

ALL CHINA MAKES
IRON AND STEEL

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Foreword

The year 1958 has been an unusual one for the Chinese people. Grain production is doubled. Now comes the news that steel output has also doubled, rising from 5,350,000 to more than 10,700,000 tons. In the world steel output, a normal annual rate of increase for any country is under 10 per cent and certainly no more than 20 per cent. China's is 100 per cent. In face of this, even those who are against us — let alone those who are with us — have to admit that it really is a marvellous achievement.

Many of our foreign friends have asked us how we did it. We have replied that there is no secret involved. Our success has been achieved mainly because the Chinese Communist Party places confidence in the people, relies on them and lets them run the iron and steel industry; and because the masses support the Party, enthusiastically respond to its call, and apply their boundless energy, regardless of difficulties, to running the iron and steel industry. In China, any task, however arduous it may be, can be carried out with greater,

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native-style iron and steel works by the masses is called the "small-native-mass" method.

Our iron and steel industry is, therefore, walking on two legs — the large modern enterprises and the small enterprises run by the masses. Together, these two legs carry us forward in big strides.

The operation of numerous small iron and steel enterprises by the masses has many advantages. It can raise iron and steel production to surprisingly high levels within a very short period without involving large investment. More important is the fact that these small iron and steel enterprises, up and down the country, are run by the people's communes. With iron and steel, the people's communes can rapidly bring about industrialization and agricultural mechanization and so considerably quicken the pace of socialist construction of the country. The rich coal and iron deposits over wide areas offer favourable conditions for the growth of the iron and steel industry. On the foundation of the existing millions of iron and steel smelting furnaces all over the country, we are building hundreds of small iron and steel integrated works. These embody mining, iron smelting, steel making, coke making, steel rolling and mechanical processing — in short, they are complete production systems within themselves. In production technique and equipment, manual labour will gradually give way to semi-mechanization and mechanization. Within a short period, a number of such small integrated works can be built in every province and autonomous region. Once completed, they will, side by side with the large iron and steel integrated works, bring China's iron and steel industry forward in uninterrupted leaps.

An illustrated book like this can in no way give a complete picture of all that has been happening on the iron and steel front. But we hope it will go some way to showing how the big leap was made.

IN the latter part of August 1958, an enlarged meeting of the Political Bureau of the Central Committee of the Chinese Communist Party adopted a resolution to the effect that, to keep pace with the great leap forward in agricultural production and to speed up the growth of industry, steel output for 1958 should double that of 1957, that is, should rise from 5,350,000 to 10,700,000 tons. Spurred by this call of historic significance, the people throughout the country immediately took action to launch a nation-wide campaign to make iron and steel.

September 1958 — Chairman Mao Tse-tung arrives at Wuhan and inspects the No. 1 blast furnace of the Wuhan Iron and Steel Company. The Party and Chairman Mao pay great attention to iron and steel production



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September 1958 — Chairman Mao Tse-tung arrives at Wuhan and inspects the No. 1 blast furnace of the Wuhan Iron and Steel Company. The Party and Chairman Mao pay great attention to iron and steel production



Liu Shao-chi, Vice-Chairman of the Party's Central Committee and Chairman of the Standing Committee of the National People's Congress, visits the Shihchiachuang Iron and Steel Works during an inspection trip around Hopei Province in September 1958

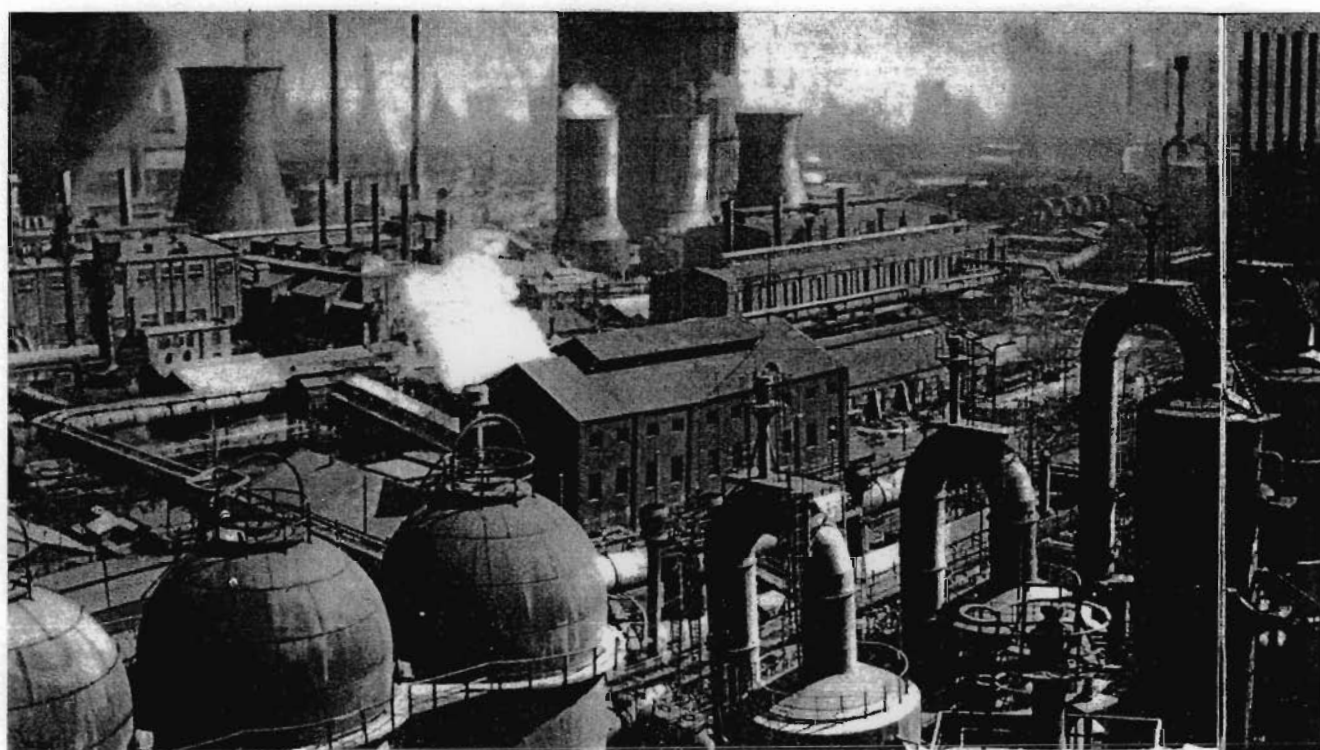




In the same month, Vice-Chairman Chu Teh inspects the native-style furnaces operated by the Hunglu Agricultural Co-op at Hami in the Sinkiang Uighur Autonomous Region

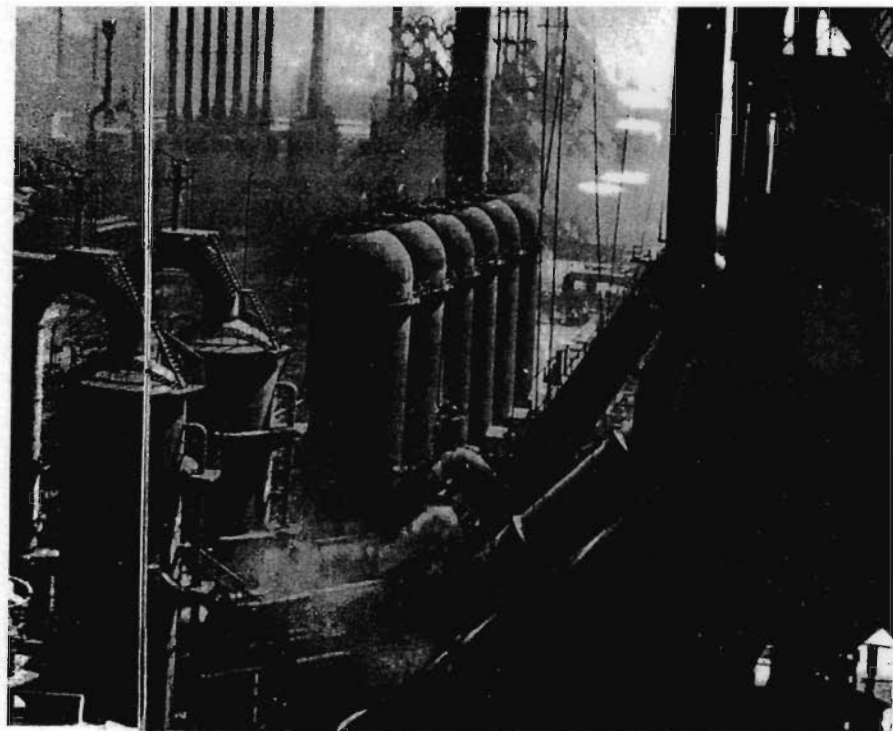
On October 26, 1958, Premier Chou En-lai sees for himself how the people of Peking make iron and steel. He encourages their efforts and joins in the job himself





Large Modern Works Run on the Mass Line

CHINA'S fast-growing iron and steel industry has two sides to it — one, the large modern enterprises, the other the small native-style works. The motive force in both is the mass line. The first comprises a number of large modern iron and steel works, like those in Anshan and Wuhan, whose



equipment is among the world's biggest and most advanced. Many more such integrated works will soon be built. Today, a great emulation drive is taking place in all these large enterprises. The old idea that equipment, technical conventions and experience decide everything is being completely broken down. The masses are energetically airing their views, making rationalization proposals, and, in short, carrying out a revolution in technique. The first result was a 15.2 per cent increase in the total steel output of large modern works in the month of October over September 1958.

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ANSHAN, THE MAIN FORCE IN PRODUCING 10,700,000 TONS OF STEEL

THE Anshan Iron and Steel Company has set itself the target of producing four and a half million tons of steel a year. To this end, they have started a big mass movement to boost the output. Between September 25 and October 15, without additional equipment or personnel, the average daily output of steel went up by 1,460 tons compared with that of the period between September 1 and 20.

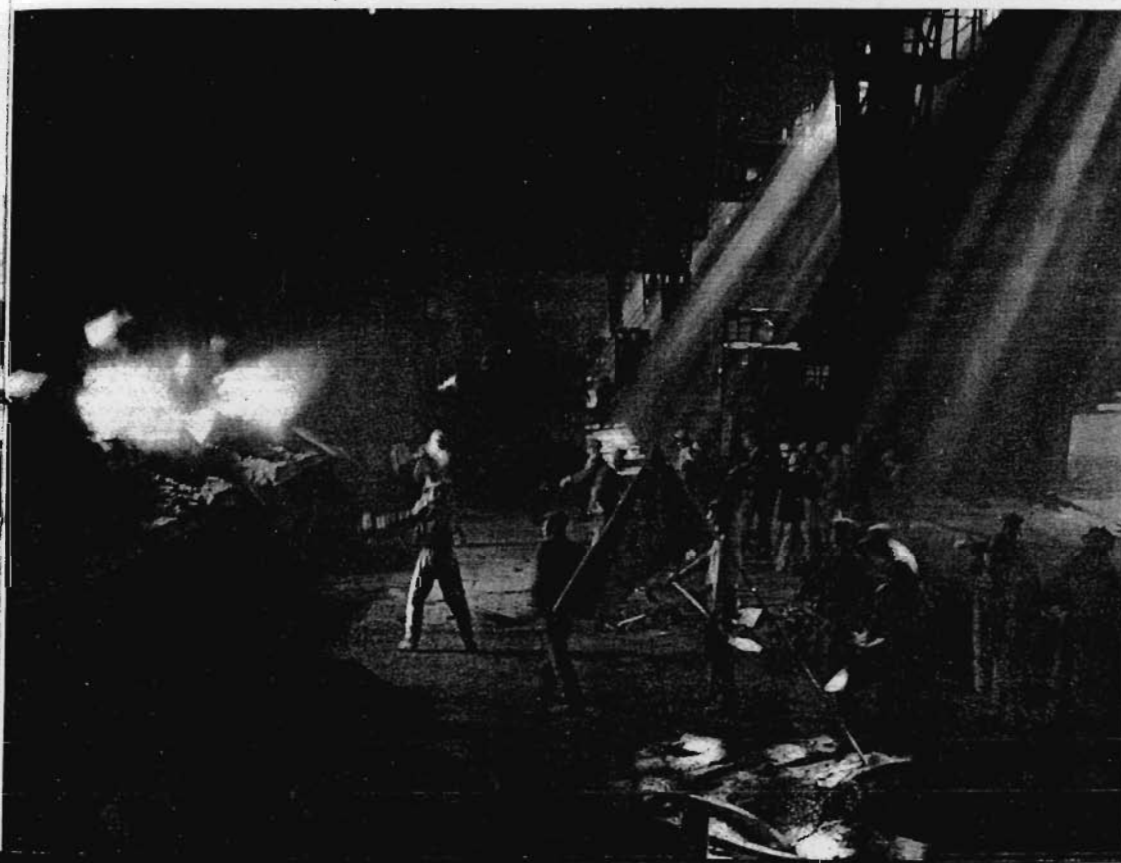
Workers of three open-hearth furnaces in Anshan's First Steel Smelting Plant discuss co-ordination to shorten smelting time



A skilled smelter, Li Shao-kuei (*front*),
working at the furnace with a technician
and a foreman



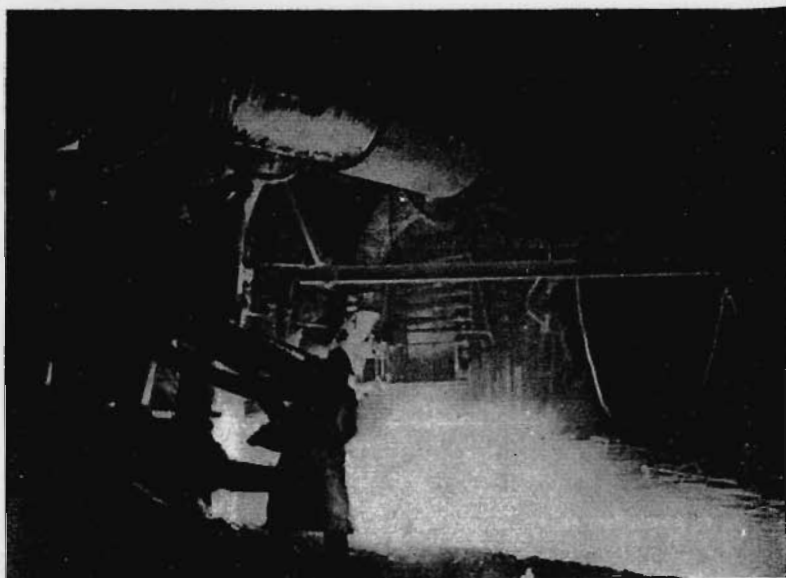
A volunteer shock brigade. They are
ready to tackle any emergency at a mo-
ment's notice



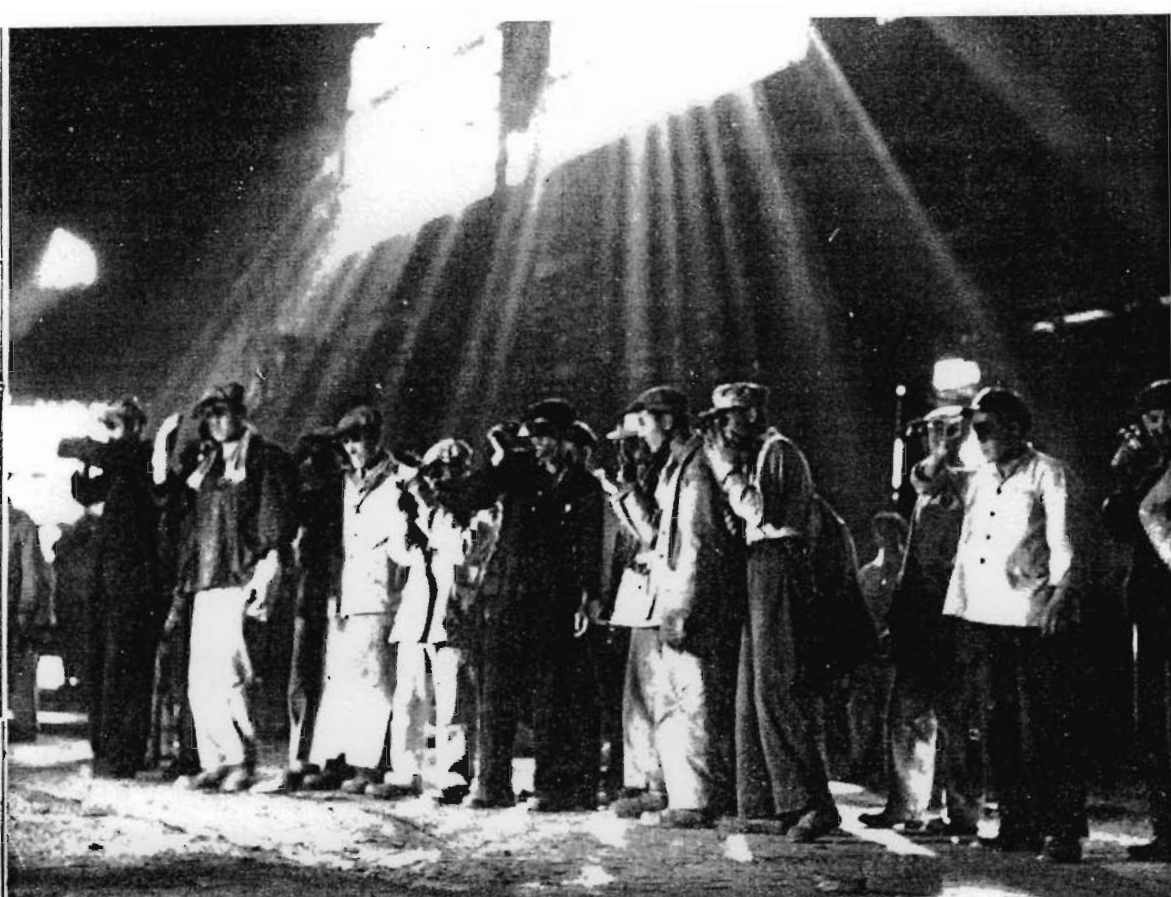


October 31, 1958 . . . molten steel pours out of a big new open-hearth furnace at Anshan. This furnace, with a daily capacity of 1,300-1,500 tons, was designed and built by Chinese technicians and workers. It took them only four months and 20 days from start to finish

November 19, 1958 . . . China's biggest automatic blast furnace, Anshan's No. 10, went into operation. It was built in four months and 26 days—a speed unparalleled in the history of blast furnace building



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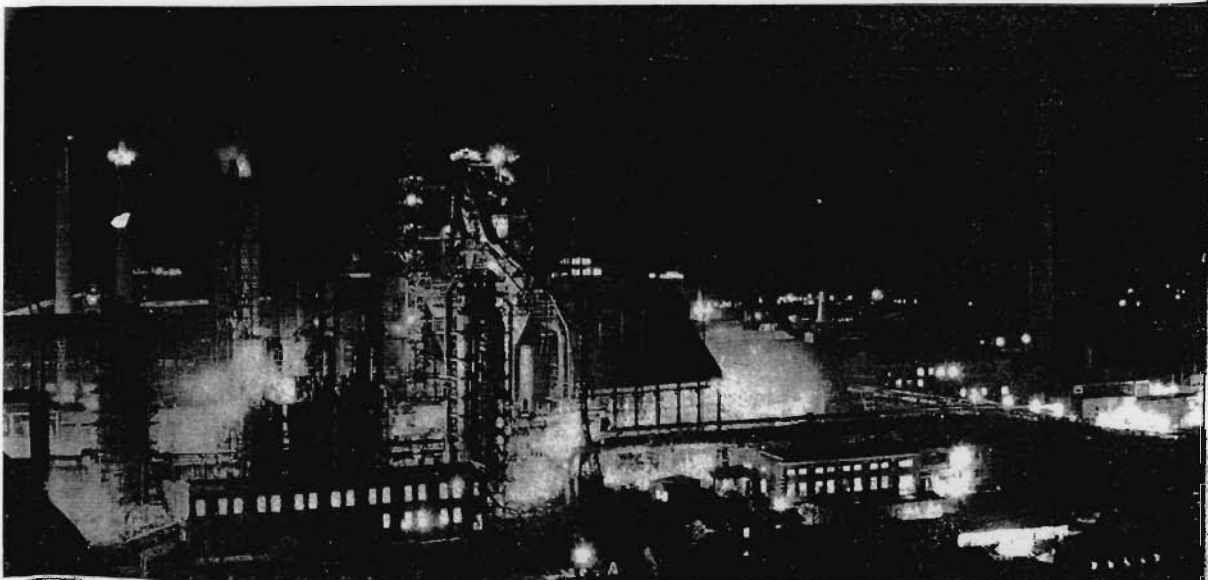


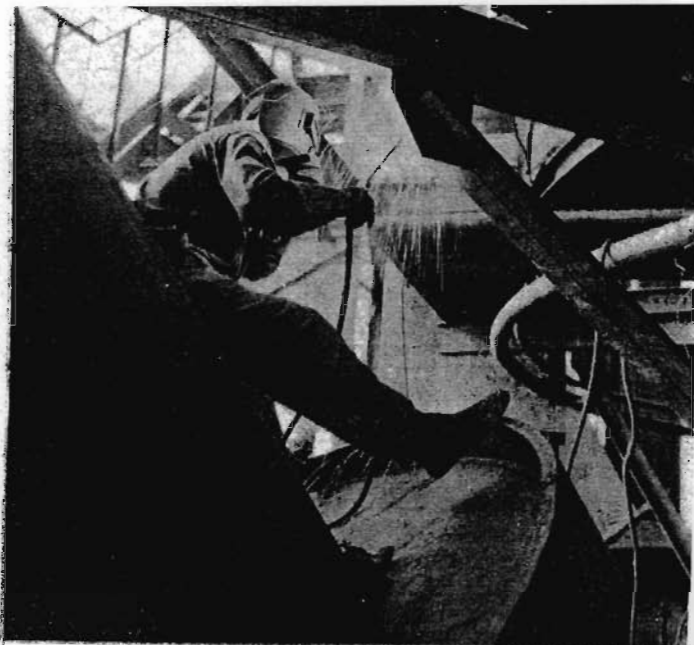
Work goes on day and night without interruption. Party and government leaders visit the furnaces regularly to help solve difficult questions on the spot

WUHAN'S NO. 1 BLAST FURNACE STARTS UP AHEAD OF SCHEDULE

THE No. 1 blast furnace in the Wuhan Iron and Steel Company, with a daily capacity of 2,000-2,500 tons of pig iron, is as good as any in the world. The Soviet Union helped in the designing, and construction began in July 1957 with a two-year programme for completion. During the nation-wide rectification campaign in 1957, the programme was speeded up, and the deadline for producing iron was brought forward to the end of 1958. In February 1958, inspired by the great leap forward in the country's industry and agriculture, the administrative staff and workers set themselves to get it into production on or before October 1 as a gift for National Day. With the support of the people throughout the country, several thousand blast-furnace builders, disregarding bad weather, flung themselves into the job and adopted new ways of building. By the afternoon of September 13, 1958, molten iron was pouring out of the furnace.

Night or day, it's all the same to the builders of Wuhan's No. 1 blast furnace—the work goes on





Welding the steel top
of the furnace

September 13, 3:25 p.m. . . . the
first heat of molten iron pours
from the furnace

oes on

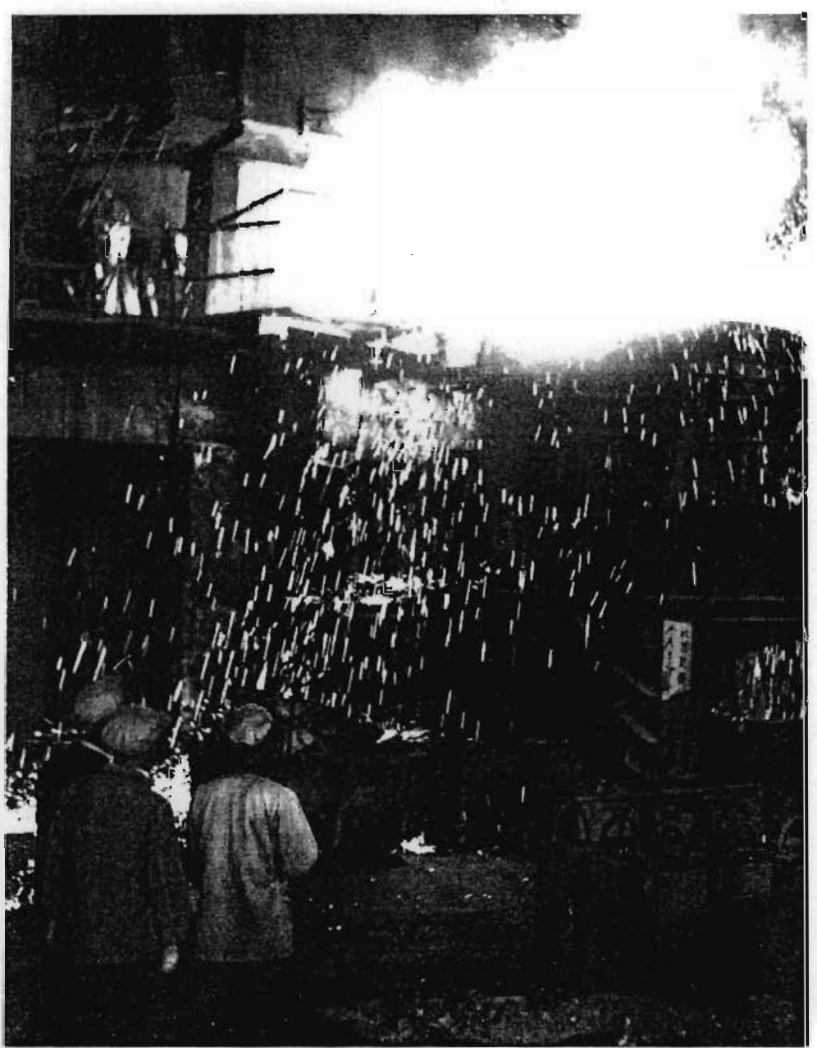


THE MASS CAMPAIGN IS THE MOTIVE FORCE FOR RAISING OUTPUT

"Go to the iron-and-steel front; push up output at a surprising speed!" Nowadays, all those in charge of iron and steel plants have left their desks and taken up their places beside the workers on the job. Here, Kuang Tien-pin, Head of the Chekiang Iron and Steel Works (*first from left*), and Chang Yu-chin, Party Secretary of the iron-smelting workshop (*right forefront*), consult with the workers on how to raise the output of the blast furnace

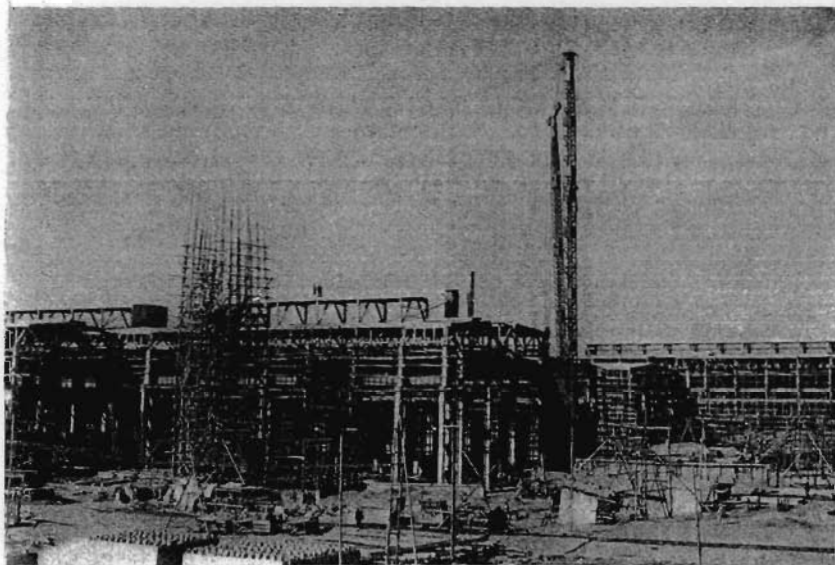


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The open-hearth furnace workshop of the No. 1 Steel Plant in the Shanghai Iron and Steel Company failed to fulfil its production plan for three months in succession. But after launching a mass campaign in October 1958 it increased its output from 40 to 76 tons a heat in a single month, overtaking the No. 3 Plant, whose furnace held the Red Flag for the highest output in the country

BUILDING AND EXPANSION



The skeleton of the steel casting workshop in the Paotow Iron and Steel Company in Inner Mongolia now under construction—one of China's three great iron and steel bases. The builders of large modern iron and steel enterprises throughout the country have a slogan, "Reduce the investment by half and double the speed of construction and capacity of output!"

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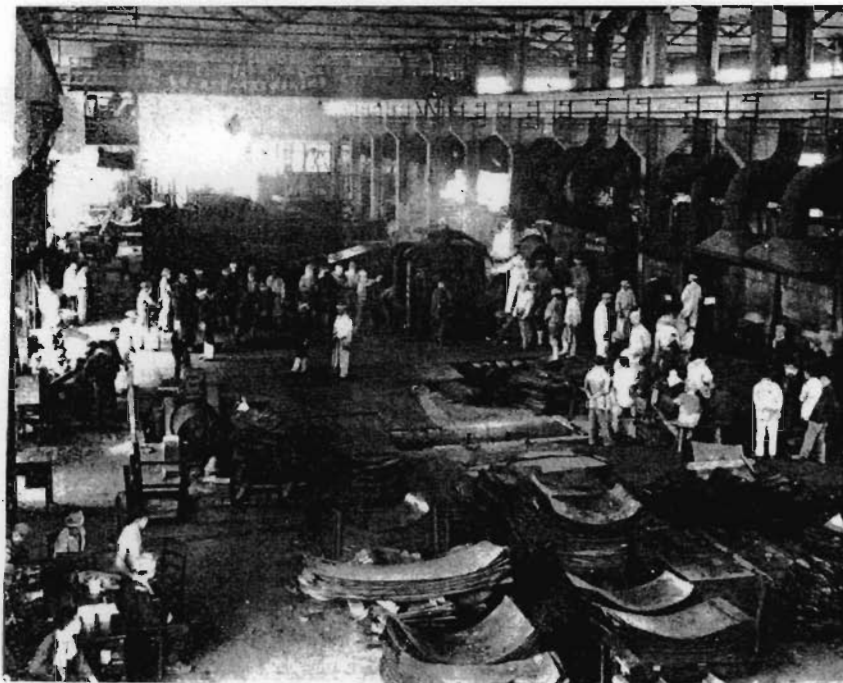
The Shihchingshan Iron and Steel Company in Peking is undergoing expansion and will shortly become a large integrated iron and steel works



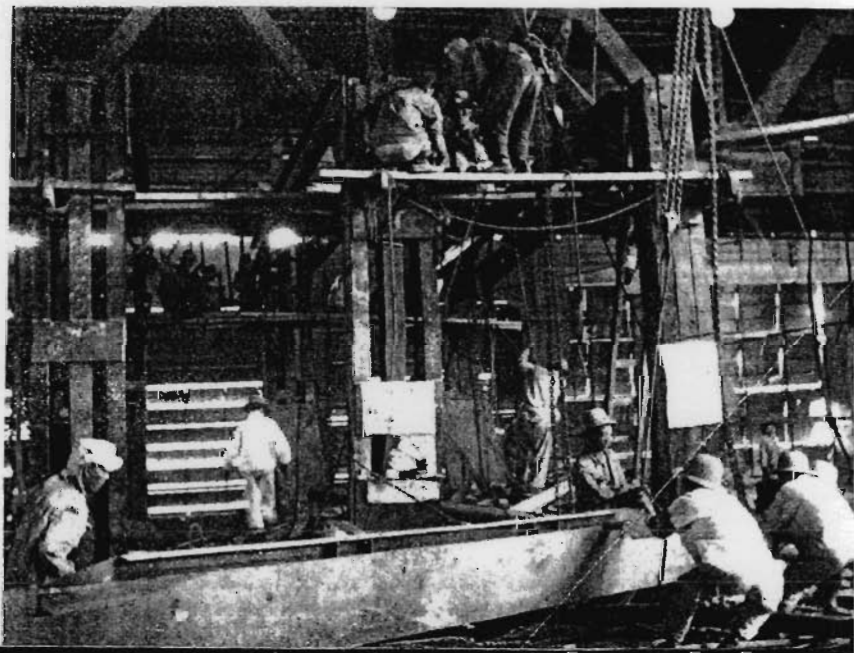
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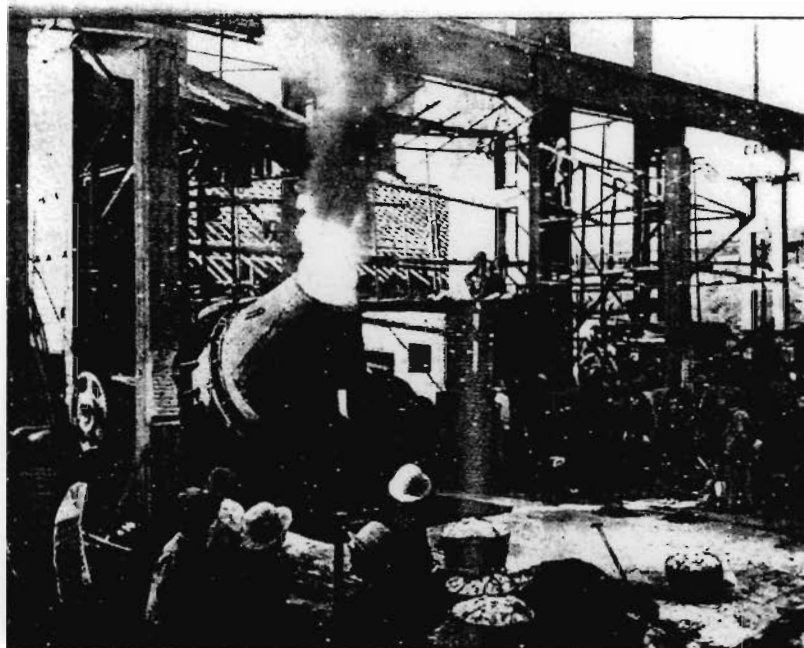
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Construction and
production go side
by side in the Shang-
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Sheet Factory. It
took only eight
months to build



The Chungking Iron
and Steel Company
has achieved a 50
per cent increase in
output by enlarging
its open-hearth fur-
nace — an example
of a way to quickly
boost output with a
minimum of ex-
penditure





THOUSANDS OF CONVERTERS GO INTO ACTION

The Chungking Iron and Steel Company's new converter has a yearly capacity of 600,000 tons of steel

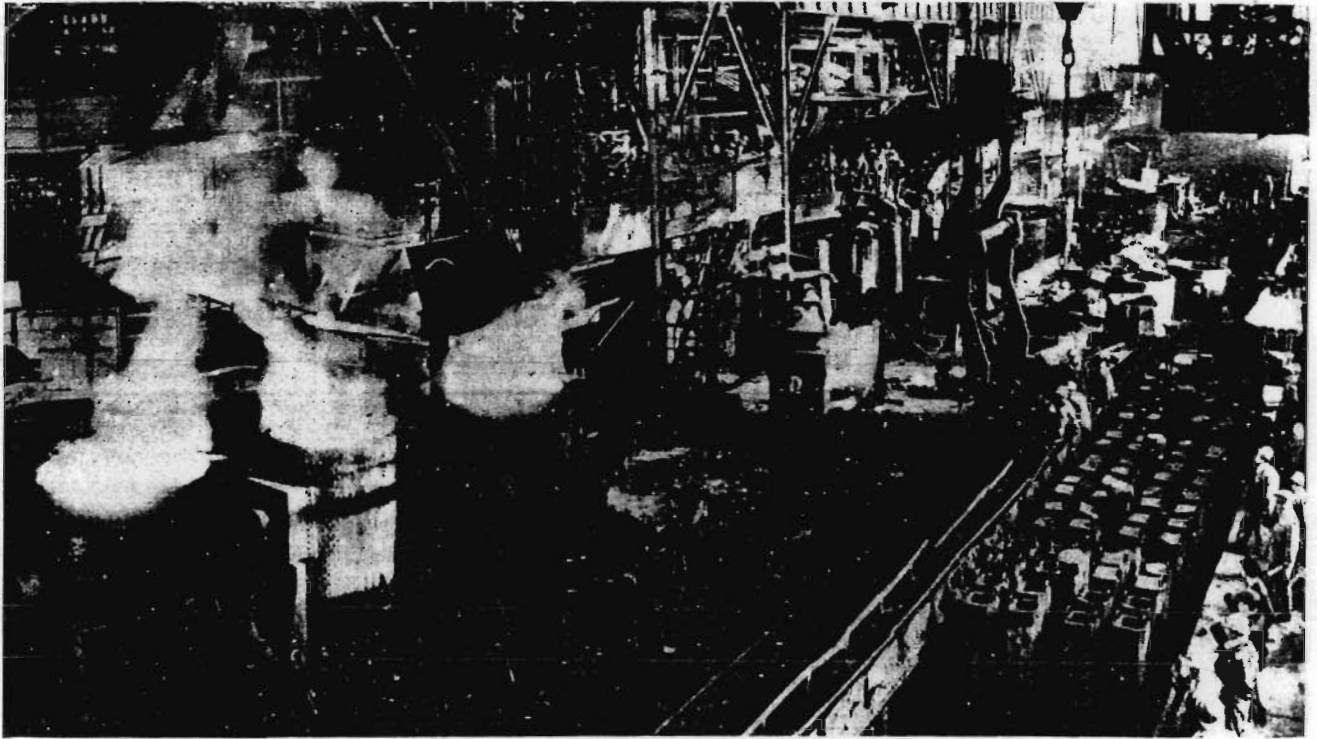
Steel making in a new iron and steel workshop of the First Motor Works in Changchun



Workers of the Tungyung Machine Works in Canton turning out high-grade steel in their new converter

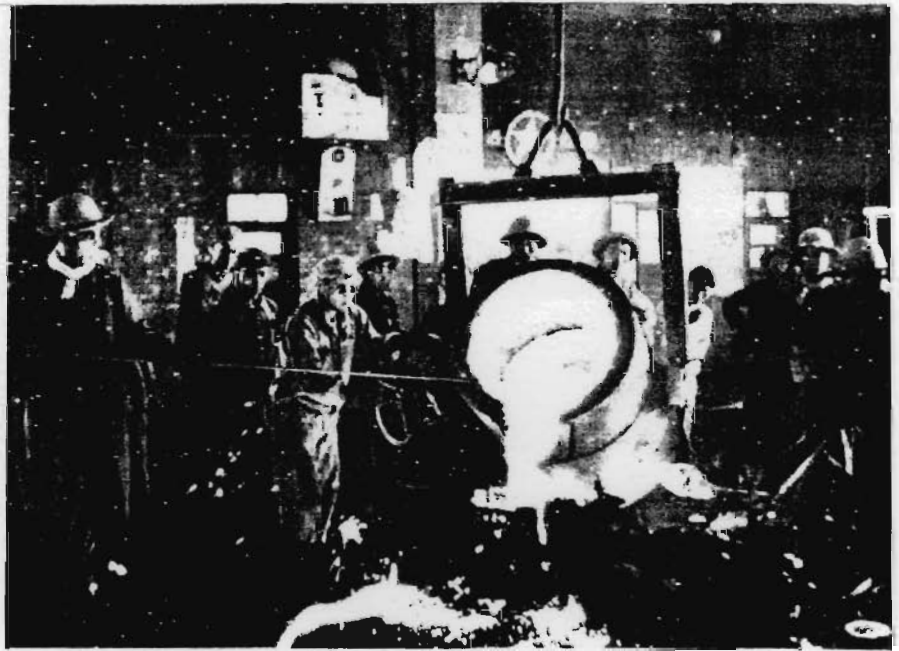


BRINGING TECHNIQUE UP TO THE WORLD'S MOST ADVANCED



In March 1958 the Taiyuan Iron and Steel Company initiated a three-tapping trough method in their open-hearth furnaces—a method which is entirely new to the history of steel-making. It has the twofold advantage of increasing the output capacity of the furnace and saving 15-20 per cent on costs of installing hoisting equipment and building the new workshops. If adopted throughout the country it would raise the national steel output by 10-20 per cent

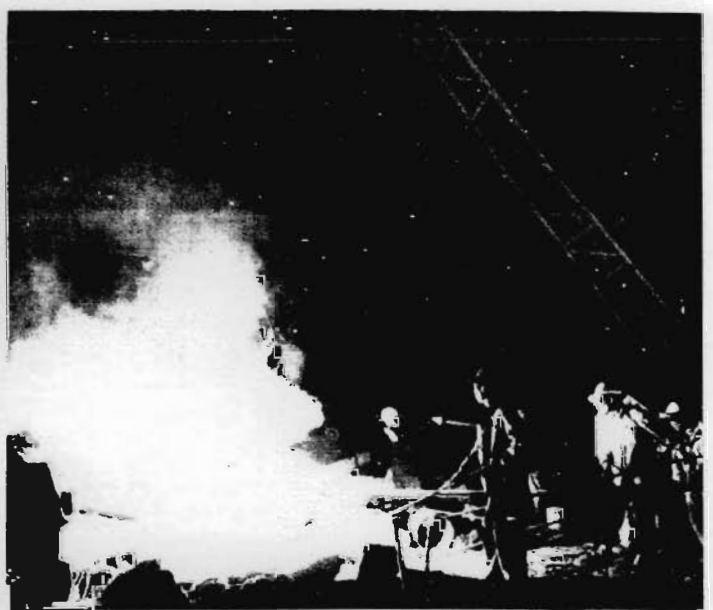
TO reach the goal of doubling steel output, provinces, cities and the key iron and steel enterprises all over the country have built thousands of converters, big and small, most of which have gone into operation.



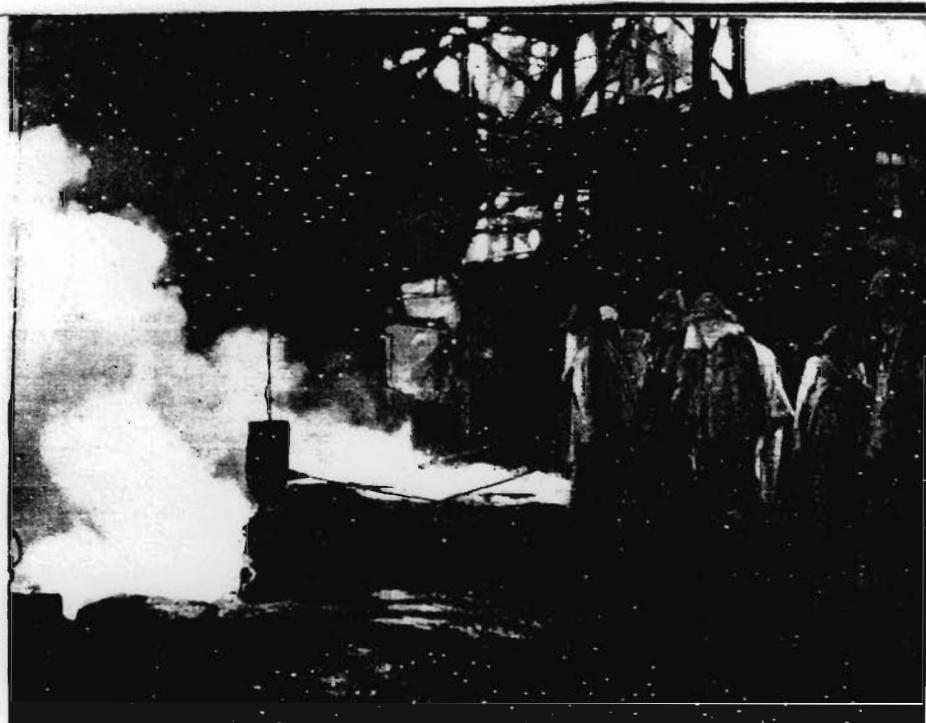
The first converter in Inner Mongolia, built in eight days and nights by workers of different nationalities in the Farm Machinery Works at Huhehot, Inner Mongolia

The Wusih Lathe Factory, Kiangsu, has built a converter with a daily capacity of six tons

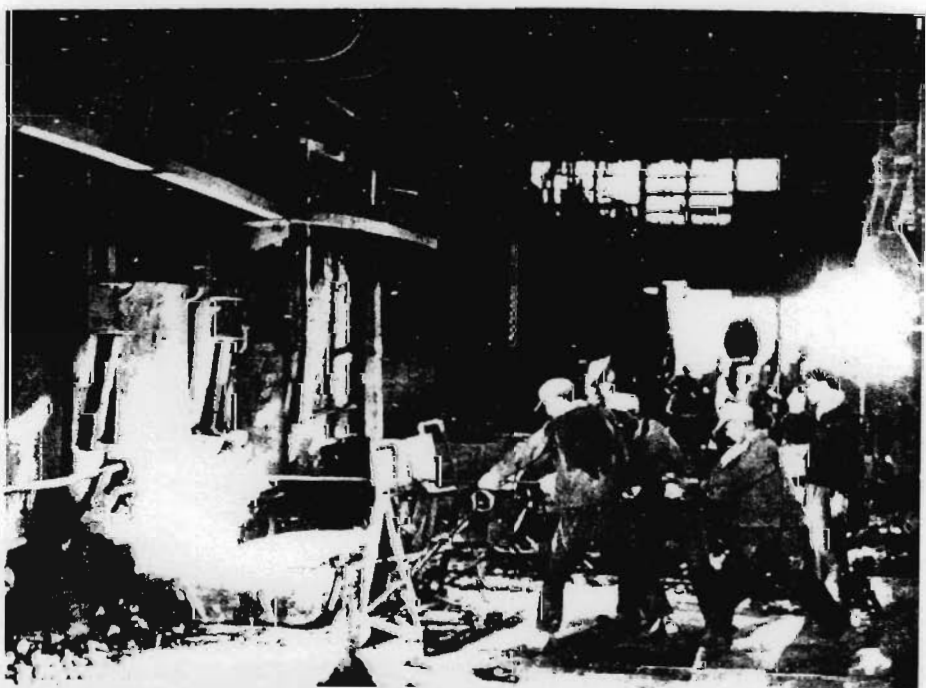
This small steel plant built by the Lanchow Chemical Works in Kansu has an annual capacity of 50,000 tons

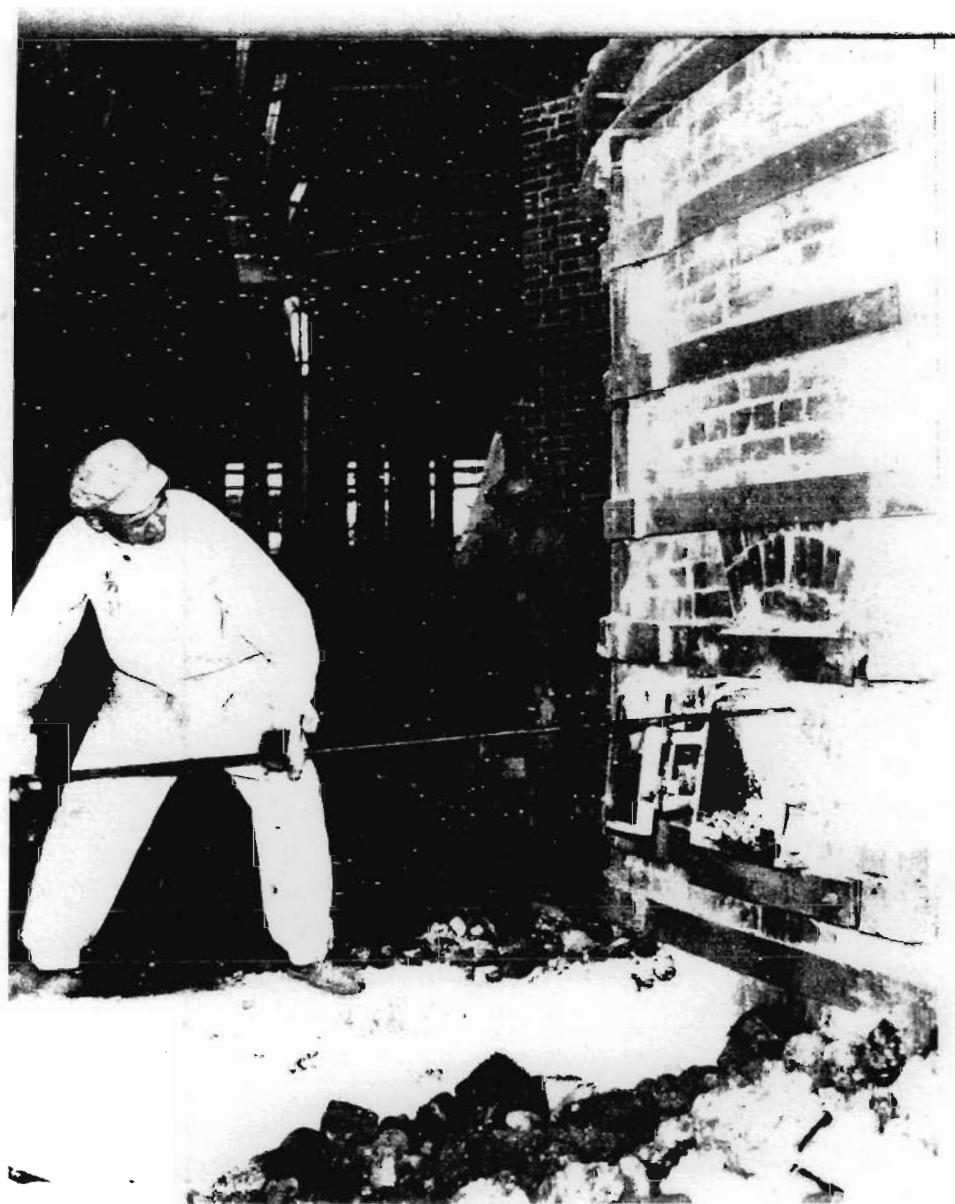


The No. 1 iron-smelting plant of the Penhsi Iron and Steel Company leads the country as well as the world in daily pig iron output with their October record of 2,245 tons per cubic metre of useful blast furnace capacity



The third steel plant of the Shanghai Iron and Steel Company has won first place in the average output per square metre of the hearth area in open-hearth furnaces with its October average of 17.05 tons





The workers of the refractory workshop of the Chungking Iron and Steel Company have reduced the time of burning impervious clay bricks from 60-80 hours to 9-10 hours, and the time of burning silicon bricks from 143 hours to 74 hours 15 minutes. These new national records are comparable to advanced world records



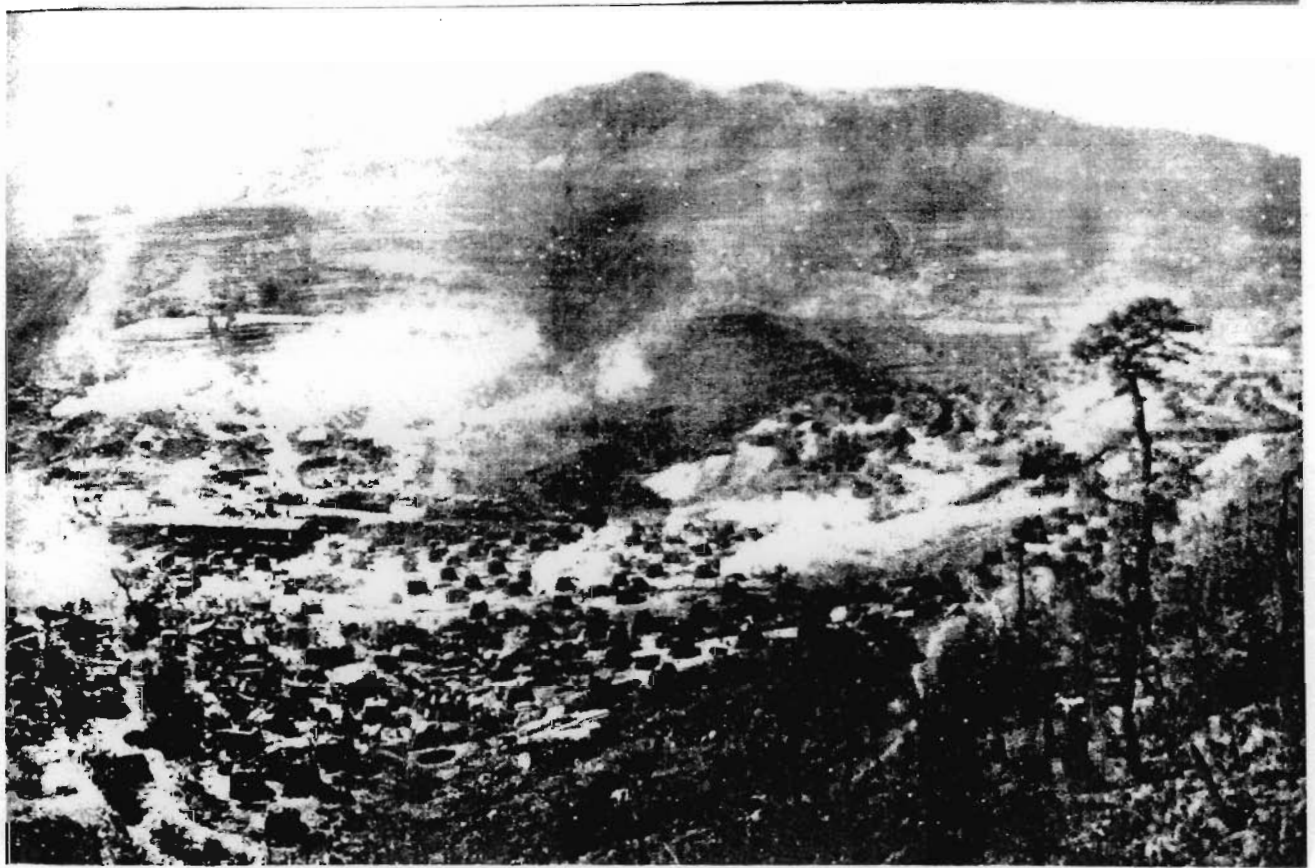
The composite converter-electric furnace steel-smelting method by which various types of alloy steel and high-quality steel are produced at a reduced cost of 10-20 per cent is an important innovation in steel making



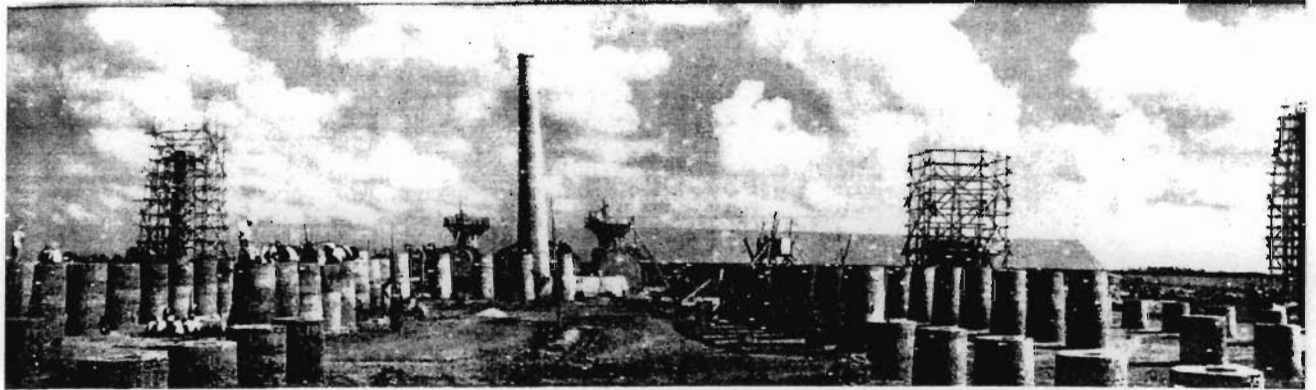


*Small, Native-Style Works
Run by the Masses*

THE small native-style works run by the masses are one of the two wings carrying China's iron and steel industry rapidly ahead. Such small works, using mainly native methods easily accessible to the masses, call for little investment and simple equipment, and take little time in the building. They are therefore well suited to present-



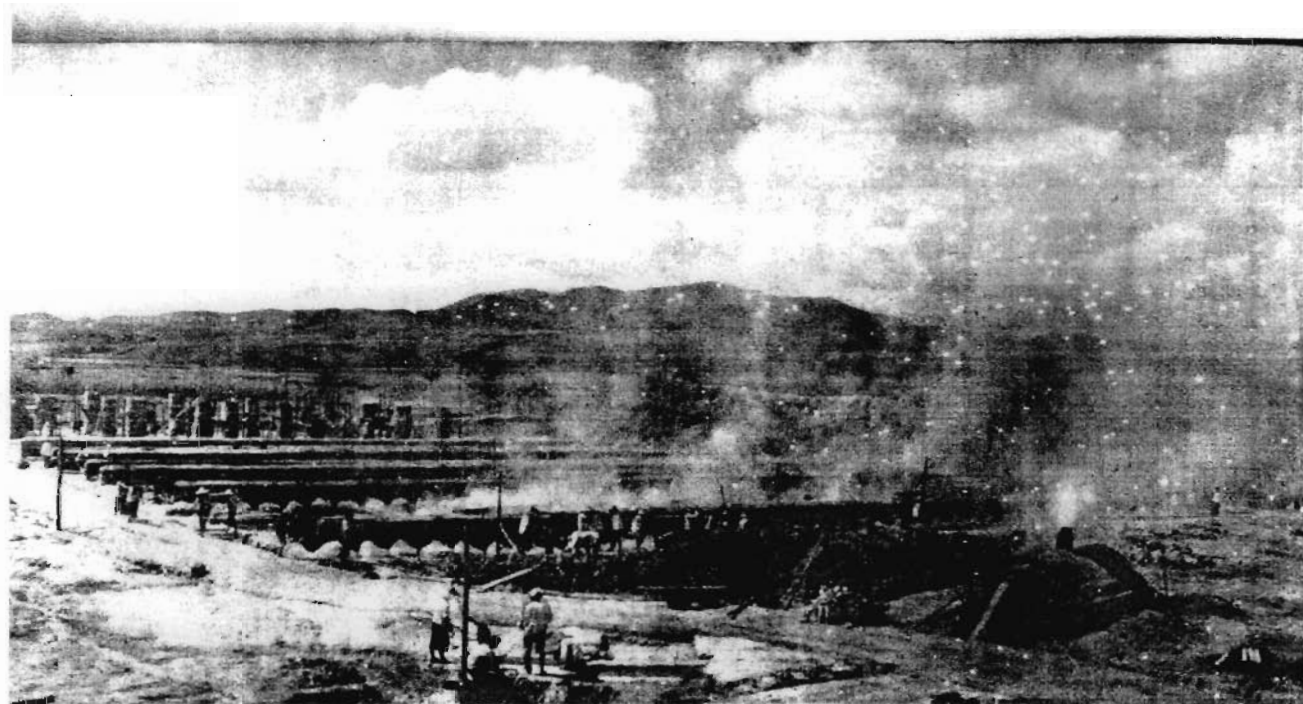
day conditions in China. Recent figures show that by the end of October 1958, millions of small converters and native-style blast and open-hearth furnaces had appeared in villages, towns and cities all over the country. These small works will produce 20 per cent of the 1958 national output of steel and 50 per cent of the pig iron. As the masses are taking part in making iron and steel, the process is no longer regarded as something of a mystery. In making iron and steel by native methods, one miracle follows close on the heels of another; record outputs are achieved only to be broken by others; and a thriving situation has been brought about in the iron and steel industry.



In a single month 3,200 small native-style blast furnaces like these were built along the railway in Laihsi County, Shantung Province

On the strength of the movement for iron and steel, 2,500 members of farming co-operatives in Shantan County, Kansu Province, speedily set up an iron works with 800 brick furnaces



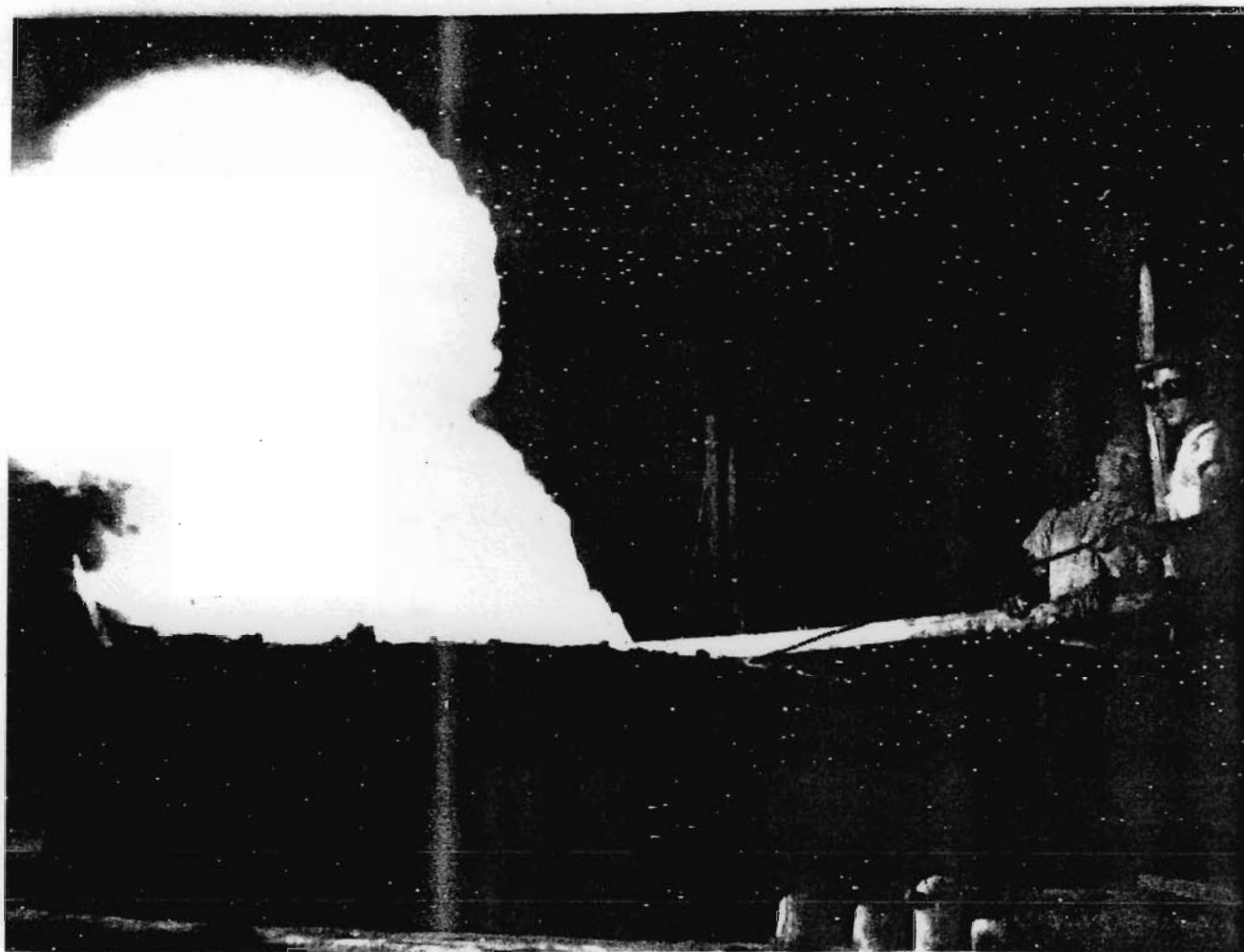


Native-style blast furnaces dot the Lushan
People's Commune in Honan Province

STEEL MAKING IS NO MYSTERY— EVERYBODY CAN DO IT

Peasants of Chinchai County, an old revolutionary base in Anhwei Province, smelting iron. The daily output of this native-style furnace, which started up barely a month ago, has risen from one to seven tons





Government workers of Urumchi in the Sinkiang Uighur Autonomous Region in the battle for iron and steel. These two are working through the night



An artilleryman of the
People's Liberation Army
does his stint



A teacher and students
of the Chungking 29th
Middle School inspect
their first steel ingot



The housewives of Hsinyang City, Honan, have taken iron smelting in their stride



Young Pioneers of Harbin cast a mould for a farm tool in their own iron works. Their teachers helped them set up the works



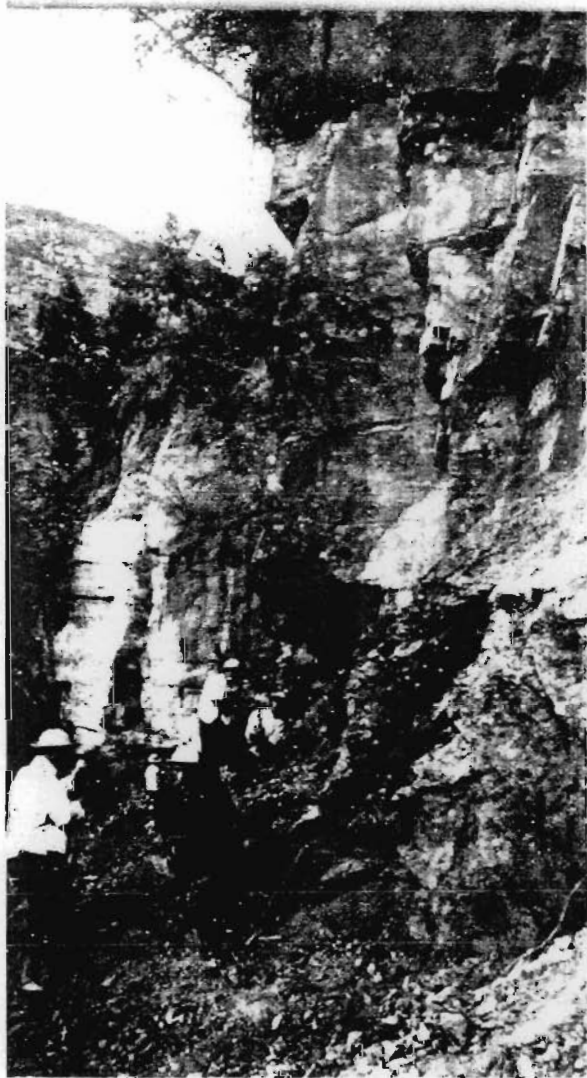
Iron smelting in full blast at an iron and steel base
at the foot of the Funiu Mountains, Hsinan County

IRON AND STEEL BOOM IN HONAN

ON October 30, 1958, Honan Province surprised the nation with a record output of 1,333,808 tons of pig iron and 102,973 tons of steel in a single day. In the old days, this province had no steel industry to speak of and a small output of at most 1,000 tons of pig iron a year. The recent achievement was the outcome of a movement for iron and steel in which small native-style works were set up and run by the masses, and in which everyone, including all the members of the Communist Party, took an active part, with the secretaries of the Party's provincial committee assuming personal leadership.



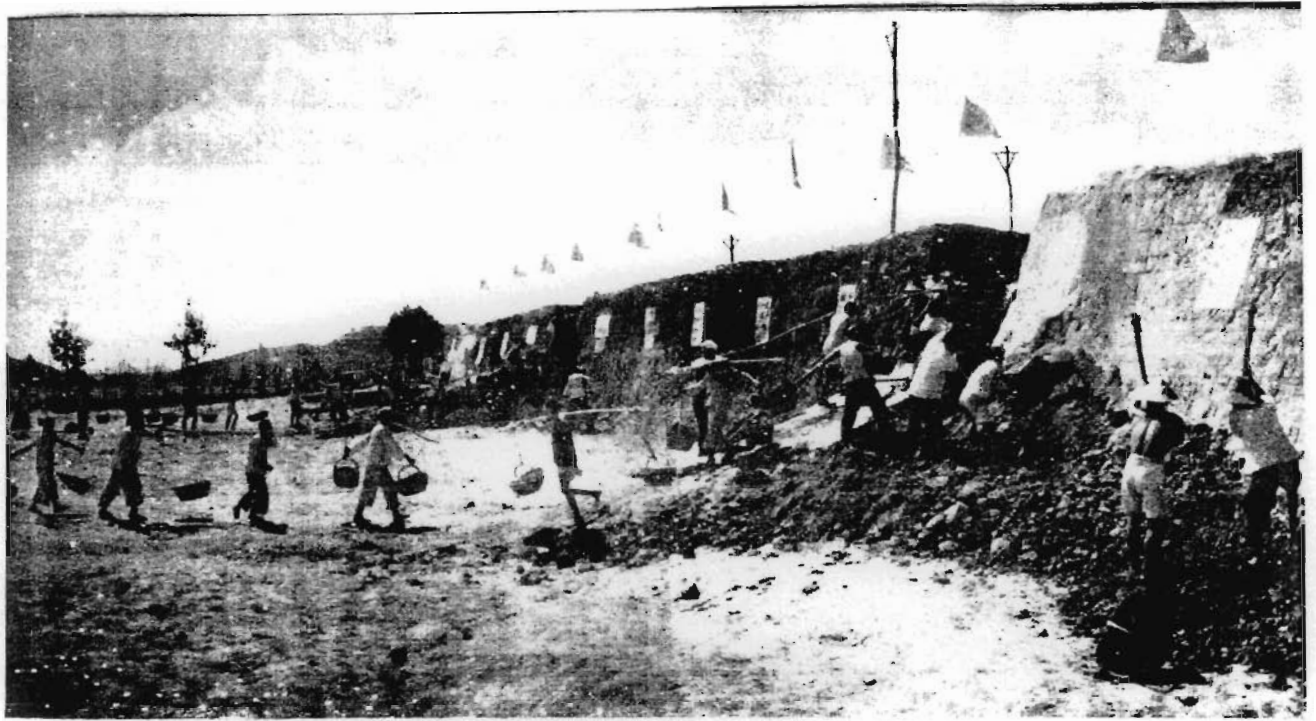
Part of the big army of peasant volunteers who took part in the battle for iron and steel immediately after the wheat-sowing



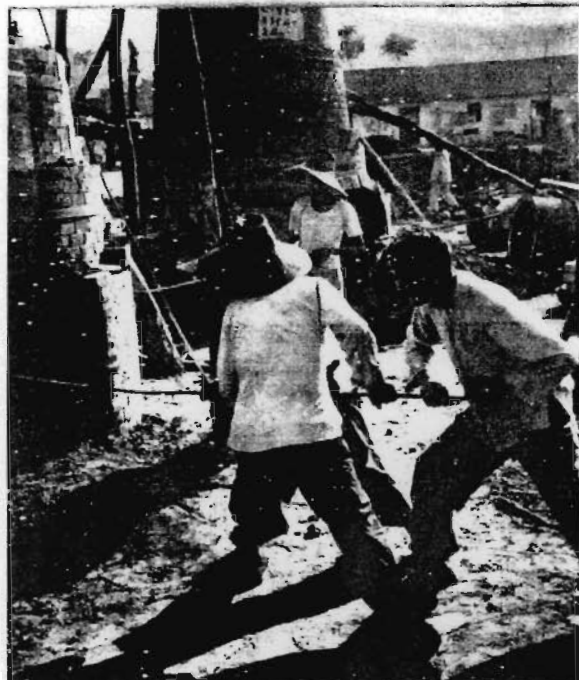
Digging iron ore in Lushan County, Honan Province. Honan is well endowed with iron ore, mostly close to the surface and with an iron content of 40-60 per cent

Women of Yuh sien County send baskets of ore to their blast furnaces by means of steel wire. It's just one of many labour-saving devices thought up by the people on the job





People of Yuhsien County digging earth for the building of their furnaces. They built a large number of native-style furnaces



This small blast furnace, built after the style of Yangcheng County, Shansi Province, boasts an output of a ton of iron a day



Small blast furnaces like this with a daily output of a ton go a long way towards pushing up the country's output of iron



Small cast-iron rails made by the people of Yuhsien County

People of Hsinyeh County come to learn from Yuhsien County's rich experience in iron smelting



ONE DAY'S ACHIEVEMENT IN LUCHAI

LUCHAI County in the Kwangsi Chuang Autonomous Region came into the limelight when it turned out 207,000 tons of pig iron on October 18. The output of pig iron in Kwangsi as a whole only amounted to 17,000 tons during the First Five-Year Plan period. In fact, Luchai has overfulfilled in a single day the entire region's 1958 target of 200,000 tons. This staggering achievement speaks volumes for the boundless might of the Chinese people in conquering nature under the leadership of the Communist Party.

Iron ore and iron and steel bases are everywhere in Luchai County





The battle for output in one of Luchai's iron and steel bases

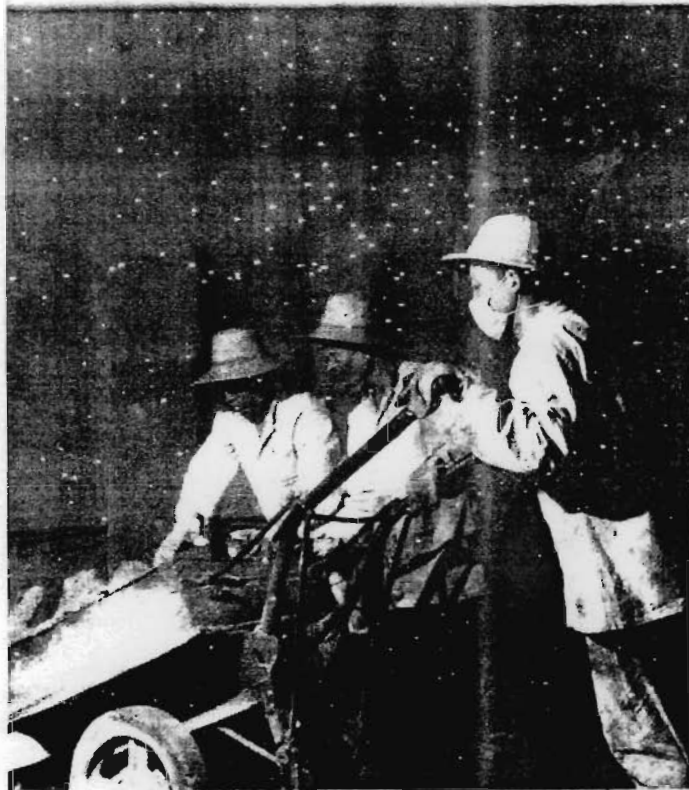
(Lower left)

It was once a lime kiln, now it's an iron-smelting furnace. Just one of the many improvisations thought up by the people on the job

(Lower right)

This pig iron produced in Luchai will be sent to the Shanghai steel mills by road

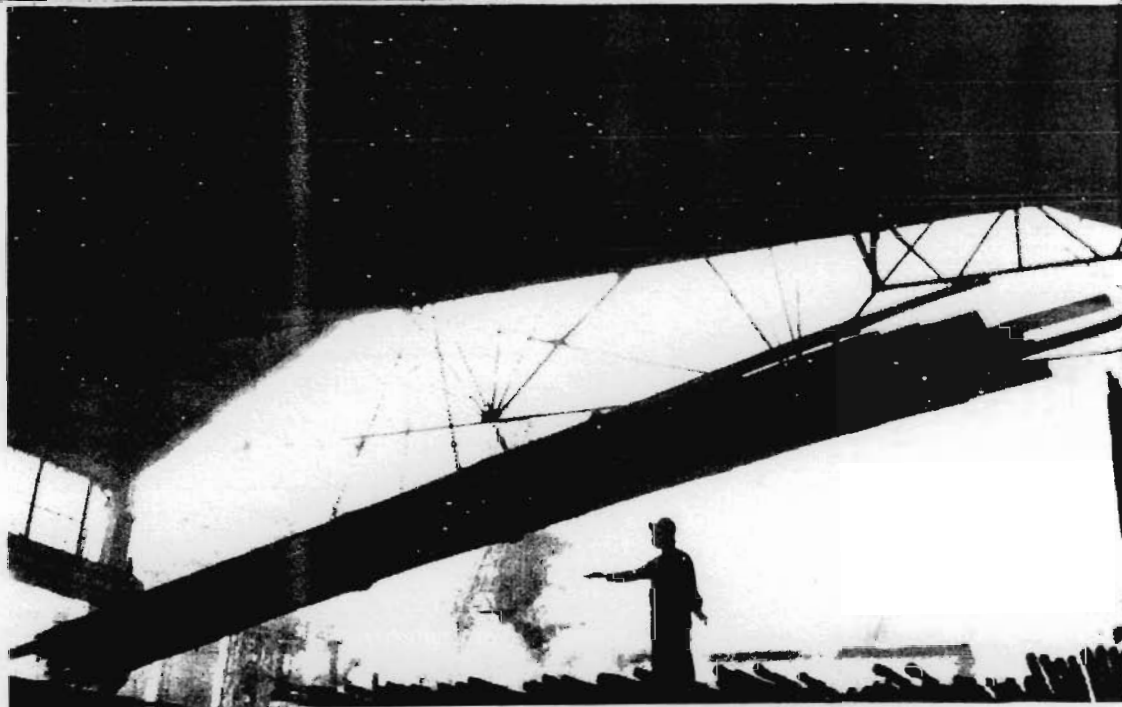




HOME-MADE IRON AND STEEL HAVE MANY USES

The Hsinhsing Steel Plant in Tientsin has cracked the technical problem involved in producing good-quality steel out of native-made iron bearing a relatively high sulphur and phosphorus content. This batch of iron is on its way to the cupola

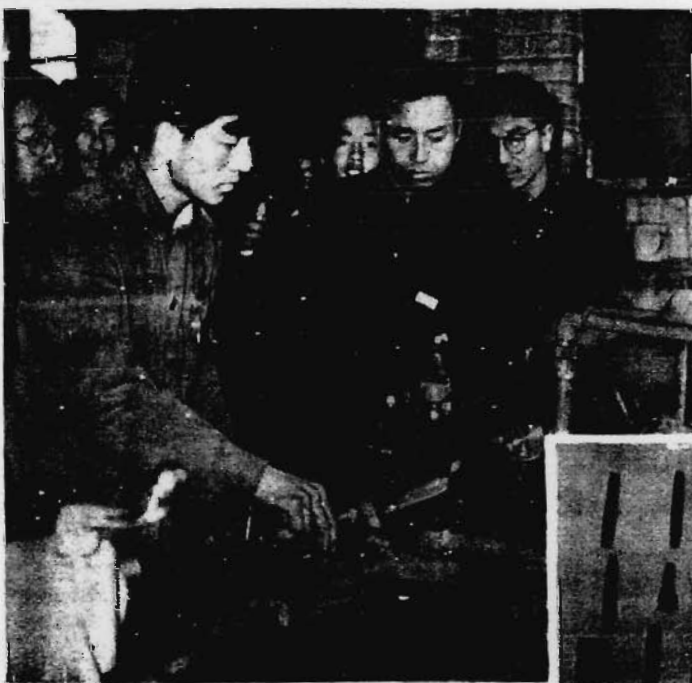
Rolled steel products and plates made by the Chungking Iron and Steel Company, using iron produced in Szechuan's native-style blast furnaces, have proved fully up to government standards





Sharp steel parts for farm tools made with steel tempered from native iron produced by the Hsienchachiao Iron Works in Shaotung County, Hunan Province

Many Tientsin factories have succeeded in using native steel to produce complete sets of casting tools, universal cutters attached to lathes, steel files, gears and other spare parts and tools. Here, lathe-turners of the Tientsin Scientific Instruments Factory are making tools of native steel. *Inset:* Some of the tools and spare parts



FROM POPULARIZATION TO ELEVATION

THE implementation of the policy of setting up small native-style iron and steel works run by the masses is now advancing to a new stage — from popularization to elevation — in the country as a whole. This means that a legion of iron and steel makers will specialize in iron and steel production, and that efforts will be made to improve tools and equipment, raise the quality of products and usher in a technical revolution in mining, ore-crushing and transport so that handicraft operation will gradually make way for partial or wholesale mechanization. It also means that steps will be taken to single out successful types of furnaces for popularization and to build up a complete system of mining, iron smelting, steel making and steel rolling in areas blessed with good-quality iron ores and coal, so as to gradually turn the large groups of native-style furnaces into small integrated iron and steel bases.

This small converter made by an iron and steel works in Kuhsien County, Shansi Province, has an annual output of 1,000 tons of steel. It costs only 1,000 yuan and has a simple tipping device which can be easily controlled by hand

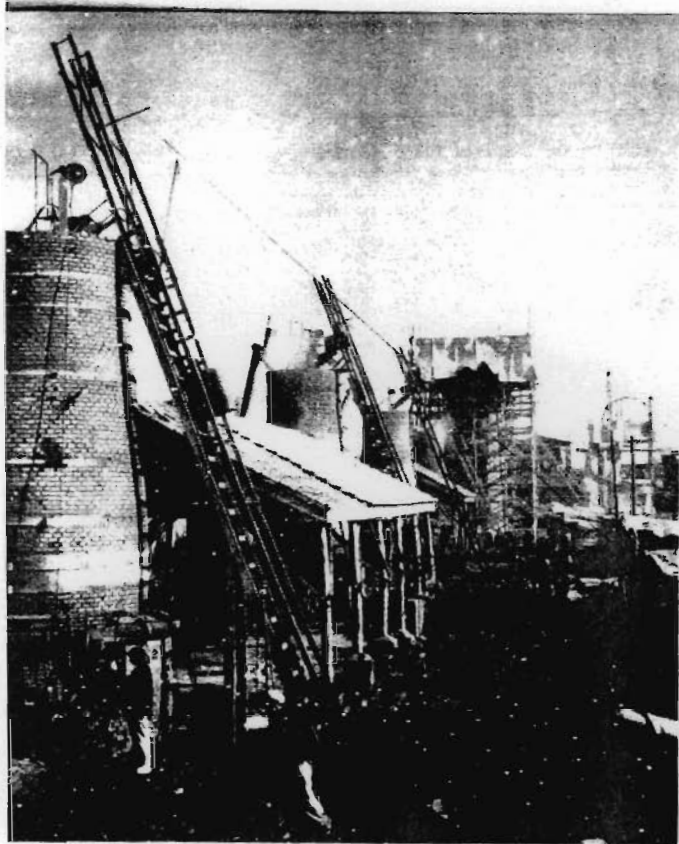


The native-style blast furnaces devised by Yangcheng County, Shansi Province, use anthracite and cold blast, have simple structure and cost little to build. Their daily output is 1.5 tons of grey cast iron used in making casings for ball-bearings, engine cylinders and hydraulic presses



Fu Fu-chu (right), an engineer of a designing institute in ferrous metals metallurgy, learns a lot from this local expert of Yangcheng. In the course of learning, he applied a scientific method to improve the devices for the feeding of raw materials and coal in furnaces

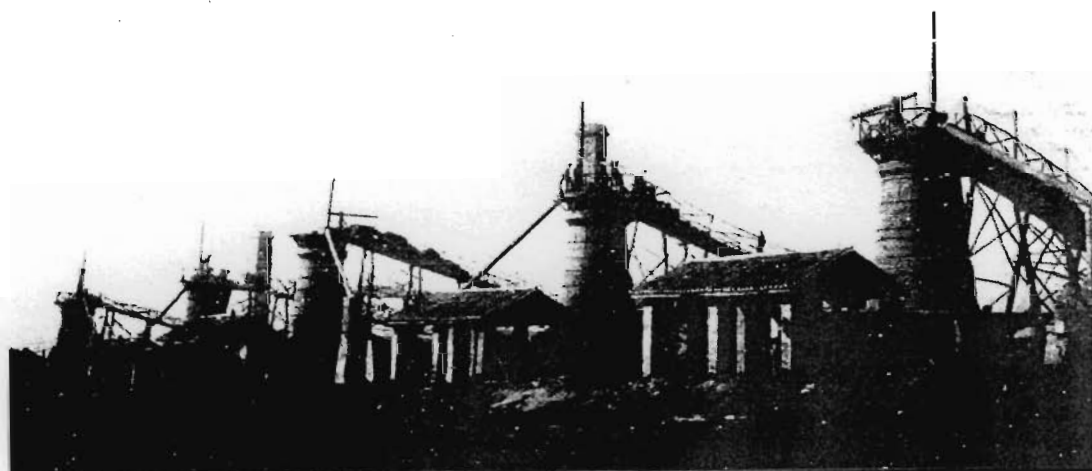




This small integrated enterprise of iron and steel metallurgy and machine-building, the No. 1 Iron and Steel Works in Chohsien County, Hopei Province, has grown out of the multitude of small native-style furnaces built by the masses. Here we see a blast furnace equipped with an automatic feeder devised by the workers

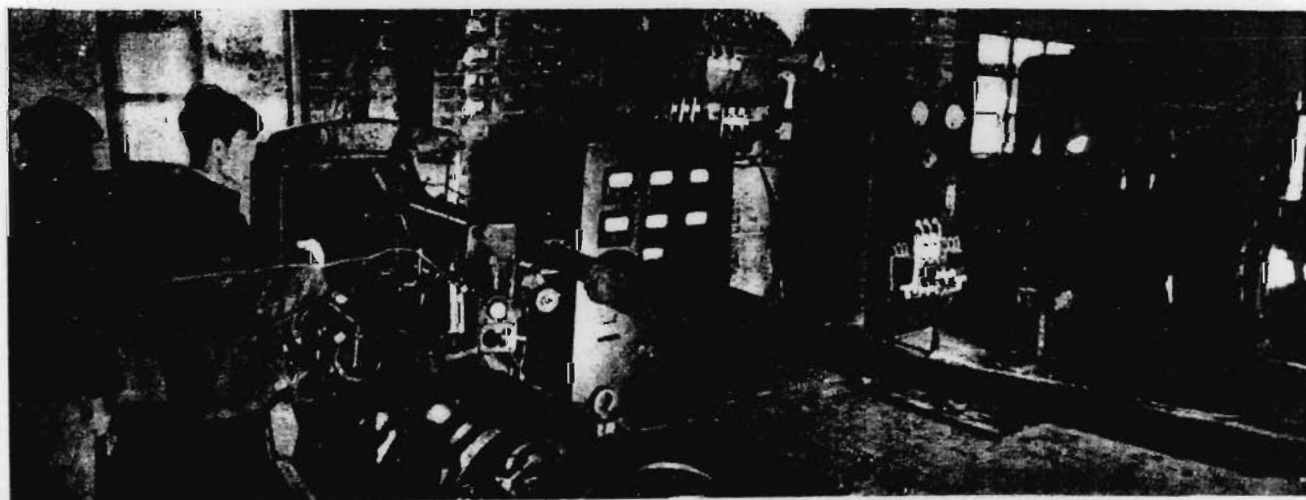
A technical innovation movement for making machinery and equipment accompanied the building of Chohsien's No. 1 Iron and Steel Works and continued after it went into operation. This crushing machine made in the works can do the work of 200 workers





Small modern blast furnaces built by Anning District in Kunming, Yunnan Province, on the basis of experience gained from running its small native-style furnaces

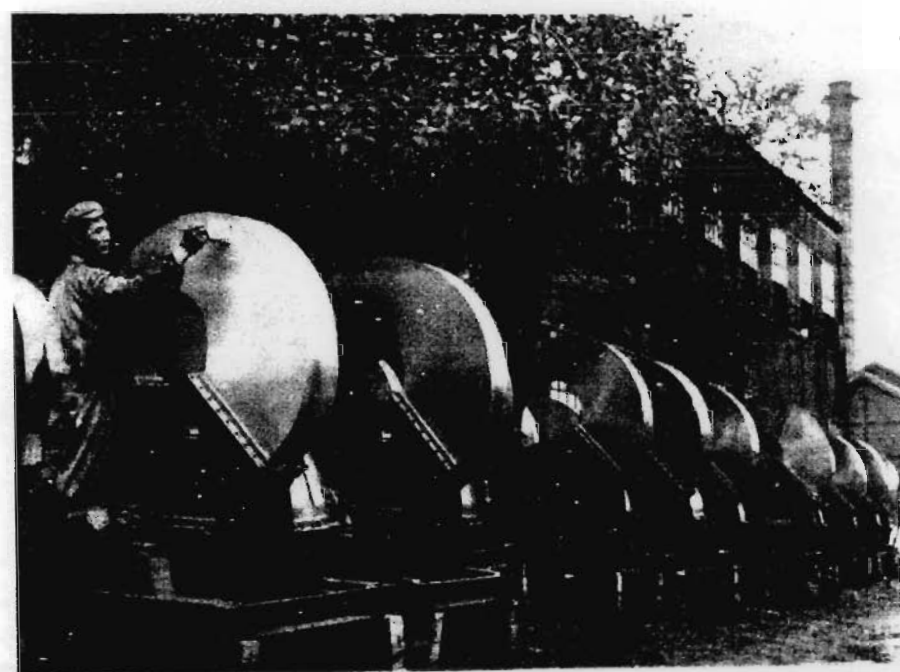
New power plant of the Poshan iron and steel base in Poai County, Honan Province





Workers of the forestry machinery plant in Harbin go all out to make a big batch of converters

With the help of other factories the Shenyang Blower Factory turned out 2,000 small blowers 38 days ahead of schedule



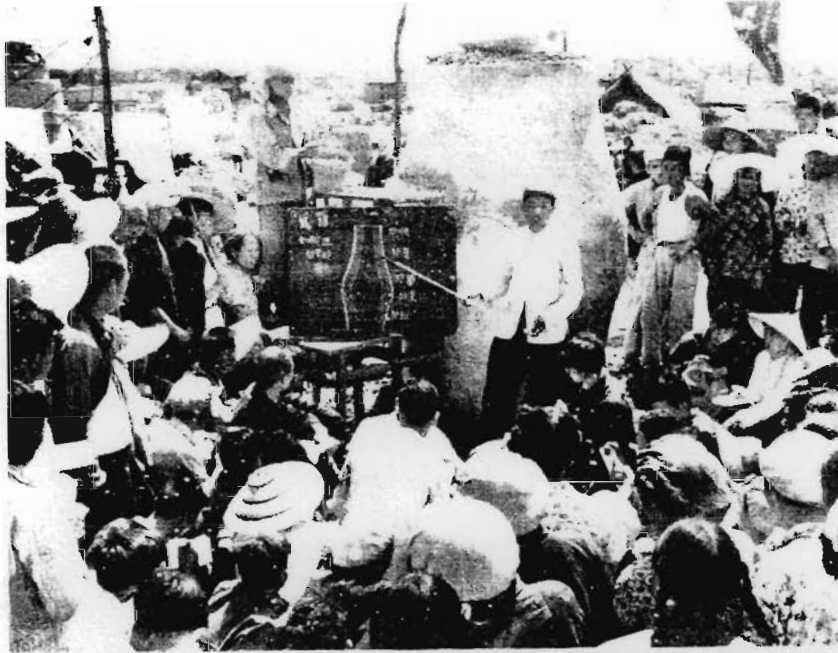
On the railways, iron, steel and metallurgical equipment get priority over everything



An army of volunteers from among Tientsin residents come out every day to transport scrap iron and steel



Man Is Also Tempered



Students of the Hungchi Institute of Iron and Steel Technology in Hsinyang, Honan, take their first "on-the-spot" lesson on the structure of native-style furnaces



Han Chao-hua, an ex-fitter, has acquainted himself with the elementary technique of steel making after three months' hard study. Here we see him giving a talk to a group of prospective steel workers

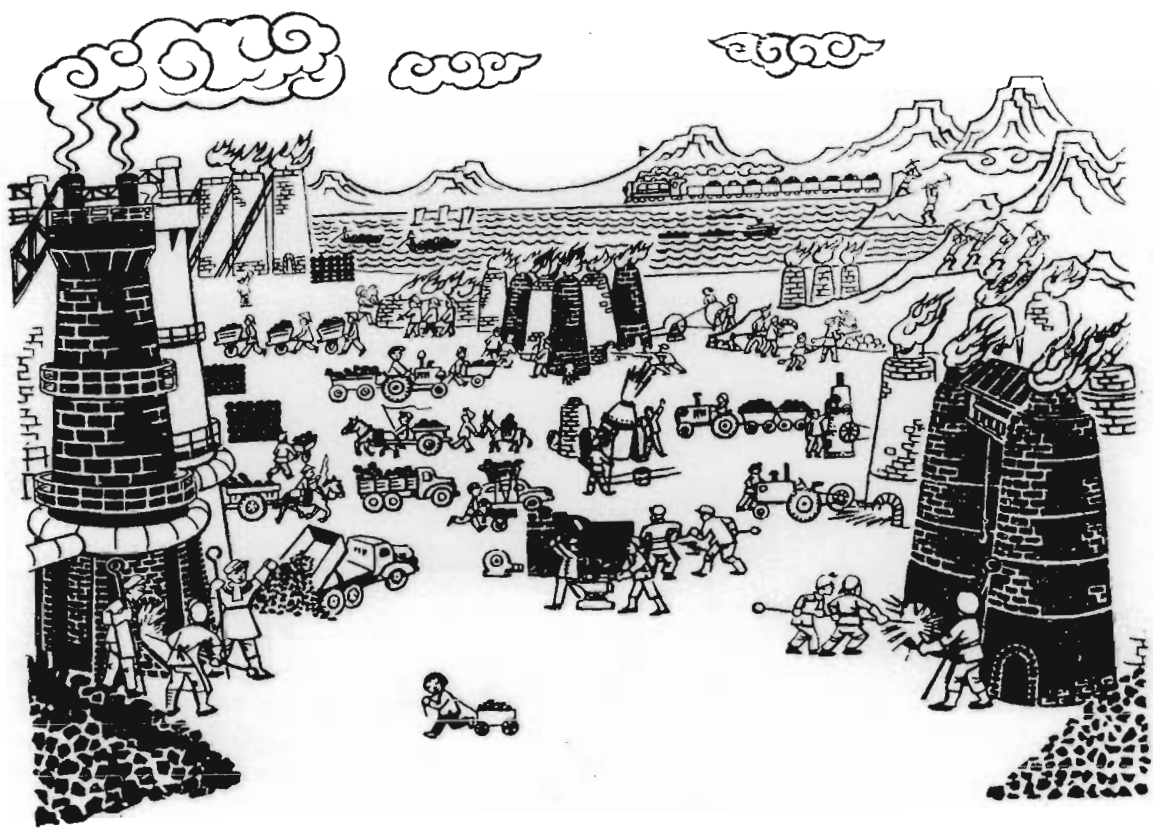
Third-year students of the Peking Institute of Iron and Steel Technology making steel in the small integrated metallurgical works of their own designing. It is all part of the policy of combining education with productive labour



An engineer of the Shanghai No. 3 Iron and Steel Works gives a lesson on designing steel-making equipment to a group of future technicians from Inner Mongolia, Anhwei and Fukien. The plant has done a great deal in training technicians for other factories







Conclusion

The building up of the two sides of the iron and steel industry during the last few months has not only made it possible to fulfil the year's stepped-up plan of 10.7 million tons of steel 12 days ahead of schedule, but laid the cornerstone for still greater successes in 1959. The achievements already made hold great economic, and especially political, significance. The movement has shown that to involve the whole population in running industry — with steel making as the pivot — is the way to the high-speed industrialization of China, and that industrialization must be everybody's affair. Moreover, it has tempered the broad mass of people, emancipated their minds and thoroughly broken down the "mystery" attached to industry. It is a further victory of the Party's mass line on the industrial front following the decisive victory in the field of agriculture. Today, the entire Chinese people, fortified with greater confidence, are building their motherland with boundless enthusiasm. Experience tells them that if they advance along the way pointed out by the Party they will certainly achieve all they set out to do.

