

OTS: 60-11,454

JPRS: 2456

30 March 1960

SEVEN YEARS OF THE PEKING INSTITUTE OF FERROUS METALLURGY

- USSR -

by Kao Yun-sheng

19981211 085

**Reproduced From  
Best Available Copy**

DTIC QUALITY INSPECTED

Distributed by:

OFFICE OF TECHNICAL SERVICES  
U. S. DEPARTMENT OF COMMERCE  
WASHINGTON 25, D. C.

~~Price: \$0.50~~

---

U. S. JOINT PUBLICATIONS RESEARCH SERVICE  
205 EAST 42nd STREET, SUITE 300  
NEW YORK 17, N. Y.

JPRS: 2456

CSO 3659-N

## SEVEN YEARS OF THE PEKING INSTITUTE OF FERROUS METALLURGY

[This is a translation of an article written by Kao Yun-sheng in Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya (News of Higher Educational Institutions, Ferrous Metallurgy), No 9, Stalinsk, 1959, pages 189-194.]

Located in a northwestern suburb of Peking is the first higher educational institution in China training cadres of metallurgists. It is the Peking Institute of Ferrous Metallurgy, which is now seven years old.

In old China there were a few universities with mining-metallurgical faculties; nevertheless there can be no comparison between the past and the present situation with reference to the training of metallurgist cadres in China.

The metallurgical faculties of the higher educational institutes [VUZ] of old China were not even divided into specialties. There were no complete teaching programs; the giving of courses depended upon the availability of instructors and the curriculum, upon the inclinations of the latter. There were not enough instruments or equipment available for laboratory work; there were no accessible places where the students could perform practical work. It stands to reason that the knowledge acquired by the students was haphazard and unrealistic. Because of the backwardness of industry of that day, young men ignored metallurgy as a specialty when selecting their life career. As a result there were very few students in the metallurgical faculties. Moreover, even the insignificant number of graduates of these faculties had difficulty in finding suitable work.

This is the reason that we inherited so few metallurgists from old China.

Without question this situation in the VUZ did not satisfy the needs of development of the national economy of the Chinese People's Republic. In 1952 the Communist Party and the government of China regulated the problems of the training of cadres for higher educational institutions. The Peking Institute of Ferrous Metallurgy came into being expressly at this time -- at the threshold of socialist development.

Not long ago the Institute was like a feeble sprout on weak soil especially in regard to cadres and educational equipment. Today, however, on its seventh anniversary, it is a solid educational institution which satisfied the demands of the present day.

The Institute comprises five faculties: mining, metallurgical, technological, mechanical and physico-chemical. These faculties train engineers in eleven specialties. In the mining faculty the specialty "prospecting of ore deposits" has two facets, subterranean mining and open-pit mining. In the metallurgical faculty there are three specialties: metallurgy of ferrous metals (it is divided into pig iron metallurgy, steel-metallurgy, and electro-metallurgy), foundry production, and metallurgical furnaces. In the technological faculty there are two specialties: pressure treatment of ferrous metals and metal science and heat treatment. The latter is divided into three specializations -- alloyed steels and heat treatment, refractory alloys, and powder metallurgy. The mechanical faculty trains specialists for the mechanical equipping of metallurgical plants and the electrification of industrial enterprises. Finally, the physico-chemical faculty has three specialties: metal physics, physical chemistry of metallurgical processes (subdivided into physical chemistry of metallurgical processes and metallurgy of rare metals) and engineering mathematics.

In the Peking Institute of Ferrous Metallurgy there are at present over 7,000 instructors, students, and employees. The library of the Institute comprises more than 300,000 books. The buildings erected for the Institute on a total area of 127,874 square meters include 34 laboratories, workshops, and a training metallurgical combine under construction. During the seven years of its existence, the Institute trained for the country 2,368 specialists, builders of the metallurgical industry, among them 2,296 graduates and 72 post-graduates.

The Peking Institute of Ferrous Metallurgy was created under continuous struggle. Its growth was one of a struggle between the lines, ideas, and methods of socialist education and the lines, ideas, and methods of capitalist education.

#### Destruction of the Old and Creation of the New

From the very beginning of our Institute the educational process was reorganized. The basic task of this reorganization was to abolish the old semi-colonial, capitalist system of education and to create a new socialist system. Our chief goal was the introduction of a course of all-rounded development, and the key to the solution of this problem was the training of a highly qualified staff of professors and educators and the raising of their ideological and political level.

The educators whose recent origin was in the old society had no experience in the creation of a socialist institute of the new type nor in conducting educational work for a course of well-rounded development. On the contrary, they were entirely prisoners of old

methods in the field of education and almost entirely confined by the old ideology. In this regard we first developed a movement for ideological reeducation. After that there began a transformation of the system of conducting educational work and the regulation of the volume, methods, and organization of instructions in accordance with the reorganization of the educational process accompanied by the use of leading Soviet experience adapted to the conditions of China. The main result of the reorganization of the educational process were the following:

1. A new system of education along socialist lines was created. The selection of specialties and the qualification of trained specialists were determined on the basis of the needs of the nation's economic development, educational plans, teaching programs and lecture synopses were devised for the specialties at hand using Soviet plans, programs, and the textbooks as models; new teaching methods were applied; laboratory and practical studies, shop practices, course and graduate planning, etc. were introduced; the relation between theory and practice was improved and considerable attention was paid to the development among students of a capacity for independent work. All this made it possible to organize the new educational process purposefully and systematically and to eliminate the disorder left behind by the old system of education.

2. In passing through the reorganization of the educational process, instructors considerably raised their ideological and political level and their qualifications and in particular recognized quite clearly the superiority of the socialist system of education to the capitalist system; in addition to this the number of young teachers grew considerably: in the period 1953-1954 they composed 50 percent of the total number of lecturers.

3. As a result of the reorganization of the educational process the quality of scientific work improved sharply. The students began to receive broader education. As experience shows, diploma-holding graduates of the institute can after a brief period of practical experience work independently, and many of them can rapidly become distinguished workers.

All this success was made possible because of the assistance of our Soviet friends. During the reorganization of the educational process eight Soviet specialists served in our Institute. Educational plans and programs were set up with their help; the course and graduate planning which they carried out among our teachers permitted the latter to carry out a course planning among students as early as 1954 and the graduates of 1955, to fulfill graduation plans and dissertations for the first time. In addition, the Soviet specialists helped our institute to train a considerable number of graduate students. As a result, the assiduous work of our Soviet friends exerted an enormous influence upon the

development of the educational work in our institute; their selflessness and indefatigability will serve as a bright example for us in the future.

#### PURSuing THE PARTY COURSE.....

Nevertheless, during the reorganization of the educational process, the bourgeois ideas, which had showed themselves to be out of touch with politics, reality, and the masses, were still existent among educators. For the majority of educators at that time, the basic problems as to whether it was necessary to place education at the service of the proletariat, to be guided by party policy, to combine education with productive work and to put into practice the line of the masses had not yet been solved. These problems were solved after the exposure of rightist elements and after the popular movement for the regulation of style in 1957. It was only after this that our institute made great strides forward pursuing the course of the Communist Party.

During the revolution, the institute in conformity with the policy of the party carried out the following measures in the field of education:

1. All teachers and students as well as other workers of the institute were called to work in production. This destroyed the old viewpoint expressed in a contemptuous attitude toward production work and toward physical laborers and promoted the merger of theory and practice and the transformation of the intelligentsia into a labor mass. Production occupations were organized corresponding to the various specialties represented in the institute; instructors and students participated in the movement for the mass smelting of steel right in the plants, mines and rural areas. In those stormy days, the institute sent 2,121 instructors and students to 21 cities and the provinces. Under the guidance of primary party organizations and in collaboration with the local masses they built 25,086 different steel melting and blast furnaces, set up 116 laboratories and more than 300 short-term courses and schools or raising the culture of the workers, trained 67,187 workers and carried out 1,767 projects.

It was good to release into the sea fish which had lived in lakes. Let them experience storms and learn that it was necessary to fight.....

Indeed, a radical change occurred in the outlook of the institute. Whereas in the past, educators because of unawareness of life's happenings, often appeared helpless, they had now grown considerably and learned that in work it was necessary to both teach and be taught and to become pupils of the workers and peasants. Old traditions as reflected in the separation of theory from practical work, and by dogmatic methods of work were destroyed. once and for all, because lectures now corresponded

with the actual situations in production; this gave the educational process a new life. Listening to the lectures and participating in production work, the students acquired vital and practical skills. On the other hand, as the teachers and students, while working, lived together with the people, the noble qualities of the latter exerted an influence upon them. At present, such communist qualities as collectivism, love of work, and selflessness have become general features of the institute collective.

2. The educational process was organized directly at the site of production. Students worked in the shop and there they listened to lectures and went through training in another form. For instance, recent first course students of the mining faculty who worked and listened to lectures at the mines for three months mastered the program material better and more thoroughly than students of the same course in previous years had done and in the field of practical skills, they were ahead of even fifth-course students. First course students who worked in the rolling mill were examined as to their knowledge of metallography and heat treatment. Despite the difficulties of the questions asked the answers were good and the students had not only mastered the basic theoretical principles of technology and equipment, but could express their own views on practical problems. In the past metallurgy student after three years of study did not even have an idea of the processes of steel production, whereas now, even first course students have definite concrete knowledge of these processes.

Instructors of our institute have used the most diverse forms of industrial training:

1. Lecturing in the shop. Before or after an industrial operation is carried out, the teachers in the shop gives the students explanations corresponding with practical problems and the requirements facing the students.
2. Consultations during production. These are given during breaks. Usually, a great many questions are raised.
3. Guiding the students in production. This consists in particular in helping the students to effect efficiency suggestions and perfect techniques.
4. Reviewing. Teachers attend a production meeting of students in order to help them in the discussion and solution of problems occurring in production and in the generalization of experiences.

The study of each industrial operation had a clear aim and was carried out systematically and in planned fashion. Production training was an integral part of the entire educational plan and was closely combined with instruction in the auditorium.

Thus the most important means of improving educational work in the institute were, first of all, the enlistment of teachers and students in industrial work and, secondly, on-the-job training according to the needs of production, generalization of experience in practical work, and deeper study of theoretical problems.

3. The line of the masses in the field of the conduct of scientific research work was put into effect. During recent years, the institute achieved a certain success in this area. Some teachers believed that scientific research was the concern of highly qualified specialists and that the study of existing production problems did not at all constitute scientific research work. In a period of three years (1955 to 1957) only 93 theses were prepared.

Since the educational revolution began, the character of conducting scientific research activities in our institute changed completely. As a consequence of the fact that in accordance with Party instructions the course "scientific research work -- at the service of socialist construction, at the service of production" was introduced in our institute and the mass line method was employed; the broad masses began to engage in scientific work, a fact which gave the institute an unrecognizable aspect in this regard. In the fall of last year, during a period of several months, 294 scientific research theses were completed, the quality of the work being high.

When doing scientific research work, we, on the one hand, strengthen ties with enterprises and conduct industrial experiments taking into consideration the needs of production; on the other hand, we organize experiments in the laboratories of the institute so that basic themes outlined by the State may be fulfilled, the scientific theoretical level of instructors raised, and students infused with habits of independent work.

4. We widely enlisted the masses in the development of study plans and programs. For this purpose, teachers and graduating students were sent to enterprises to master the newest advances in technology, to generalize production experience, and to write summaries. At present, a part of the study plans and programs for various specialties has already been worked out.

By working out study plans, we, on the whole, solved the following problems:

- a) explained what was required of students in regard to political and technical matters;
- b) establish the time and place of work;
- c) established a unified budget of time for work and for conducting industrial practice course projects;
- d) clarified the aim and purpose of on-the-job training and lecture instruction and the relation between them;

e) improved the study of general education disciplines and clarified their relation with special courses;

f) saw to it that students were not overloaded.

5. Teachers established closer contact with students.

Previously they merely delivered lectures and did not care about the development of students, did not know them, and did not guide them in their studies. We proposed that each teacher should work together with his group, conduct his own so-called "field of experience," consult with his students, and direct their educational life. All this resulted in greater mutual esteem between instructors and students.

In our institute, at the present time, students and teachers are closely and intimately allied. On one hand it is not unusual to see instructors listening modestly to students and actively improving their educational work; on the other hand, the students esteem the leading role of the teachers in educational work and absorb useful knowledge from them.

The results of the above measures have shown that training and educational work in our institute is on the level with modern requirements and problems.

At present the faculty and students of Peking Institute of Ferrous Metallurgy is tightly knit. It responds actively to the battle call of the eighth plenum of the Central Committee of the Communist Party of China to fight for the further realization of the party line of education and the consolidation of the achievements of the revolution.

#### Brilliant Victory of the Party

On the basis of the institute's seven years of working experience the following conclusion may be drawn: Where the red banner of the party is raised high, there victory is to be found. The leadership of the Communist Party has guaranteed and will continue to guarantee in the future the further growth of our institute. As long as a battle was not waged in the institute against rightist bourgeois elements, as long as professors and instructors showed a certain lack of confidence in the leadership of the party in the field of education and training work as well as in scientific research, there was no noticeable progress. The struggle against rightist elements and the movement for the regulation of style, which bolstered the thorough guidance of all workers by the party were precisely what helped to create in the Institute a fresh and creative atmosphere for work.

The Institute of Ferrous Metallurgy has been in existence for only seven years, but as a result of the all-out solicitude of the Communist Party of China it has grown and become so strong that it completely meets its responsible task.

All the achievements of the Peking Institute of Ferrous Metallurgy are also due to the unselfish aid given by the great Soviet people to their Chinese brethren. On the occasion of the tenth anniversary of the founding of the Chinese People's Republic we express our heartfelt gratitude to our dear elder brother, the Soviet Union.

END

This publication was prepared under contract to the  
UNITED STATES JOINT PUBLICATIONS RESEARCH SERVICE,  
a federal government organization established  
to service the translation and research needs  
of the various government departments.