JPRS: 5951

18 November 1960

RADIO INDUSTRY IN COMMUNIST CHINA

U. S. JOINT PUBLICATIONS RESEARCH SERVICE
1636 CONNECTICUT AVE., N. W.
WASHINGTON 25, D. C.

JPRS: 5951

CSO: 5159-N

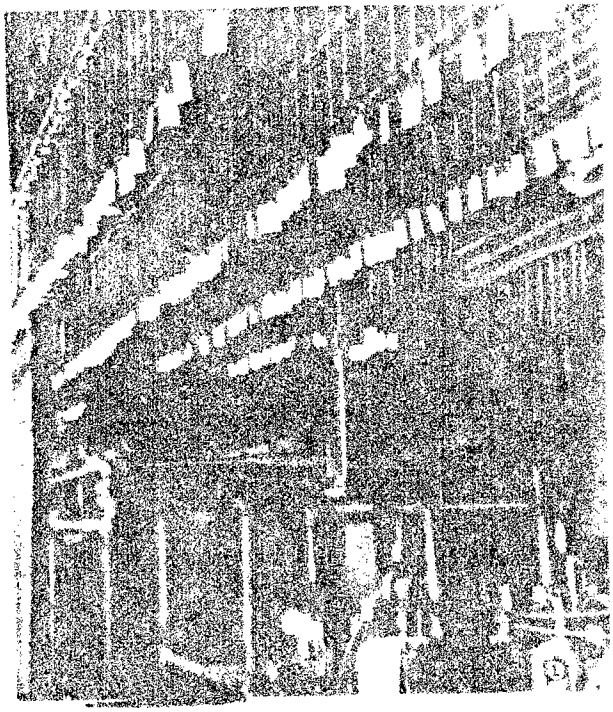
RADIO INDUSTRY IN COMMUNIST CHINA

Table of Contents

RADIO INDUSTRY ADVANCES TOWARD
MECHANIZATION, SEMI-MECHANIZATION, AUTOMATION
AND SEMI-AUTOMATION

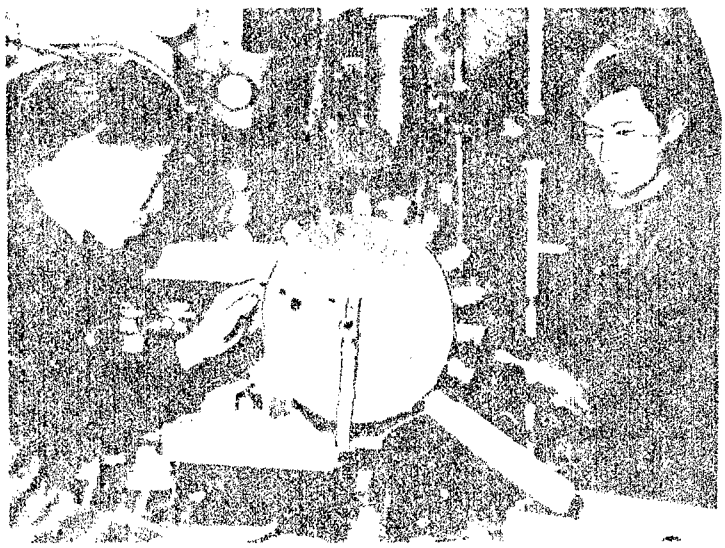
[The following are four photos with translated captions under the title "Wu-hsien-tien kung-yeh hsiang chi-hsieh-hua, pan-chi-hsieh-hua, tzu-tung-hua, pan-tzu-tung-hua ta chin chun" (English version above), appearing in Wu-hsien-tien No 3, Peiping, 19 Mar 1960, inside front cover page.]

At present, a movement of technical innovation and technical revolution centering around mechanization, semi-mechanization, automation and semi-automation is developing with great vigor throughout the country. It opens up a broad avenue avenue for raising labor productivity, saving manpower and sustaining a continued great leap forward in production.



(1) The lacquer spraying process is automated by the automatic high pressure static electric field lacquer spraying equipment made by the Hua-pei Radio Materials Works.

(2) Worker Wang Shu-yen of the Hua-pei Radio Materials Works mechanized the alloy spraying process. They are shown assembling the machine for automatic lacquer spraying.



(3) In the assembly shop of the Peiping Electronic Tube Factory, the moisture removal process and vacuum pumping process are combined into one. With the omission of one process, equipment is saved, and working efficiency increased.

(4) Wrench worker Yang Tse-chun (left), delegate of the Chung-ch'ing Radio Works to the national "Heroes Meeting", is shown with technicians installing an automatic control machine which can raise production efficiency by four time.

STANDARDIZATION OF RADIO RECEIVERS

/ The following is a full translation of an article entitled "Kwang-po chieh-shou-chi ti piao-chun-hua kung-tso" (English version above), by Huang Chang-ch'uen, appearing in Wu-hsien-tien, No 3, Peiping, 19 Mar 1960, pp 5 and 26./

Standardization is a technical work with high policy-making significance, as it reflects the relationship between technology and national economy. Through standardization, we can solve the contradiction between production and consumption, the contradiction between quality and quantity, the contradiction between one industry and its supporting industry, and the contradiction between products in respect to maintenance and exchange. Therefore, standardization is beneficial to the uninterrupted growth of national economy and beneficial to the great leap forward in production. In the meantime, it is an important measure of building Socialism in a "more, faster, better and more economical" fashion. Since the Party's 8th Congress, standardization has been listed as one of our country's technical policies. Now, there is a Standardization Bureau in the National Scientific Technological Commission, and national standards for various products began to be formulated in 1959.

Standardization is particularly important to the development of radio industry. We have discovered that among radio products, 50-70 percent of the elements or units are either the same or similar.

If we standardize, serialize and generalize these elements and units, we can achieve much more with less effort in designing and production. For example, we can shorten the design period, shorten the time for production preparation, lower the cost and guarantee the quality and exchangeability of products. Standardization in radio industry had its inception in 1955 when a "radio parts standardization conference" was called. As a result of promoting standardization, the quality of products was greatly improved. For example, the life of band switch was prolonged five times, and that of button switch was prolonged three times.

From the standpoint of radio receiver manufacturing, standardization is an important measure to make the products cheap and yet with high quality. In the mean time, standardization makes it possible to popularize radio receivers by mass production at low cost.

The central work of standardizing radio receivers is to standerdize, serialize and generalize the elements and units so that the receivers may be classified into a few grades according to their properties. By so doing we shall be able to produce a great variety of radio receivers to meet people's demands in their cultural life. Just like cotton cloth, once the width of the fabric is standardized, more colorful products will be turned out with high efficiency. However, the outside appearance of radio receivers needs no standardization. Hence, the substance of standardizing radio receivers is to reduce the volume of design work by means of "more, faster, better and more economical"methods. While we demand that the

outside appearance should be varied, the properties of radio receivers should be systematized and the elements and units should standardized and popularized. As everybody knows, the time needed for production is determined to a great extent by the time needed for producing the tools and molds. In designing the stand for radio receivers, if we take all types of receivers into consideration and use standardized and popular material, what we need to do in trial manufacturing new receiver sets is just to test the circuit and design the case. Many radio receiver manufactories in our country used this method during the great leap forward movement, and obtained "more, faster, better and more economical" results. For instance, "Panda 506 and 601" receivers made by the State-owned Nanking Radio Manufactory and "131, 132 and 133" receivers made by the State-owned Shanghai Radio Materials Works were produced in this way.

The standardization, systematization and popularization of parts and units will not only facilitate replacement during repair but also eliminate installation difficulties caused by differences in size and material. With elements and units standardized, systematized and popularized, highly advanced technology can be applied for their production and amateur radio lovers may find it easy to develop their interest. If, for instance, the amplifiers are not standardized, the same 130 mm diameter amplifiers may have three, four or even five screw holes for installation. This will cause inconvenience to both repairers and amateurs. Many countries have standardized the elements and units for radio receivers. In Soviet Union, for instance, all

all radio receiver parts are standardized, and therefore there is no difficulty in replacement or repair. Not long after the standardization work got underway, the first National Radio Receiver Critical Comparison Conference was held in December 1958, during which the superior products were selected as the standard. Meanwhile, specifications for loud speakers and electronic tubes were set up.

Standardization of radio receivers can accomplish great technological and economic results which will have a great effect upon capital accumulation and enlarged re-production. If we can save one set of tools for one receiver model, we can save the State 200-300 yuan. According to the preliminary analysis of the Nanking Radio Manufactory, after standardization, the factory saved 136,000 yuan while making the 6-tube "Panda 601."

Right now, there is a nation-wide upsurge of technical innovation and technical revolution centered around mechanization, semi-mechanization, automation and semi-automation. To meet the demand for technical innovation and echnical revolution, all manufactories are unfolding their standardization work. Under the situation of the great leap forward, the standardization work should follow the mass line, rely upon the masses, combine foreign with native methods, and above all serve the general purpose of a great leap forward in the production of radio receivers.

MECHANIZATION, AUTOMATION AND CONTINUOUS OPERATION IN HUA-PEI RADIO WORKS

[The following is a full translation of an article entitled "Hua-pei ch'ang 'san-hua' chi-shu ko-hsin tu-chi-chan" (English version above), appearing in Wu-hsien-tien No 3, Peiping, 19 Mar 1960, p 30.]

Since February, a technical innovation and technical revolutionary movement centered around mechanization, automation and continuous operation has been developing with vigor in the Combined Hua-pei Radio Materials Manufactory. During the month of February, this factory put into practice 184 items of technical innovation, of which 87 were mechanization, 73 were automation, 20 were continuous operation and 4 were remote control. These innovations raised production efficiency from two to 30 times, and saved a lot of manpower and equipment.

Manual operation in the Combined Hua-pei Radio Materials Manufactory, although a modern enterprise, still occupies more than 40% of the total operation because of the great variety of products, the numerous specifications, the small volume of products and the long process of production. Although this factory had put into practice more than 10,000 items of technical innovation throughout 1959 and January 1960, yet few of these items had anything to do with mechanization, automation and continuous operation.

Under the influence of the technical innovation and technical revolutionary movement in Harbin municipality, all workers in this factory responded to the call of the Party, discarded superstition, showed the spirit of daring to think and daring to act, and energetically engaged in mechanization, automation and continuous operation. At the beginning, workers of Shop No 12 had divergent views toward the possibility of automating the oil press. Many were skeptical because there is no automatic oil press in any country in the world, while others believed that we could succeed even though there is no automatic oil press in any country. After a bloom-and-contend debate, and unification of thinking and action, an automatic 400-ton oil press was built. From weighing raw materials, delivery of raw materials, mold opening to air blast, all six processes were done without manual labor. After this success, they planned to completely automate the whole workshop before 1 June. In the tool shop, after the automation of keys (or wedge) finishing on the turret lathe, a large amount of keys are produced just by closing the switch. All operations including material delivery, positioning, cutting and reaming are done automatically. This has saved a large amount of labor, raised labor productivity and improved the quality of products.

Those who were formerly skeptical toward mechanization, automation and continuous operation have introduced many items of technical innovation. The capping of carbon resisters was originally done by hand. Although the workers have steadily increased their working efficiency, they still cannot catch up with the rising monthly production rate of carbon resisters. Now, one automatic capping

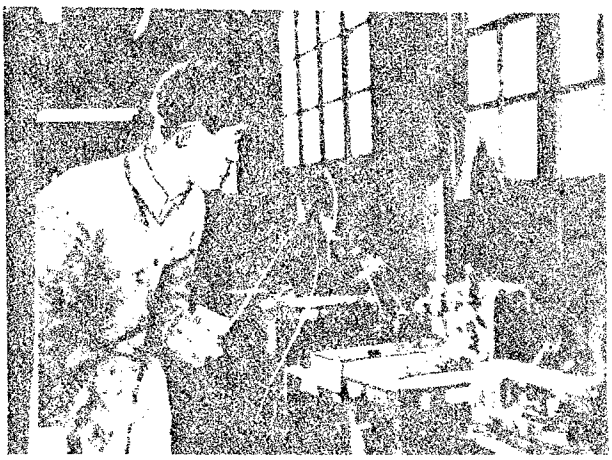
machine can do the work of four skilled workers.

Painting, stamping and testing are common processes in producing radio parts, and most of them are manual operations. In the past many people thought that it was hard to revolutionize these processes. The testing and carbon register workers in Shop No 24 had the courage to think and act. They connected the testing meters and instruments with the stamping machine so that testing and stamping became a single operation, saving the labor of six workers and 20 square meters of production area. In Shop No 22, a static electric field automatic painting line was installed, handling two painting and three drying processes. The whole line is operated by two workers; one moves the capacitors and the other controls the electric circuit. The working efficiency of painting is increased 30 times and material consumption is reduced by 40%. More importantly, tens of workers are liberated from hard manual labor detrimental to their health.

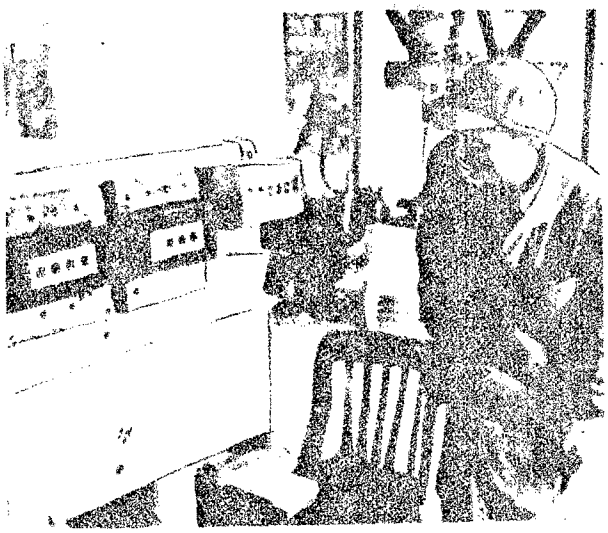
The fast development of mechanization, automation and combined operation at the Combined Mao-ped Radio Materials Works is attributable to the leadership of the Party, which mobilized the masses, encouraged the spirit of daring to think and daring to act, paid close attention to new revolutionary technology, and combined technical innovation with shock activities. Now that 90% of the workers are engaged in a crash program for mechanization, automation and combined operation, a preliminary victory has been won in technical innovation and technical revolution.

ADVANCE TOWARD MECHANIZATION, SEMI-MECHANIZATION AUTOMATION AND SEMI-AUTOMATION

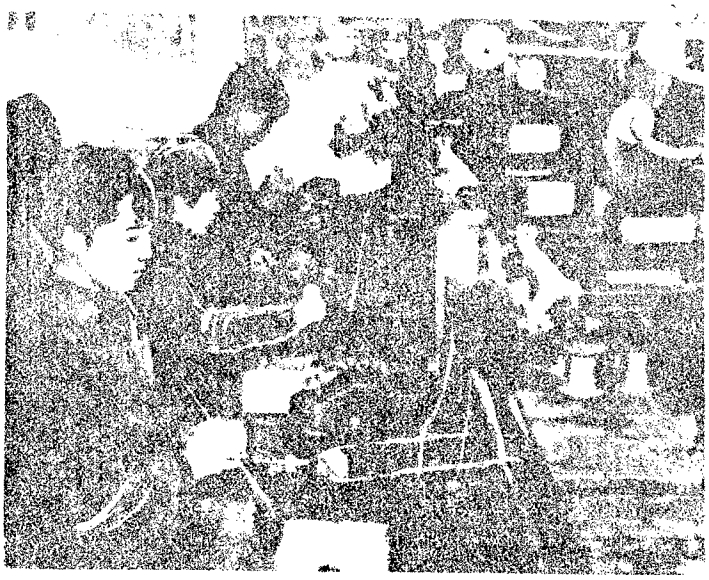
[The following are five photos with translated captions under the title "Hsiang chi-hsieh-hua, pan-chi-hsieh-hua, tzu-tung-hua, pan-tzu-tung-hua ta chin chun" (English version above), appearing in Wu-hsien-tien No 3, Peiping, 10 Mar 1960, inside back cover page.]



(1) Young worker Ting Chi-ken of the Shanghai Shang-lien Electric Works has recently succeeded in trial manufacturing a radio remote control machine which can direct the operation of a number of lathe at the same time. The picture above shows Ting holding his controller to direct the operation of an automatic spring lathe.



(2) A "no man's" working section has appeared in the Shanghai Pharmaceutical Plant No 1. The operation of this section is controled by instruments. Once in every three days, the workers go to the section to add raw materials. The above picture shows a worker studying the condition of production by observing the native-made instruments.



(3) The Peiping Electronics Instrument Works is one of the local radio engineering enterprises. It has revolutionized many of its tools by native methods. The above picture shows its self-made bee-hive type semi-automatic coil winding machine which can make three coils at the same time.

(4) A worker of the Peiping Electronics Instrument Works tests capacitors by a native-made semi-automatic capacitor testing machine.

(5) The above picture shows the semi-automatic winding machine for transformer coils made by the Peiping Electronics Instrument Works.

THE TECHNICAL COUNTENANCE OF THE NANKING ELECTRONIC TUBE MANUFACTORY CHANGES RAPIDLY THROUGH MECHANIZATION AND AUTOMATION

[The following is a full translation of an article entitled "Ta kao chi-hsieh-hua, tzu-tung-hua, Nan-ching tien-tzu-kuan ch'ang ch'i-shu mien-mao hsun-shu kai-pien" (English version above), appearing in Wu-hsien-tien No 4, 19 Apr 1960, p 29.]

There is a rapid change in the technical countenance of the Nanking Electronic Tube Manufactory, which is currently engaged in mechanization, semi-mechanization, automation and semi-automation.

Within a short period of one month, the manufactory put into practice 2361 items of innovation, of which 340 items were more important. It manufactured 13 kinds of new products, 93 automatic mica sheet spraying units, 4 glass tube treatment combination units, and 5 assembly lines. Altogether 259 manual operations were mechanized. Now, the wrench work is basically mechanized; the processing of filaments is automated; chemical processing is both mechanized and automated; stamping of tubes is now a part of combined operation; and part of the tubes are automatically tested. Supersonic technology is being promoted in various sections of the factory.

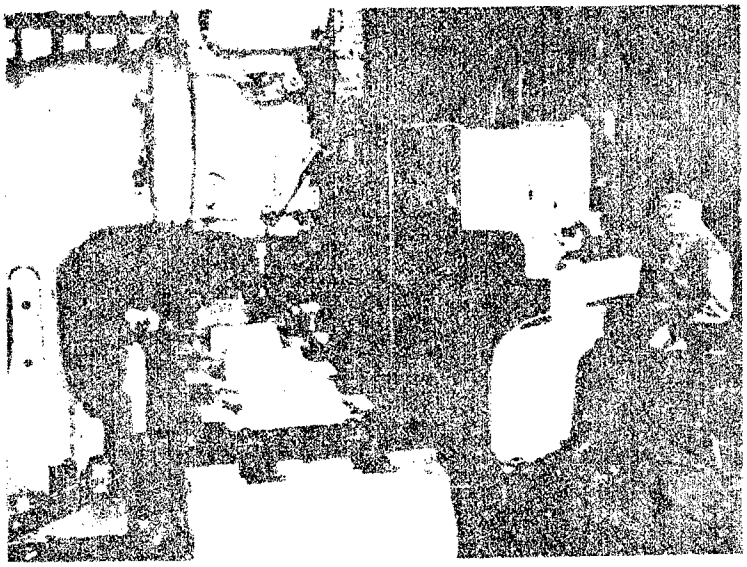
Without increasing equipment or personnel, the quality and quantity of products and trial manufacturing tasks are doubled as compared with last year. As a result of energetical engagement in

technical innovation and technical revolution centered around mechanization and automation, labor productivity has been greatly improved, and the output is in excess of the daily quota.

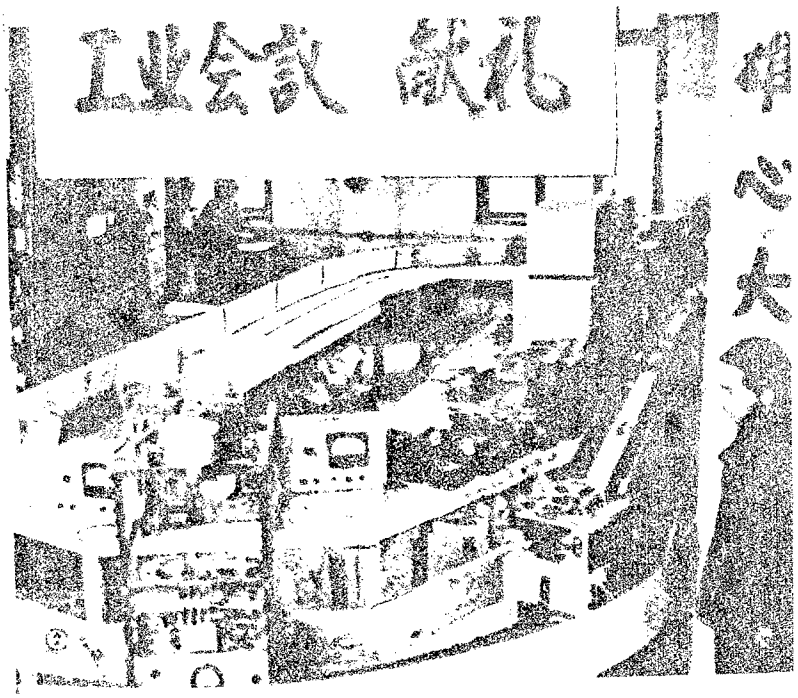
EVERY PLANT IS BUSY WITH INNOVATION; EVERYBODY SHOWS CREATIVE ABILITY

[The following are four photos with translated captions under the title "Ch'ang ch'ang kao ko-hsin, jen jen yu ch'uang-tsao" (English version above), appearing in Wu-hsien-tien, No 4, 19 Apr 1960, inside back cover]

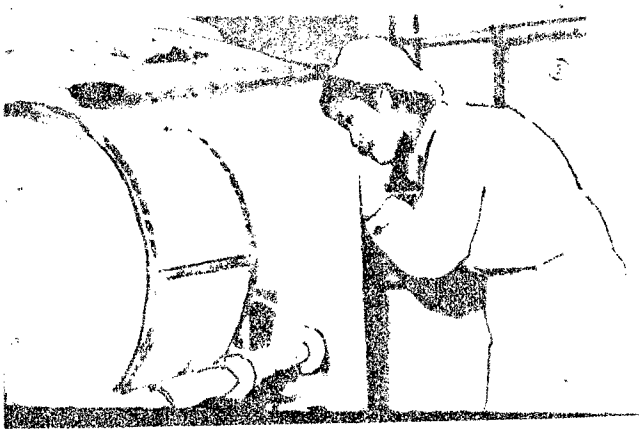
In the field of radio engineering industry, the movement of technical innovation and technical revolution centered around mechanization and automation has entered a new stage. Many automatic production lines have appeared. The factories are advancing toward further mechanization and automation, combined operation and remote control. Both the labor productivity and the output value have increased rapidly. Under the leadership of the Party, workers dare to think and dare to act, and positively devote themselves to the movement of technical innovation and revolution. Some factories have achieved the slogan "Everybody has invention, and every machine has undergone revolution."



(1) Many technical innovations in machine-building industry are based upon electronics technology. Nationally famous model worker Su Kwang-ming of the Harbin Vehicle Factory, under the support and encouragement of the Party and through 17 days and nights of continuous effort, converted an old milling machine into an automatic milling machine controled by photoelectric cells. The machine can automatically record the number of pieces processed and automatically issue warning signals. The above picture shows Su Kwang-ming at the control panel.



(2) The automatic testing machine invented by the workers of Shanghai Recording Machine Materials Plant can accurately test 2681 recording machines every day, and provide testing reports. Manually operated testing machine can only handle 40 recording machines a day.



(3) The mica sheet spraying group of the chemical plant of Peiping Electronic Tube Works invented an automatic rolling spraying machine which combined eight manual operations into one, raised efficiency 8 times and saved the labor of 23 workers.

(4) The assembly shop of the Harbin Electric Meter and Instrument Plant is decorated with many placards showing a new atmosphere of "Everybody has invention and every machine has undergone revolution." The plant has now five automatic production lines, and 50 units of automatic machinery. More than 1,000 manual operations are mechanized.

END

1004

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