

## TEXT 10

### TO DEVELOP INDUSTRY WE MUST INITIATE TECHNICAL INNOVATION

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Chairman Mao says: "In developing technology, we cannot follow the old road of other countries in the world, trailing behind them step by step. We must discard all conventional practice and apply up-to-date techniques as much as possible, so that we can, in not too long an historical period, build our country into a strong, modernized socialist state." Chairman Mao's instruction serves as a profound criticism of the philosophy of servility to foreign things, of the mentality of trailing behind others, and of the ideas of Chia-kuei [a character in a novel by Lu Hsun who poses as a foreigner], all of which allege that China must always trail behind Western science and technology. It also greatly enhances the initiative and creativeness of the working class, the scientific and technical personnel, and all the people of our country, giving a mighty impetus to the development of technical innovation.

To initiate technical innovation is a reliable approach to fully tapping the latent capacities of existing enterprises and to developing production with greater, faster, better, and more economical results. It also serves as an effective means for persistently developing industry along our own road, so that we can catch and surpass the advanced level of the world. To persist in revolution and adhere to the road of socialism in the realm of productive skills requires us to rely on the masses and motivate them to take part in technical innovation and technical revolution. Whether or not we emphasize technical innovation and whether or not we reform backward production techniques is a significant indicator of our adherence to the policy of working with independent effort and through self-reliance. It is also the concrete expression of the acute ongoing struggle between the two ideologies and two lines in the realm of productive skills. At present, the broad masses of workers, tempered by the Great Proletarian Cultural Revolution and the Campaign to Criticize Lin Piao and Confucius, display an ever-growing revolutionary enthusiasm. Confronting us is the important task of launching in greater depth and breadth a drive for technical innovation and of bringing into full play the socialist initiative of the broad masses in order to promote great strides in the socialist construction in our

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country and to further develop the excellent situation in both revolution and production.

Whenever the issue of increasing production becomes the topic of the day, some comrades tend to reach out their hands to higher authorities for more factory buildings, more equipment, and a greater work force. They hold that "the size of the egg determines the size of the chicken." To double output, we must double the input of factory buildings, labor force, and equipment. It appears that without "doublings" in these categories it is impossible to "double" production. This mentality puts a restriction on the mass drive to initiate technical innovation in a big way. Naturally, we cannot dismiss out of hand the contention that some addition of equipment, factory buildings, and labor force is required for increasing production. But the fact is that the current production level in some factories is far behind that of their more advanced counterparts. Only by digging out the potential capacity of these factories can we achieve more with less money, or even with no additional cost whatever. Besides, be it now or in the future, state funds for construction are always limited. The industrial labor force cannot be permitted, and is not permitted, to expand without restraint and without any connection to agriculture, which is the foundation of the national economy. Any factory which runs into difficulty and only reaches out its hand, "waiting, demanding, and relying on" the higher authorities for more, will merely dampen the socialist initiative of the broad masses. "The more one waits, the laxer his spirit; the more one relies on others, the lazier he grows; and the more one demands, the less enterprising he becomes." In units and departments where such a mentality prevails, the initiative and creativeness of the broad masses is barred from coming into play, and technical innovation and technical transformation become empty talk.

Will the "addition" of capital, equipment and whatnot lead necessarily to a proportionate increase in production? Not always. The experience of many units tells us that when the line is wrongly oriented and devoid of the revolutionary spirit of self-reliance, the broad masses are fettered in their actions and production will not rise even when more money and equipment are made available. When the line is properly directed, when the socialist initiative of the broad masses is fully mobilized and technical innovation is in full swing, then production rockets upward although little or no equipment and labor force have been added. The Shanghai steel industry, harassed by Liu Shao-ch'i's revisionist line in the days before the Cultural Revolution, hung back from progress for many years. The steel plants remained the same in number after the Cultural Revolution and basically had no expansion in labor force. However, since they have corrected the direction of the

line, they have initiated full-scale technical innovation through their own efforts and by relying on the masses. With the application of the new technique of oxygen blast, the converters increased their smelting power by 75 percent over the designed capacity. The old open-hearth furnaces with a volume of fifty tons doubled their output following this innovation. The smaller electric furnaces with a five-ton capacity accepted more and more input until they were handling fifteen tons each. In 1973, the entire city's steel output showed a rise of 70 percent over that of 1965. This fully illustrates that there is no limit to the development of production through technical innovation and technical transformation. This insistence that "the size of the egg determines the size of the chicken," this assumption that production cannot be increased without an expansion of equipment, factory buildings, and labor force, is therefore groundless. At the same time, it also illustrates that in order to persist in reform in the realm of productive skills and to push production forward rapidly, it is imperative that we first settle the issue of ideology and line. Only by solving the ideological and political question of following the socialist road or the capitalist road from the height of the Party's basic line can we find a solution to the issue of reformation or conservatism in the realm of productive skills.

Why is it that some units seem unable to get technical innovation underway? Some comrades have argued: "The masses in our unit have great enthusiasm. A little extra work won't prevent them from accomplishing the job. Innovation or no innovation, we can get along fine." Others have held: "We are hard pressed by production tasks. We have no time for introducing innovations." All this constitutes still another mental barrier to the progress of technical innovation. It is a good thing when the masses have great enthusiasm and can accomplish their jobs even when assigned more work. However, as socialist construction in our country presses forward, production tasks gain in volume. If we fail to initiate technical innovation but rather try to complete production tasks by taxing the strength of the masses, our energies cannot long be sustained. You can "get along fine" at present, but you cannot expect to do so in the future. The great enthusiasm of the masses is a prerequisite to the launching of technical innovation. We must fully mobilize the masses and go in for technical innovation in a big way so that we can complete production tasks with better results. Is it impossible to initiate technical innovation while taxed by heavy production tasks? Not at all. The pressure of the tasks can be transformed into mobilizing power. A good many major technical innovations are rushed into being under the "pressure" of heavy production tasks. The workers in some units, hard pressed by production tasks, offered this suggestion: "Let two men take the jobs assigned to three so that one

can be spared for the work of technical innovation." Thus, technical innovation not only provides a mighty impetus and boosts production, but also raises the techniques of production to a much higher level. From this it can be seen that heavy production tasks, far from precluding innovation, make full-scale technical innovation a necessity, and thus production and innovation each serve as a stimulus to the other. Because technical innovation becomes a major force for boosting production, we must persist in our efforts toward it whatever the circumstances. The tendencies to exaggerate difficulty and let matters drift actually result from the evil influence of passive, conservative, and conventional thinking.

Chairman Mao says, "Mankind makes constant progress, and Nature undergoes constant change; neither remains at the same level." Two different mentalities are represented by those who rest content with things as they are and those who, on the other hand, persist in their efforts to change reality. Marxists hold that in a socialist society, classes and class struggle are facts. Like all other revolutionary struggles, the production struggle develops out of contradictions and conflicts. Our present-day level of productive skill represents tremendous progress as compared to that of the era preceding the Cultural Revolution. This progress did not come about naturally, but was, in simple fact, the result of struggle. As Chairman Mao's revolutionary line prevails over the revisionist line pursued by Liu Shao-ch'i and Lin Piao, the broad masses, fostering the spirit of self-reliance and hard struggle, have surmounted one difficulty after another, ceaselessly seeking changes in production conditions and consequently attaining today's high level. Without innovation and change, there can be no progress. It has been so from the past to the present day, and it will remain so in the future. After there has been progress in production, new contradictions will arise and require new solutions. It will not suffice simply to continue as of old. The revisionists hold that to develop industry, science, and technology, we have no alternative but to trail behind others step by step. They have the bourgeoisie of the West on their minds, never giving a thought to the proletariat of the East. They refuse to recognize the existence of classes and class struggle in a socialist society and try to suppress the emergence of new things on the fronts of industry, science, and technology. They go by their old ways and oppose change, an attitude which actually indicates stagnation, retrogression, and restoration. The struggle over this issue will be a lengthy one.

Legalists, who represented the emerging classes in history, advocated progress and stood for change. Under the slogan "Do not copy the old or uphold what is customary," they launched a vehement onslaught on the old and backward relations of production. With the mighty strength

of the laboring people as the major force propelling history, they served as an impetus for the promotion of change in production techniques and spurred production forward. The Confucians preached that “to copy the old will lead to no harm and to observe the rites will ensure against evil.” Their precept was nothing but the spiritual yoke that restrained the laboring people from changing the conditions of production. Lin Piao followed Confucius in his pursuit of the counterrevolutionary program of “restraining oneself and restoring the rites” and in his advocacy of the “concept of destiny” and the “theory of the summit” in order to meet the demand of the overthrown exploiting classes for restoration and retrogression. Clearly, in the realm of productive skills, there has always been an acute struggle between two different ideological lines in the form of a conflict between progress and retrogression, between seeking change and sticking with the old. In its revolution, the proletariat aims to end the old world and the old things. It must fight politically and ideologically against the reactionary forces representing the exploiting classes and their influence. With respect to productive skills, the proletariat must combat the conservative tendency to let matters drift and must contend with the mentality of cowards and lazybones who cherish no ambition in their lives. They must be brave enough to seek change and daring enough to introduce innovations. The standardized parts industry in Shanghai is comprised mostly of small factories. They are poorly equipped and hard pressed by production tasks. In the past, some were of the opinion that these factories were in no position to plunge into technical innovation. But the workers said: “We fear no obstacle but indolence. We are afraid not so much that conditions are poor as that we lack ambition.” They broke through the barrier of conservative thinking and plunged into transformation with full force. After having made several technical innovations since the Cultural Revolution, the whole industry, at no cost of capital to the state, has realized semiautomation or automation on 90 percent of their lathes. Furthermore, they have also created a batch of combined automatic lathes which have attained the advanced technical level of the world. The total number of staff and workers in the entire industry has decreased by 18 percent at present, while their output value has more than doubled. Obviously, the question is not whether changes can be made or whether there are difficulties. People need only to free themselves mentally from the bondage of conventional custom in order to be able to open up a new world of technical innovation, a world in which they can continue to discover, invent, create, and advance.

There are still other comrades who maintain that if technical innovation is to be launched, it ought to be done in a proper way. This “proper way” is no more than verbiage, an expression of their lust for

expansion and sophistication. In their eyes, only the reproduction of what has been recorded in a "foreign book" or what has been done by foreigners can be regarded as "proper." As for innovations and creations achieved by indigenous methods and coming forth from the broad masses, they hold them all in contempt, terming them "improper," "irregular," or "unreliable." If technical innovation is to be launched in the "proper way" as they define it, there will be nothing to do but imitate and copy things foreign. This will inevitably strangle innovation and creativity on the part of the masses and throw cold water on their enthusiasm. If we are to launch an extensive drive for technical innovation, it is imperative that we overcome ideas founded on blind faith in things foreign, feelings of inferiority, and contempt for the masses.

The broad masses achieve innovations and creations by simple and indigenous methods. Are their devices "irregular" or "unreliable"? Absolutely not. The masses seek innovations and creations in order to meet practical needs stemming from the progress of production. They find them by summing up their rich experience of practice and adapting them to local conditions, and thus the devices they create are marked by low cost, quick application, and effective results. These devices are handy and expedient when employed, easily applied to production, and easily popularized and implanted among the masses. They are the crystallization of the collective wisdom and experience of the broad masses, and they result from self-reliance and hard struggle. Much evidence testifies to the fact that innovations and creations that begin with the simple and indigenous methods of the masses will undergo a ceaseless process of improvement. Fragmentary innovation may result in wholesale technical revolution. The reform of a single gadget may lead to the revamping of a whole installation. The mechanization and automation of one working process might eventually shape itself into the streamlining of automatic production, which may in turn bring about a complete change in production and technology in the entire enterprise or the whole industry. Among our new devices are quite a few items that have caught up with, and even exceeded, the advanced level of the world. These are not the fruits of imitation or copying, but are achievements bearing a Chinese character and ranging from the form of products to the technical approaches employed in their making. With this in mind, we can open a new road for the development of science and technology, a road corresponding to the conditions in our own country and ensuring greater, faster, better, and more economical results. To begin to innovate by applying simple and indigenous methods does not mean that we must exclude all foreign methods. On the contrary, it will be effective to closely integrate foreign methods with indigenous ones and thus "absorb what is useful, reject what is

useless, and add what is peculiar to us," making foreign things serve our purposes and play a greater and better role. Prior to the Cultural Revolution, the sweater industry in Shanghai was engaged in a project of automation. Influenced by the revisionist line, they tried to accomplish this in a "proper way" and entrusted the project to a few persons working behind closed doors. The project continued for quite a number of years, but without result. Last year, two young electricians in a sweater factory, taking the practical needs of production as their starting point, set out to create an innovation by simple methods. At a cost of only seventy-two dollars they created a "light and electricity control box" that automated four working processes. Due to its low cost and quick effectiveness, it was warmly received by the workers. In half a year's time, the device was popularized sufficiently to be found on some 1,500 knitting machines in the industry and was responsible for raising production efficiency by 15 percent. Since the beginning of this year, this simplified process-control device has been further popularized and is now employed in twenty factories in the city, including the industries of steel rolling, steel forging, metal cutting, and rubber goods. This episode illustrates vividly that innovations introduced by the masses from simple methods have great vitality. As simple methods gain prestige, the road to technical innovation and technical transformation ever broadens. The workers said it well: "Simplicity, simplicity; we must stick to it as an unshakable method." This they said because to seek technical innovation initially through simple methods is in keeping with the objective law under which technology develops from lower to higher levels, from quantitative change to qualitative change. Simplicity comes into existence relative to complexity. In the course of the development of technology, the contradiction between simplicity and complexity will always be a fact, and they will undergo reciprocal transformation under certain specific conditions. We must seek innovation initially through simple methods under the present conditions, and we will continue doing so as the conditions of the production techniques grow even better in the future. Indeed, we will be doing the same thing ten thousand years hence—but the "simplicity" of that time will be of a higher level than the "simplicity" of today.

As a matter of course, in launching technical innovation, we must comply with objective laws and emphasize effectiveness, paying attention to combining our revolutionary spirit with a scientific attitude. Technical innovation is a painstaking job, often involving many aspects of production and scientific research. Nothing will be accomplished if we fail to abide strictly by objective laws. Some units have done a fine job of technical innovation. Their experiences prove that in the course of innovation it is necessary to fully mobilize the masses and attentively

sum up their advanced experience. Simultaneously, we must also emphasize study, investigation, and repeated scientific experimentation. We can thus avoid going astray and achieve greater results in a relatively short period of time.

“The leadership must advance ahead of the movement and not fall behind it.” Spurred by the Campaign to Criticize Lin Piao and Confucius, mass technical innovation in various industrial departments is now forging ahead. It is the pressing demand of the broad masses that we make great efforts and effect great changes. Leading cadres at different levels on the economic front should keep pace with the forward strides of the masses and lead them enthusiastically forward. They must strive to do still better in organizing the initiative of the broad masses and must voluntarily readjust those aspects of the relations of production which do not conform to the progress of the productive forces. They should deftly employ the superstructure as an energetic, impelling force and promote the drive for technical innovation more extensively and profoundly. Chairman Mao points out: “Our people should have a far-sighted, overall plan. We must strive to change economic, scientific, and cultural backwardness in our country within a few decades and quickly pull abreast of the advanced level of the world.” Anyone who cherishes the socialist new China, any revolutionary who adheres to Chairman Mao’s policy of independence and self-reliance while rejecting the traitorous line pursued by Liu Shao-ch’i and Lin Piao, is bound to give warm support to this instruction from Chairman Mao. The existing foundation of our industry has been continually reinforced by the construction carried out during the past five-year plans, and the conditions for undertaking technical innovation have become more favorable than ever. In accordance with the General Line of “Go all out, aim high, and achieve greater, faster, better, and more economical results,” we must foster the high aspiration of making our country strong through vigorous effort and must engage ourselves in solid, hard work. By doing this, we are certain to raise the production skills in our country to a still higher level. Each industrial department must work out its own plan, clearly defining its direction and goals for future technical innovation and transformation. And, beginning from the current, actual conditions of production, they should strive to strengthen the weak links in production. Envisioning what lies in the distant future and grappling with what arises in the present, they are to exert themselves to effect some small changes in the techniques of production each year. By the accumulated effort of several years, they can bring about major changes in production. With ceaseless change, they will move forward ceaselessly. Meanwhile, they must lend wholehearted support to the new things created by the masses and must energetically encourage

those who are more advanced. By earnestly summing up and popularizing the experience of those who are advanced and by consolidating and improving already existing technical innovations, they will ensure that mass technical innovation will surge forward in the right direction and that greater victories will be scored in the socialist construction of our country.