fill and carry the bottle because the center of gravity was in the middle.

A comparison with many pictures of archaeological discoveries in China and the rest of the world made researchers believe the utensil was used to brew alcoholic beverages.

They found that in ancient Babylon, Egypt and Greece, tip-bottomed bottles were used in the fermenting process of wines. The utensil was made this way because it was usually buried in soil for better fermentation.

The speculation was also justified from the ancient Chinese pictographic character of *jiu*, or alcoholic beverage. After referring to many ancient books and records, archaeologist Su Bingqi found that the ancient character resembles a



The waving spindle-shaped bottle found at the Xinghuacun archaeological site.

WEN ZHAOYAN / FOR CHINA DAILY

tip-bottomed bottle and thus he believed the utensil discovered in Xinghuacun was used for alcoholic beverage making.

A further discovery was made on the remains in the bottom of the bottle, which were later identified as a kind of cereal sprout wine.

Based on the findings and studies, Chinese archaeologist Bao Qian'an announced it was a discovery pointing to the earliest alcoholic beverage-making site and the earliest alcoholic beverage making utensil found in China.

The bottle is now displayed in the museum owned by Xinghuacun Fenjiu Group.

Xinghuacun is one of the pioneers in making white liquor, or *baijiu*, in China, with a production history dating back to the Tang Dynasty (618-907).

Liu Jiarui contributed to this story.