PERSONAL DATA

Age: 54 Sex: Male

Education: University graduate (Shanghai Jiaotong)

Total Years Relevant Experience: 31

Last Year of Relevant Experience: 1980 Year Left China: 1980

Initial Immigration Status: Legal

Native Place/Overseas Connections: Shanghai native/parents in Hong Kong

Class Background/Political Designation: unknown

OCCUPATIONAL HISTORY SUMMARY

Positions Held: 1) Shanghai Diesel Engine Factory, 1950-80
a) Technician, Technology Department, 1950-66, 1973-80
b) Worker, production shop, 1967-72

Administrative Level of Work Unit/(No. of employees):

1) Ministry, later Municipal/(grew from 4000 to 12,000)

Experience in Full-time Manual Labor (for non-worker occupations):

shop worker, 1967-72

No. 63

Occupational History (7/23/80, 2.5 hrs.)

The informant came to Hong Kong in May 1980. He was able to come out legally because his parents were in Hong Kong. He worked in the Shanghai Diesel Engine Factory from 1950 to 1980, 30 years in all. When he first came to the plant, it had about 4000 employees and was a plant originally established with American capital. When he left in 1980 the plant had about 12,000 employees. The engines they produced were mostly for use on ships. The plant was under the central #1 Machine Building Ministry in Peking. In Shanghai, it was under the direct administration of the #1 Machine Building Bureau of Shanghai Municipality. The bureau was divided into several groups (zu) or systems. His enterprise produced 'engines for maritime use' (chuanyong ji). Each of these groups of enterprises was a 'set' (peitao) which worked toward producing a single type of product. For example, the 'generation group' included factories that made coal-fired boilers for generating steam, one for making steam power generators, one for making electric motors, and one for making electrical machine switches. The 'shipbuilding group' (zaochuan) was the one his enterprise was in, and it included ship-building plants, diesel engine factories (making ship's power plants), and ship deck equipment. Even though they were divided into these 'sets', this did not represent another level of leadership. They had direct relations with the bureau. If the set had another leading group of its own, then it would be called a company (gongsi).

He graduated from Shanghai Jiaotong University in 1950. He was assigned to this factory, which had already been nationalized and was a state-run (guoying) plant. He was a technician in the technology department from 1950-80, with a stretch from 1967-72 doing manual labor on a grinding machine in a production shop.

Wages

When he was first assigned to his factory in 1950 he was an assistant technician, and was turned regular (zhuanzheng) after two years. He made about 90+¥. In the 1956 wage reform they set grades for technical cadres under the 16 grade scale. He was set at grade 5, engineer, since he graduated between 1950 and 1952. Then he got 106¥. During the wage reform they put everybody in the same scale, since people who had come from different units--schools, small factories--got different wages even though they often did the same jobs. So they standardized, and sometimes this entailed a raise for most. Also, they stopped giving higher wages to the graduates of better colleges. All college graduates were thereafter given the same wage. After this year his wages did not rise, and he was making the same wage in 1980.

After this they had a wage readjustment in 1963 for 20% of technicians and workers, but they excluded those already making over 70¥. There was another wage readjustment in 1970 or thereabouts for those with low wages. In 1963 they had 3 criteria--work contribution, labor attitude, and political consciousness. They assessed in groups, but the leaders also had to approve, and could change the decisions arrived at in the group. So much depended on your relations with the leaders, when it came time for assessments. After this there were 2 more readjustments recently--in 1977 and at present, which is not yet completed.

In 1977 and later, they did not emphasize political consciousness at all, as in 1963 and 1970. Just work contribution, ability, technical level. This is because there were so many people who hadn't gotten raises over the years

because they had bad class backgrounds, and overseas relations. Also, everyone's 'political consciousness' was really about the same anyway, so it was not a very useful criteria.

Promotions

Before 1956 people who were department heads were usually people who had graduated from college before 1948, some had studied overseas. They often made about 190¥. These were the experts, often from overseas. After 1957, the anti-rightist campaign removed a lot of these people, especially the ones who had studied overseas. They were given labels, and sent to small factories, to factories in the interior, or to labor reform camps, depending on the severity of their errors. He says that the majority of the people with this kind of background left their leading positions, never to return to their factory again. After that time, in his factory, for promotions to department head positions you had to have good class backgrounds and almost all were party members. They could come from shops or from among the department staff. Starting with the four cleans movement, these kinds of restrictions on being in leadership positions were even more severe. They criticized these people as taking the 'white and expert road'.

If you were in a leading position and had bad class background, you could preserve your position by being active in criticizing and struggling others with bad class backgrounds. They had this situation too. People with overseas relations were under suspicion too because their relations were very complex, and not considered reliable or trustworthy. This situation has changed for the better recently. Previously, it was impossible to enter the party if you had overseas relations or bad class background, unless you lied about your past.

At the plant level, the head plant directors were usually 'liberation-era cadres', people who had been PLA cadres before 1949. The vice-directors were often college graduates, some from before 1950, but they certainly were not those kinds of people who had been given rightist labels in 1957. They were not always party members either. Most of them were promoted from among shop directors, especially for production planning work. It was rarer to have a vice-director promoted from the department, except the chief engineer who was the vice-director in charge of technical matters.

The plant director usually did not directly lead production, but handled general matters and political affairs. The vice-director in charge of production was usually promoted from the shop leadership. The 'logistics' or administrative director usually was an old cadre from the liberation war, while the chief engineer usually was college education, from the staff of the technical department.

After 1963 or so, workers had an opportunity to be promoted to technician if they attended a July 21 Workers College. They were selected because they had good class backgrounds and were activists. After two years of study, regardless of whether or not they tested well, they would graduate and most were sent to departments to be staff technicians. The purpose of this was to move people with good class backgrounds into the leading organ of administration.

Bonuses (7/24/80, 3 hrs.)

They established a bonus system in 1950. At that time it was called 'labor competition', and was assessed quarterly. When they assessed people they divided them into several grades. 1) labor model(laodong mofan), assessed annually, 2) advanced worker (xianjin gongzuozhe), 3) superior worker (yousheng gongzuozhe), and 4) work citation (jigong). The labor models

got 40-50% of their wages as a bonus. The advanced workers got 20-30% of their wages as a bonus. The superior workers got 10% or so, but were not given cash, were brought household articles like towels. The same was true for work citations, which were about 5% of the value of the wage, and you were given it in pens or notebooks.

Each factory only has a handful of model workers, about 1-4. These workers will in turn go on to labor competitions at the all-city level, where about 200 will eventually be chosen. If they win, they give them a little more money, and publicize them in the newspaper, and award them a prize like a sewing machine. They also have the person's picture at a cultural building in the city. This process continues right up to the provincial and national level. The union handles these assessments from beginning to end.

The assessments began in small groups both in departments and shops. Each person first reports on themself, then they raise opinions and assess and compare people. About 10% are chosen advanced workers, about 10-20% are chosen superior workers, and about 20-30% are given work citations. So about 50% of the workers do not get a bonus at any single assessment.

If you are chosen a national labor model (once a year), you get a one-month trip to Peking, like a vacation, where you eat good food, see all the sights. They also had a complete attendance bonus (quanqin jiang), which was equal to an extra day's wage per month. This was fairly easy to get for the younger people. You also got more money--12 days extra wages, if you had perfect attendance for the whole year.

Leading cadres are also eligible, for example the department heads and vice-heads would be recommended by the masses in the department. Each group in the department would talk over the leaders,and recommend who they thought was the best. Based on these recommendations, the plants' Headquarters discusses and decides. The committee that decides this is comprised of the party secretary, plant director, union chairman, and communist youth league head.

All the directors, vice-directors, party secretaries and vice-secretaries are not eligible for bonuses of any sort if the plant does well. They are leaders. They are expected to do a good job and should do so. That's the way it should be. But the Chief Engineer can be assessed for bonuses because he is a technical cadre, not an administrator. Very often these people were given advanced worker awards.

They never had monthly bonuses because it was too much trouble, the time period was too short, and it was very hard to assess people quickly and so often. So they assessed quarterly, but paid the bonus out 1/3 at a time over the next three months. This system continued without change until 1966, when during the cultural revolution they changed to 'spiritual incentives' (jingshen ciji), and criticized material incentives.

At that time they cancelled this system. For a short period, they had nothing, then they tried a system of assessment every quarter which stressed political thought and with rewards of 9¥, 7¥, and 5¥ each quarter after assessments. But arguments about this were too great, so soon they just switched to supplementary wages. This transitional kind of bonus was called the 'comprehensive bonus' (zonghe jiang), and it included both the assessment of politics and also attendance. That is why it was called 'comprehensive'. The people who had been criticized during the CR were ineligible for the bonus.

After they switched to supplementary wages, they stopped these quarterly assessments altogether. Everyone got about 5¥ per month, regardless of their performance, or the job they did, except those whose basic wage

was over 120¥. There was also an end of the year bonus for all workers, which was also equal, and varied each year. It was usually around 13-15¥. It was given out at the spring festival. The money was what was left over from the supplementary wage fund at the end of the year. Before the cultural revolution the year end bonus was connected with the assessments for advanced workers. They just gave a little more money at the end of the year to those who made it, based on how many times they were selected. They got paid around February 1.

There were no assessments from 1966-77. Everyone got the same supplementary wage, not just those who entered before the cultural revolution. Once you were made regular (zhuanzheng), you got the supplement. There were no selections for labor models or advanced workers either.

In 1977, bonuses were gradually restored, but for a while they still did not call it 'bonus' (jiang) because their thinking had not yet changed. Now, since 1978, they have continued to have supplements, but they have added several different kinds of bonuses on top of this. But the amount of bonuses were small. Bonuses were larger before 1966, while they were highest from 1956-57, the richest years in China. This was because they had piece rates from 1956-58 or so. Worker enthusiasm and income was very high then. Other than these couple of years, they never had piece rates.

Since 1978, they have had the following types of bonuses. Labor bonuses, assessed quarterly for workers and staff. It is 10¥ for the quarter , you either get it or you don't. The 'quota overfulfillment bonus' (chao e jiang) is for workers, and it is for exceeding production quotas. It was given out every month, and is equivalent to piece rates, but is not figured the same way. Now they get 8 <u>fen</u> for each hour they beat the time quota. There was a 'technical reform bonus' (jishu gexin jiang) for coming up with an innovation which is usable. There is an 'economizing bonus' (jieyue jiang) for surpassing the quotas for the allowed amount of raw materials consumption. There is a good quality bonus if you go an entire month without producing a waste article or making a mistake in drawings. This is 10¥ for the quarter. They also had a perfect attendance bonus (quanqin jiang) which was equivalent to one extra day's pay for the month, or an extra 12 days (a total of 24) if you went an entire year without taking leave. This was the same as the attendance bonus they had before the CR. So the bonus situation is very complex, and now it is still changing continually. It is still undergoing change and reform. Before the CR the system was set and did not change so much. Now they meet once a quarter to assess for labor bonuses and quality bonuses. This money is paid each quarter. But the quota overfulfillment and attendance bonuses are paid every month,automatically in the wage packet, since this is calculated and not assessed within the group.

<u>Discipline, Punishment</u>

If there is a problem with one's work, like causing production problems which disrupt the shop, then they can record this in your file, and take away your bonus. Also they do this for gambling. If the offense is light, they might just talk with the person. Generally, the first step is talking to someone. Then second they criticize in the small group. Then they can dock one's supplementary wages. Then they record the problem in your file. If the problem is very serious, like stealing or gambling a lot, then the law will punish a person. They can go to labor reform. The most serious administrative punishment is recording in the file and taking away supplementary wages. They never expelled a worker that he remembers in 30 years,

and they could not deduct money from the basic wage. If you are a cadre and engage in illicit sex, they can send you to do manual labor in the shops for a while.

The most common problems for which people were punished were producing waste articles, stealing small things, fighting, illicit sexual relations. These are the most common things that are dealt with administratively. The most common administrative punishment is 'manual labor'--meaning sweeping floors, 'education', and 'recording' (jiguo). The only people expelled from the plant in 30 years were those who had committed crimes and were dealt with by the legal system. There were cadres who were demoted for illicit sex, but often this was not a demotion but just a transfer to another plant. Repeated offenders would be demoted to be workers. The most serious punishments are being suspended from duties but staying in the plant to do manual labor. No wages are given, just a small amount of expenses. This is called 'remaining in the plant under supervision' (liuchang chakan). They also have expulsion (kaichu chuchang), which means they turn the person over to the public security bureau for sentencing and send them to labor camps. There were quite a few people punished like this over the 30 years, but not a whole lot. This was for stealing, rape, gambling, gang activities.

Temporary and Contract Labor

They had temporary workers who came from the families of workers who had lots of children and low per capita income. So the son could come into the plant and sweep floors on a temporary basis. They also had workers called waibao gong, or external contract workers, who were gotten from nearby villages, and were hired on a temporary basis to do construction and ditch digging. There is a contract between the factory and the commune, and the plant administrative department itself goes out to the communes to look for workers and sign contracts. They have always had these kinds of workers, they cannot be turned into regular workers. New workers come from the labor bureau, from the sons who take the place of the retiring fathers or fathers who suffer an industrial injury, and also skilled workers come from the technical middle schools.

Technology Department

The technology department (gongyi ke), in which the informant worked, takes the drawings from the designing department (sheji ke) and decides how to produce them, what production steps will be taken, what methods will be used. The materials and specifications are already stated in the drawings. They decide what kinds of machines, what kinds of tools and settings to use to produce the products to specifications. They also decide what kinds of measuring instruments should be used to test the pieces to see if the specifications are correct. When the machine has been all assembled, it is the quality inspection department which must take responsibility for testing. Then the piece is reported to the production department, and then turned over to the sales department for selling to other units.

The production system before the cultural revolution looked like this: It was headed by the chief engineer, who was also a vice-plant director. Under him was the design department, technical department, the materials department (duanye ke), the finance department, the production department, the sales and supply department, the quality inspection department, and the labor department.

The Technology Department had one head and two vice-heads. Each department had a branch secretary who was higher than the department head, most of whom were technicians or engineers. The party secretaries mostly did not have technical education. The department had over 60 employees. They were

divided into groups. One handled the technical cards (gongyi ka), which specifies technical processes of producing an item from raw materials. In reality this is not a series of cards but a piece of paper which has the processing steps written down in order. There were four other groups in the department--one for measuring tool design, one for cutting tool design, clamps design, and also one to set materials consumption standards for jobs. Because they were producing relatively small batches of big machines, the technical cards went with the products through each group involved in production. Each group did one step in the process. Then they would turn the cards and the batch over to the next group in the production process. The next day, they might get a different batch, along with a new set of cards. This was not like mass production factories where they would produce the same product for months or years.

After the design departments finish the designs, they send them to the materials department (or forging department--duanye ke 鍛冶科), which processes the necessary metals at the right specifications to serve as raw materials. They also send to the technology department, which prepares the technical cards and also prepares for what tools to use. The technical cards also specify the tools to use on which machines--cutting tools, planes, measuring tools. If they don't have the necessary ones, they prepare to produce them themselves. After this the cards go to the workshops for production.

So the general responsibility of the technical department is to supply the production methods for the shop, given the plans sent from the design department. It makes sure the required tools are available, and it figures the amount of raw materials that should be used

The Quality Inspection Department (7/25/80, 3 hrs.)

This department was not under the Chief Engineer's leadership, but the head of the department was assigned by the bureau, and was considered a representative of the bureau. For this man the plant director must nominate people to the bureau, and the bureau has to approve. For other department heads, the director just appoints them. They don't want anyone in the Quality Inspection department who can 'open the back door' for the chief engineer or plant director, and they did not want the head of the inspection department to get fired for doing his job well. There is a built-in contradiction between the quality inspection work and the chief engineer and plant director.

The head of the quality inspection department is like a representative of the state and he is to guarantee the quality despite opposition from other leaders. He is not under their leadership, but under the bureau or company.

In the shops, there was an inspection station (jianyan zhan). They inspected half-finished articles in the midst of processing to make sure they were up to standard before proceeding. They also inspect the finished articles. When the articles are finished, they go into the spare parts warehouse. Then they will later be taken to an assembly shop, where they also had an inspection station, where they were inspected along with half-finished and finished products. As spare parts and sub-assembly jobs move through to the general assembly shop for the finished engines, they were inspected in each shop.

The inspections are performed on the shop floor, in the sections, by technical workers who are under the quality inspection department. There is a contradiction between the group leader (jianyan zuzhang) and the shop director. The inspection station is like a work group, and its 'group leader' is appointed by the inspection department head, and is

responsible only to the inspection department.

This contradiction between shop director and the head of the inspection group often comes to the surface. The shop director wants to finish the quota, while whatever the inspectors find is not counted as completed work toward meeting the quota. So the shop director and this inspection group leader often quarrel, and normally the shop director will raise opinions to him. They argue that the difference is not that great, that you can still use the piece and that it will work, while the inspection worker will just say that they are only following the technical regulations, and that the pieces they found were not up to those standards. There was always a contradiction between the quality inspectors and the workers also, since the inspection job was to find waste articles, and doing so would decrease workers' bonuses. But workers didn't dare argue with the inspectors too much. Every completed piece was inspected.

Within the work group, there is also inspection. The worker measures each piece with calipers and measuring tools before deciding it is finished. Sometimes he measures wrong or is just careless. The group leader will also check up on workers and inspect a few pieces, especially for workers who do not have much experience and are new.

The inspection takes place in the sections. The inspection workers put their numbers on the parts they have checked. They still have the technical cards for the batch, so if they discover a quality problem they look at the technical cards for the proper step and the worker will have signed his number on that step (the cards accompany the batch). So the inspector can figure out which worker made the mistake. Once the inspection worker affizes his stamp on the piece, however, it is <u>his</u> responsibility and not the workers'.

The same process goes on in each shop--metallurgy, parts-making, sub-assembly and assembly. The assembled engines are turned on and run for several hours to test them. Then the inspector will write down at what time the engine got too hot, when it started making funny noises, etc.

During the Cultural Revolution they abolished the inspection department. This was because it existed in basic contradiction with the workers, and many workers rose up and opposed it. Afterwards, they sent the inspection workers down to the shop under the leadership of the shop director. He had a group of inspectors in the shop under his orders, the former people from the inspection stations. After this the inspection work got lax. Whenever there was a batch that didn't meet standards, but the director thought was still OK, he would just tell the inspectors, "Its OK, send it out!". The group leader and workers were also responsible for the inspection of parts during this time.

Since 1978, they have restored the inspection department, the inspection stations, and they are no longer under the leadership of the plant director and shop director, but of the bureau personnel. Once again, the department makes regular reports to the bureau on the quality of products. There were also inspection stations in the tool-making shop which were under the inspection department, called 'tool inspection stations'. The name was different, the concrete work slightly different, but the task is basically the same.

<u>Changes in the Technical System during the Cultural Revolution</u>

In the cultural revolution, they abolished the technical department and sent the personnel to the shops to work in 'technical groups' or 'production service groups'. They gave the shops the drawings, and the shop director then gave the drawings to the 'technical group', in which

there was personnel who formerly worked in the technical department but who were 'sent down' to the shops. They would make the technical cards, and give then to their own production groups in the shop. They would also make their own tools in the shop, except for precision tools for cutting and measuring, which were still made in the tools shop.

Before the cultural revolution, only the tool shop made tools. Now each shop made as many of its own tools as possible, because the idea was to rely on one's own efforts. They wanted as few relations with other shops as possible--they were in a 'sealed off form' (fengbi shi). This was the style of management of the times. Each shop was to be the equivalent of a small factory.

This system did have its advantages. For example, the technical work went through faster, and the offices were closer to the shop floor, so the cards could be finished and sent to groups quicker. The preparatory time for production was quicker. There was faster communication between planning, technology, spare parts people, because they knew they were all in the same group. They didn't have to go through channels to communicate between departments to get things done. They just all cooperated and got things done fast.

But there were also disadvantages. This was a wasteful method because each shop had its own resources for itself--personnel, materials, tools. If another shop needed more people, tools, or materials, they could not get them sent over from other shops even though other shops had more than they needed at the time. This led to reduplication (chongfu) and waste (langfei). For example, if another shop needed more technicians to fix a broken machine, they usually could not get others transfered from other shops. Also, as far as capital equipment goes, one shop might have idle machine tools while others needed extra ones very badly. So generally, this 'sealed off style' (fengbi shi) was advantageous for production output, becuase you could get things done fast. But it was wasteful of people, equipment, and materials.

Administrative Structure Before the Cultural Revolution

These comments pertain also to the period after 1977. There was a chief engineer's office with one chief engineer and three assistant chief engineers. Below them were the departments.

Design Department (sheji ke): The head was also an assistant chief engineer, and the office was located in the engineer's headquarters. The assistant chief engineer was called the 'chief of designing' (sheji shi 設計师), and he was the boss of the design department's head. He gave the design department its orders as to what it was supposed to do.

Production Department: The assistant chief engineer in charges of this is called the 'chief of production' (shengchang zhang). The department handles the plant's production planning. When a responsibility is handed to the plant, they study it, then notify the labor department how many extra workers they will need, figure out how many of what kinds of materials they will need, and tell the supply department, figure up the production budget. They also give each shop their production responsibility. They also tell the design department to draw up new designs, establish new groups within it to work on this. So for each aspect they raise opinions to other departments about the needs for the coming period. The chief of production is the representative of the chief engineer in dealings with the department, while the department head handles more concrete work in the department. The department had about 100 employees, and was divided into several groups: design group (shè ji zu), four in all, each designing different parts; calculations group (jisuan zu), which calculates the strength of designed parts, tries to find ways of reducing costs, using less metal if possible. They also want to figure strengths for safety purposes; materials group

(ziliao zu), which handles foreign and domestic technical materials and translations; products testing group (chanpin shiyan zu), which tests the completely assembled machines, these are mostly workers; and the consumers interview group (yong hu fangwen zu), which had 20 or so people who went around saking customers about the quality problems of their products in use.

Technical Department (Gongyi Ke): Several technical groups make up the technical cards. Three groups desing different types of tools. One group sets materials quotas for use in making the parts--materials consumption quotas. One group, the technical testing group, tests out new tooling methods required in diagrams. One group (technical procedures group) studies whether or not new equipment will be needed, and raises opinions about this. The technical department has 120 employees in all, if you include the workers in the engine testing laboratory (gongyi shiyan shi).

Metallurgy Department (Duanye Ke): they handle materials, which in this plant means metals. They have a materials testing group, a materials analysis group (studies the internal structure of metals), the heat treatment group which sets standards for heat treating, and a metal refining group. They have over 100 employees.

The above three are the technically-oriented departments, with which the informant is most familiar. The other departments:

Supply Department: they handle the purchasing of materials, of parts they cannot make themselves, like gauges, water pumps, generators. They also commission other plants (weituo) to make parts they cannot make themselves but cannot buy elsewhere, like rubber rings and gaskets.

Transportation Department: they handle the work of transporting products and materials.

Finance Department--financial management.

Labor and Wages Department: they handle safety procedures, safety equipment, training of workers, assingments and transfer of workers, including new workers. It does not have anything to do with the technical cadres. They are handled by the organization department. The department also handles the testing of workers.

Administration Department: handles the cafeteria, housing, nursuries, kindergarten, and workers' education programs.

This fully restored administrative structure characterizes the factory in the period after 1978 also. But several factories in Shanghai still have not fully restored the previous structures, even in 1980. They are waiting to see how things work out in other plants. Also, there are other methods. Some plants have technical, supply, production groups (zu), and have combined the union with the plant director's office. There is at present no unified form in Shanghai. (We will return to this topic later).

Shop Structure (7/28/80, 3 hrs.)

The main production shops before the cultural revolution : There were three metal shops (jin gong chejian), the first, second, and third metal shops, respectively. They had all kinds of machine tools--lathes, drill presses, mills, grinding machines, gear-cutting machines. They made the parts for the engines. Each of these shops had about 500-700 workers. These are the shops for processing parts.

They had an assembly section (zhuangpei gongduan) in each of these shops, which took the parts made within the shop and built different engines out of them. So each of the three shops contained the entire production process for different kinds of engines.

They had an iron casting shop, and a steel casting shop. The engine blocks were cast of iron, and the other parts of steel. The steel cast

parts were often blanks which needed further processing in the metal shops. Each of these shops had over 1000 workers. They had three shifts. They also had a mold-making shop (mumo) which used wood and sand to cast engine blocks of iron. There was also a cold steel processing shop (lengzuo chejian), which included cold steel rolling, welding, and also a form of cold metal working by pressure called 'bangong'(鈑工). There were about 700 workers in this shop.

These were the main production shops. They also had an electrical power shop, which did repair work on the electrical equipment in the factory, and which also tended the electrical generators. There were about 500 employees there. The tools shop made cutting tools, measuring tools, drill heads, clamps, for the metal work processing shops which cut the parts of steel. There were about 400 workers there.

The heat treatment shop (rechuli) took the parts of cutting tools which had been cut out on lathes and other machine tools and heat treat them to harden them. There were about 200 workers there. The blank shop (maopei chejian 毛坯车间 or xialiao chejian) made blanks from rods and pieces of metal which could subsequently be processed on machines. They had about 100 workers. The standard parts shop (biaozhun jian) put the screw threads on nuts and bolts, and drilled out the engine sockets. Their work has to be done according to national standards for threading. They had about 300 workers.

There were also several auxiliary departments (fuzhu bumen). Tool stores (gongju ku), transportation section (yunshu ke), which included both hauling and truck repair stations. Waste articles warehouse (feipin ku), which broke down waste articles into pieces that can be melted down again or sold as scrap to other plants. They also take iron scraps and filings from the cutting process and press them into a block to be melted down again. There was also a carpentry group and a packaging group. There was a coal and oil management station, and also a fire station (xiaofang zhan).

Shop Leadership

Again, the situation described here applies both before the cultural revolution and after 1977. Each shop had a party branch secretary and 1-3 vice secretaries, depending on the size of the shop. These are the highest leaders in the shop. They can administer punishments to workers. They give ideological education and keep an eye on workers' ideological thought. But they cannot dock wages or fire people.

Below them was a shop director, who sometimes was also the branch secretary or vice secretary. In the past, he had to be at least a party member, and most were old workers who had been promoted, also party members or later, after the cultural revolution, were often members of rebel organizations. Since the Gang of Four fell the situation is different. It is possible for a non-party member, or a university graduate to be a shop director.

Below the shop director was a technical group (or a production service group), a planning group, a statistics and accounting group. Also the section leaders were under his leadership. The technical group is responsible for helping workers to carry out tooling processes properly, according to diagrams. They arrange for the recycling and reprocessing of waste articles. They help workers to use calipers and measuring instruments. Most of these people were graduates of middle school level technical schools. The group leader might be a university graduate, but most university graduates were in the staff departments. Also some were graduates of July 21 workers' colleges. There were about 20 people in the technical group for a shop of about 500 workers. These people spent most of their time walking around the

shops, helping workers. If there was a problem, they would get called on the phone. Their work was fairly difficult, for major problems they had to call different departments to come and help them. For minor problems, they had to go find a tool or handle it themselves. They also do minor repairs, solve quality problems. If they can't solve them, they go look for someone who can. The workers do not spend time running around the factory looking for people--this is their job. They are a bridge between the departments and the workers.

The planning group stays in the office. They set targets for each sectino for each type of part and the date to finish. They have to leave time for heat treating and other things before the pieces go to assembly. They have to assure overall balance of production. Some of these people are old, experiences workers, some earlier had experience in finance work, had graduated from a finance-oriented middle school. They also had to ensure balance between different sections in the shop, and coordinate the work process. Also they had to fill out production reports and send them to the staff departments.

The statistics and accounting groups set time standards for jobs. They figured in actual processing time and time for 'natural needs'--bathroom, rest breaks. These quotas were used to figure whether or not someone should get a bonus for overfulfilling quota. They also told workers whether or not they were doing a good job. They used time standards to decide whether or not a section could finish targets in the given time. The statistics group also fills out original records (yuanshi jilu).

If a worker or a technician comes up with an innovation--a new kind of cutting tool, etc.--which allows them to beat quotas by a wide margin, then the practice is to let them overfulfill their quotas on the first or second batch, then readjust the quotas. If the workers are the ones who come up with an innovation, they usually welcome them. But if it is a technician who thinks it up, the workers might resist it, feel that they just have to work harder and won't be able to get a bonus thereafter. Now in some sections and shops, and also before the cultural revolution, they have piece rates set at a fixed number of cents per hour you beat the time quota. They could make a lot of money doing this. Before the cultural revolution they used a formula proportional to the monthly wage of workers to figure the value of beating the quota. Now they have a fixed amount for all workers. The statistics and accounting group also calculates the monthly wage for workers in the shop.

Under the party branch was also a communist youth league leadership group, a union leadership group, and a women's committee. Only the chairman of the union was a full-time staff member. There were also a few activists in the shop who were given jobs as 'custodians' (zhibao yuan 治保员), they made sure everything was put away and locked up after the shift.

The section leaders were non-production personnel (tuochan), and did only leadership work. They were almost all party members. Each one had 1-2 technicians helping him, but these technicians were from the shop technical group. Below the section leaders were the group leaders.

Changes during the Cultural Revolution in Shop Structure

From about 1968-73 or so, they abolished the sections because they were like the old foremen (gongtou) of the pre-liberation days. The leading group was changed to a revolutionary committee. The planning group at the shop level stayed about the same. A large number of technicians from the design and technical departments were sent to the shops, so the technical groups enlarged, and each shop handled its own design and technical work for its own products. They had this situation until about 1977 when they finally re-established the design and technical departments.

The statistics and accounting group was abolished up through 1977 because there was no bonus, and no quotas were set for workers. They emphasized political thought and class struggle, and if anyone was too slow or did really poor work, they could be criticized. So some were afraid to do too bad a job.

This was the 'sealed off form' (fengbi shi). So there arose coordination problems between shops, while within the shops, between sections and groups, things were fairly well coordinated.

The Planning Process (7/29/80, 3 hrs.)

Each year, in the fall, the plant leaders go to the ministry for planning meetings, where they discuss next year's plans. Often they may be given increases in the number of products over what they produced the previous year. That's not so bad. But what they feared was to have to produce new kinds of engines on a trial basis. That was more trouble, and made the design and technical departments very busy. Old products, no problem.

After the year's plan is known, then the production department gives the responsibility to the shops. The responsibility for new products are given to the design and technical departments, along with dates by which diagrams and technical cards must be finished, when the materials to be used must be planned for. Then the new products finally are given to the shops to produce. If the new products do not require retooling in the metal working shops, then they can do the job quicker, but it is trouble if they have to retool. So they fear new products.

During the cultural revolution they no longer had orders from above to produce new types of products. Each shop thought them up themselves to show their creativity, but many of them were not of any use and it resulted in waste.

When the plan is first set for the plant for the next year, which takes place in the last quarter (fall) of the year, then the office of the chief engineer, which includes also two vice-engineers, and also the chiefs of design (zong sheji shi), chief of technology (zong gongyi shi), the chief of production (shengchan zhang), and also the materials chief (zong duanzhi shi), all meet to discuss the year's plan and give tasks to each of the respective production departments supervised by the four persons listed above. For example, targets and dates for completion of technical cards or designs during the coming year. While these four people in the office of the chief engineer supervise all work, they are not simultaneously department heads).

Then the year's plan is given to the production department, which divides it into quarterly production plans for each shop. The shop, in turn, divides monthly plans for each section.

The shop leadership will build in safety factors. For example, if the quarterly target for a section is 24 machines to finish the shop quota, then they will give it a target of 28 or so, 10 in each of the first two months and 8 in the last. If there is trouble that develops, or some of the machines are rejected, then they still meet the target. If not, then they overfulfill. They do the same for the year as a whole, making the targets in the first three quarters larger than the last, especially since there are several holidays in December for which workers start to ask leave, some in preparation for the spring festival. If they complete all targets, and if the next year the plan does not call for producing any new products, then they are likely to have their quotas increased by a great deal.

The planning group in the shop divides the targets by month to each section. And the production group in the section receives its planned target

from the section. And then the group leader of the production group gives targets to each individual.

The individual quotas for bonuses for quota overfulfillment are set in the shop offices. They divide up production plans by the number of hours in the time period (year or month), and divide the number of pieces in the plan by the number of hours, then come up with time quotas. In setting these quotas you have to be fair, give workers a little slack. If they are too tight, then workers won't bother to work hard. If they are set too low, workers will work very hard to get more money. So you have to give just a little slack, and readjust them as workers learn how to do the operation faster, especially the young workers. You have to be fair, and there are often arguments about this. But to be fair, you have to know the situation on the floor. So the quota setters wander around the shop, try to be unnoticed, and see just how busy the workers are, see if they are leaving a lot of time where they aren't actually working. You have to make sure the workers don't see you or they'll slow down. So these people are always walking around the floor. The time standards do not usually change for one or two years.

When the individual targets (zhibiao) are given to a worker by the group leader, they are in the form of concrete numbers of a certain amount of articles. Then each piece has an assigned time standard (ding e) for each of the products. You multiply the total number of pieces by the time standard and get the total number of hours you have to finish the batch in. If you finish early, you earn the bonus.

This kind of individual target and quota for a bonus--piece rates--only hold in certain shops, like lathes and machine tool shops. For service workers, workers in metallurgy shops, you can't set targets to the individuals, just for groups. In these groups, sections, or shops, the whole group gets a bonus if they finish the group plan.

Plan Completion

The bureau only cares about the yearly plan. It does not give an enterprise more finely divided targets, so they are only worried about the year's completion. The shops are charged with the task of meeting quarterly plans. If they do not meet them, then the shop director has to report ahead of time and explain what the problem is so they can assign the right department staff to step in and help. Technical problems? Equipment problems? Quality problems? You assign technicians from the appropriate department to help solve the problem.

If they just miss one quarter's plan, there's usually no problem because there is a built-in safety factor. But several quarters in a row in a shop means that the year's plan is in jeopardy. Then investigations will be made into the shop's situation. But there is usually no punishment and removal for this. This only happens for political problems, corruption, factionalism (being attacked by another faction in the plant) or lifestyle problems (illicit sex, or 'male-female' problems, for example). If production targets are repeatedly not met, it is usually a technical or planning problem, and the staff departments will then be in trouble, especially the technical department. But not usually the shop director, unless the problem can be laid directly to poor worker activism. There is no bonus for the shop director for meeting the monthly plan. The workers and technicians in the shops can get bonuses for meeting the plan, but not the leaders. But as far as the plant leadership is concerned, it is the quarterly plan that must be met in the shops. The quarterly plan is also operational for the departments as well.

Individuals, production groups and section must meet monthly plans. Sections and groups usually meet their plans unless there is an interruption

in the production process, a machine breakdown, or a quality problem that causes a number of pieces to be rejected. Individuals usually meet their quotas unless they are sick, have quality problems, or their machines break down. If they don't finish, then they don't get the bonus. But the groups and sections usually meet their plans, especially because the levels add a little padding to the targets, so that if they are underfulfilled by just a little it doesn't matter.

This leaves aside the question about other requirements for getting bonuses in the group. For example, if a person suffers an accident and cuts off a finger, as soon as the accident is reported, the person gets accident leave with full pay, but the group loses the bonus for the month. But if he takes sick leave, the group still gets the bonus but the injured worker only gets a certain percentage of the wage depending on the number of years experience he has. So injured persons, if the injury is not too serious, will usually not report, and just take sick leave. Otherwise the group will be considered not to have completed the target for the month, and no bonus.

When they had a bonus system, before the cultural revolution and after 1977, they did not have a situation where it was lax at the beginning of the month and rushed at the end. In fact, in most months, they would start on next months target before the end of the previous month. Workers did not know this, and besides, they got bonuses so they would continue doing work.

But from 1966-76, with no bonus, as soon as workers knew that target was met, they would relax, and not continue working hard because there was no bonus for overfulfillment. Also, there were other factors. You might have to hurry at the end of a month or a quarter if there were problems in production--if machinery breaks down or a quality problem develops--in the middle of the period. So you would have to call in other shops to help you out with machines and technicians, transfer them over. But during the cultural revolution period, once the shops were in their 'sealed off form', you couldn't get machines transfered over, or technicians, and the imbalances in progress of production became more serious because you could not call on other shops to help. Then it was more common to have very busy periods at the end of the month or quarter. In other shops, like the assembly shops, the problem would be that at the beginning of the period they would have to wait for spare parts, so naturally by the end of the period they would be rushed. So production became less balanced during 1967-77.

(We discuss Soviet 'storming' for a while, and the bonuses paid to managers there. He concludes from this:) Since Chinese shop directors and managers do not get bonuses, they don't rack their brains (dong naojin) to handle production. If they fail, it can usually be called a technical problem and then it is not the top leader's responsibility, but the technical department's. Early in the 1950s--around 1952-54, they used a system closer to the Soviet one in his factory. Worker bonuses then could double their wages. But even then,the leading cadres did not get bonuses. It was about the same as it is today.

Changes during the Cultural Revolution

There were no individual time quotas, since there were no bonuses during this period. So instead workers would rely on overtime to increase wages. They would work during the days very slowly, and then get overtime in the evenings or sundays at the end of the period, and they would work harder during the overtime to finish up.

Actually, they still had individual targets, but nobody really checked on their completion, so you could basically say there were none. As for the planning process, the dividing of plans took place not through the office of the

chief engineer and the production department, but through a series of meetings of the Revolutionary Committee which was full of people who were not familiar with how to plan production. So the people handling this system changed, but the basic outline remained the same.

During the cultural revolution targets were set rather low, so people tended to complete them. And if they were completed, they would not be increased by that much for the next year. Informant never heard of any year that was not called a 'rich harvest' by the leaders, as far as meeting targets goes. But profit is a different matter. Often they couldn't sell things and lacked money, went into debt. So the banks would have to lend them money to keep operating. But targets were almost always met--yearly targets, that is. But the serious problem was that they were grasping revolution, not minding production, so they relied on bank subsidies to keep operating. If they met their targets, they would not be increased very much for the next period as they likely would be before the cultural revolution.

Materials Control (7/30/80, 3 hrs.)

After the materials department sets the proper materials to use in producing each part, the materials quota group in the technical department sets quotas for materials use. There is one man in the group that specializes in establishing materials consumption quotas (cailiao xiaohao ding e). The formula for the quota is Volume x Specific density + clamp head + safety number (体积 × 比重 + 料头 + 保险数). The'clamp head' (liaotou) is that part of the piece which they use to clamp on to with the machine tools, in Chinese it is called (jiajin bufen 夹紧部分). The part is cut off after the tooling is completed. The first three components of the formula (excluding the 'insurance' or 'safety' portion for waste, usually around 7-10%), are figured according to the blanks used at the beginning of the process. If they don't figure in the insurance portion, they then run the risk of running out of mateirals and having to stop work and wait for them. For cast parts like engine blocks they use volume measured by displacement of water.

Once these figures are arrived at, they add up the needed amounts of material and report to the chief engineer. He, in turn, notifies the sales and supply department. The above is usually for steel and iron. But there are especially strict controls over silver, aluminum, and copper. They notify the bureau what materials they need and they will try to arrange state supply of the needed materials. But sometimes the bureau would not be able to supply the things, so they would have to go through the back door and get them themselves--exchange products with other plants. This was most common from 1966-76, when supplies were bad. There is less of it now that the supply system is better.

All the materials are kept in warehouses run by the sales and supply department. When they give out materials, they give them out according to the materials consumption quotas. If you need blanks for 100 pieces, they will give you 107. Then the extra insurance pieces are distributed along the various work processes within the shop. For example, it will be allowed to waste three pieces during cutting, 1 during grinding, 2 during case hardening, etc. Every product has a product number, for example diesel engine number 51002, and will have affixed to it a part number /12, etc. The people in the shop planning group order the materials from stores, using these numbers as the key.

If they go over the materials consumption quotas, then they have to order supplementary materials by reporting to the chief engineer that they have wasted a certain amount of pieces. So they ask for supplementary materials (buliao). If individuals waste too many, then they lose their chance for a bonus. And as soon as the worker wastes one, he can't get the 'economy'

(jieyue) bonus. During the 10 years of the cultural revolution, when the shops were in their 'sealed off form', they had materials quotas setters in each shop, instead of in departments, and the rest of the system was basically the same. The shops had 'materials stations' (cailiao zhan) where the shops kept their materials awaiting immediate processing. During the 1966-76 period in their plant they continued to be strict about materials use, but not necessarily all factories did. It just depended on whether you had a good person in charge. During the midst of the cultural revolution, workers would just break into the stores, take out rods and pieces of metal, and made dangerous weapons with them. This was very common. They then used them in armed struggles.

Tools Control

Their factory had a tools department (ke) while some had only a tools shop. Their factory had both the department and the shop. The tools shop was under the tools department, and the department head was shop director of the tool shop.

The department also runs a tool storeroom (gongju canku) and a procurement group(caigou zu), and a technical group. The tool shop makes the tools needed according to specifications of the technology department designs, and after inspection, they put in the tool department's storeroom. The tools that they bought through the procurement group they also put in the tool stores. The ones they bought were cheaper than the ones they made themselves. So they bought tools whenever they could, but the supplies were always tight. But they tried very hard to buy things, their purchasing agents went all over the country. The quality of tools they could buy was also better than they could make themselves.

For each lot of parts to be turned out, the tool department sets a quota of costs to be spent in a shop for tools. After this money is spent at the tool stores, they cannot get any more tools. This is their way of controlling waste and loss of tools. So when the shop goes to the tool stores to order tools, they have to use a 'funds card' (zijin ka). They cancelled this system during the cultural revolution, and only recently restored it. During the cultural revolution they wasted a lot of tools as a result. All they had to do to get materials during that period was sign their names.

For tools made in the plant's own tool shop, they never ahd to use the funds cards, just signed names. They did not return to tools after they got them from the stores, they stayed in the shop's own tool room if they were not broken or lost. There were two storerooms. One was for tools of specialized use (zhuanyong gongju shi), and the other a general use tool room (tongyong gongju shi). Workers are given individual consumption quotas for use of tools. They are given a certain amount of money to be able to break and not return. If they break too many, then they risk losing a bonus. This measure is only used for the universal tools, which are all brought outside. They comprise about 70% of all tools used. The special use tools made inside the plant only account for about 30% of the tools.

Anti-Rightist Campaign and Party Rectification, 1957

Many of the intellectuals and technicians in his factory raised opinions to the Party about the ability of non-experts in the party to lead experts. They were then attacked--quite a number of them--in a rather serious way. Many were sent to labor reform camps, given rightists labels. One engineer he remembers was demoted and made a regular technician. These people were those who had graduated from college both before and after liberation. These people did not have their labels removed until 1979. Now their children are able to attend university again.

Great Leap Forward

They started to make steel in every shop, and carry out technical reforms. Those technical reforms were of a type to allow workers to produce things faster. Few suggestions came from this effort that were of any real use.

People worked very hard, overtime often. But the steel they produced was not up to standard. They ended up wasting materials and manpower. These kinds of technical reforms did not have any scientific basis. At the beginning, there were some reasonable suggestions and production did increase, but after that everyone started making innovations in a wild way and waste occurred.

The slogan was 'more, better, faster, and more economical results' (duo, kuai, hao, sheng), in that order, and that was the way they did it. 'More' and 'fast' is put ahead of 'better' and 'economical'. This is just the way it was. They entered production like it was a war. They didn't stop to rest, didn't stop to assess and readjust and coordinate, so lots of problems appeared, most serious of which was quality. This was a period when people did not think of comprehensive use and this resulted in waste. They thought if waste occurred it wasn't their material but the state's, so that made them not care about wasting things.

Cultural Revolution

Almost all of the cadres stood aside, and went to the shops to do manual labor, some sweeping floors. They said they could run production without the experts, so they were all sent down. The new leaders of production were the technicians who had graduated from technical middle schools (zhong zhuan), and who had a good class background. They were mostly activists in the rebel organization. Later, some were graduates of workers' colleges.

The old cadres mostly did this until about 1972 when Deng Xiaoping came back, when their work was restored to them. When they were first liberated, they usually went back to the technical groups in the shop. Only later did they go back to the departments. But these cadres were very timid then, were afraid of making mistakes, so they didn't want to take responsibilities and risk making a mistake and getting struggled. So their work efficiency was low. This is also because many of them had their wages reduced during this period and had some of their housing space taken away. Even after their work was restored they still were unhappy in their minds about their housing situation they were put into. Not until 1978 or so did they start to completely restore their status and powers.

The old technical department was abolished as was the quality inspection and materials department. They created a 'production leadership department' (shengchan zhihui bu), a revolutionary committee, and a 'Party core leadership group' (dang hexin xiaozu), and a small technical group. They began to restore the departments in 1976, and it was not until 1978-79 that they returned to the previous full administrative structure. One of the results of this is that products did not develop much over 10 years. Since the technical departments were cancelled, they just produced the same engines year after year. There was little technical development.

Another development was that technical experts became very timid and it was very difficult to restore their confidence and get them to take on responsibility. "They still had lingering fears" (xin you yu ji 心有余悸).

Another development which we have already talked about was that shops became 'sealed off', and it became very difficult to coordinate production. This made for an increase in departmentalism (benwei zhuyi), and each shop felt if they finished their own task, they were not concerned with the others. As we have discussed before, this led to reduplication and

waste of manpower, tools, equipment, despite the fact that the shops could turn out pieces faster. Also, they did not grasp quality inspection firmly. The quality inspection department was abolished and each shop was responsible for inspecting its own output, so naturally it became more lax.

(He says after this discussion that he finds these political history topics too complex, and hard to talk about, and adds parenthetically that he also doesn't dare talk about them too much, which might explain his sudden reticence. He adds that after 1957 Chinese people have not dared to talk freely about their own opinions).

During 1967-72 he worked on a grinding machine in a workshop. During that period there was no one to do designing work. They lost all the old plans and designs and had to draw them all over again from the beginning after 1976.

Post 1976 Changes (8/1/80, 1.5 hrs.)

The first thing they did was to restore the bonus system, because worker activism was low. But they have continued right up to the present to look for the most appropriate method. They cannot restore the system to the way it was before 1956 when the bonuses were much larger than they have been since, like in the USSR. They are still looking for a comprehensive and rational bonus system.

Second, they abolished the revolutionary committee in 1978, and reduced the number of people at the top level of administration by about one third, because they were excessive and did not directly handle production work. The people they removed from leadership and cadre positions were the former worker rebel faction members who had moved up into cadre positions. They were followers of the Gang of Four. At this time a lot of them were sent back to whatever jobs they had before the cultural revolution. The head of the revolutionary committee became the plant director, the vice-head of the revolutionary committee the party secretary. This was largely a change of titles only.

Third, they promoted to engineer or assistant engineer those people over 45 who had started work between 1952-56, and who had a technical school (zhong zhuan), technical college (da zhuan) or university education. This is a promotion in name, not in pay. This was to help bring about greater activism, and to make up for so many years of not promoting anyone to engineer. These people often did not have the best of class backgrounds, but were people who had not made any mistakes in their work over the years. The main idea was to make these people feel happier in their hearts after many years of not having raises, and not being trusted because of their background and education.

As far as departments go, they only got rid of the leaders of rebel organizations who had engaged in violent activities (da, za, qiang). They did not get rid of people who had been workers before the cultural revolution but who were promoted to be ordinary department members. They did get rid of all people of that origin in the top leading group, however.

There was another type of leading cadre who was around at the time. There were people that the others called 'opportunists' who survived the cultural revolution and the second purge of Deng, who had been leading cadres all along. They are still in office.

Because of this complex situation some people have suggested democratic elections of leaders. Some units have even carried them out. But up to the time he left in 1980, they had not even begun preparations in his factory. His personal opinion is that unless the incumbent leading group is transfered out of the factory at least temporarily, there can be no genuine elections. Their power and influence is too great to allow for genuinely democratic elections in the factory.

This is a problem. Cadres cannot be removed unless they make a mistake. So there is no way to move capable people up. They are suppressed by those in power, who will not listen to their suggestions, and who view them as rivals. So the current system is a barrier to increasing production. Cadres aren't used to elections, to losing their positions, in China. So it will be hard to carry out elections in China. The losers would use secret plots to get back in power. Even the elections carried out in many factories are false. The people who win are almost always people who were on the leading group before.

Also, after 1977 they restored the quality inspection system fully. They finally re-established the quality inspection department, and increased the powers of the inspection workers. They had to increase quality. Peasants were selling their oxen (niu) for 'iron oxen' (tieniu), but after they got these 'iron oxen' to the farm and started using these tractors it became a 'dead oxen' (siniu). They had to stop this situation. So finally in 1977-78 they restored the inspection department, one of the last departments to be restored, and strengthened the inspection system. And like before the cultural revolution, the quality inspection department head was under the bureau, not the director.

Also, the leading cadres of the plant went on a rotating basis to study a Japanese method of production planning and analysis called 'PDCA' (See Jingji Guanli, Dec. 1979, pp. 44-45). This included the plant director, shop director, plant vice-party secretary, department heads, and a few technicians and engineers. They used work time and studied full time, relieved of their responsibilities temporarily. It was a three month rotating system of education. These were called 'study groups' (xuexi ban). They were taught by two leading cadres from their own plant who had earlier gone to a Peking study group to learn this method. But they are just studying and discussing, and have not yet begun to implement PDCA.

They have not implemented any 'enterprise autonomy' in state run factories in Shanghai. Perhaps in some of the locally run smaller plants (difang guoying), but not in the major ones.

They are also training people in the technical departments to study German, English, and Japanese. They continue to run the July 21 workers' college in their factory, althought now they give workers both entrance exams and graduation exams. If they pass, workers can be made technicians in the factory. During the 1966-76 period, they did not have tests for either entrance or graduation. It is possible that they will soon change the July 21 name of these schools to 'spare-time universities' (yeyu daxue).