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**INFORMATION REPORT INFORMATION REPORT**

**CENTRAL INTELLIGENCE AGENCY**

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COUNTRY Communist China 14 MAR 1967 REPORT NO. [REDACTED] 25X1  
SUBJECT Photographs and Related Text on the DATE DISTR. 16 March 1967  
Shang-hai Film Factory. NO. PAGES [REDACTED]  
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THIS IS UNEVALUATED INFORMATION

SOURCE: Unedited translation of Asia News Service Photos and Features of Chinese Industry, No. 51, 1 September 1965 and the following publications: Jianzhu Xuebao, No. 10, 1964; Chinese Photography, No. 4, 1964; Kuang-ming Jih-pao, 25 September 1964; China Pictorial, No. 7, 1965; China Reconstructs, No. 9, 1965.

The photographs listed below are obtainable from Graphics Register by CIA Photo Accession number. They were reproduced from Hsin-hua News Agency photographs as well as the open source publications cited above.

The unedited translation of Photos and Features of Chinese Industry discusses the first film base plant domestically constructed in China. The plant became operational on September 10, 1964. It produces transparent sensitized blue film for movie, x-ray and photographs (including model 120 Brownie-type film). The text is on file in the CIA Library and is unclassified when detached from the report.

CIA Photo Accession No.:

	<u>Shang-hai Film Factory</u>
1032072, 1032638, 1076147	Exterior of the new film base plant.
1049002	Cellulose Section.
1066082, 1076148	Film Base Workshop.
1076146	Film Coating Shop.
1077256	Trade mark and packaging of the "Shanghai" brand 35mm film.
1077259, 1077260	Processing 35mm and 120 film in Film Base Shop.

Enclosure: As stated above

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BRIGHT OUTLOOK FOR THE CHINESE SENSITIZED  
MATERIALS INDUSTRY WITH THE COMPLETION OF THE FIRST  
FILM BASE PLANT

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Source: Chugoku Sangyo Shashin Tsushin (Photos and Features on Chinese Industry), No 51, 1 September 1965, pp 1-9.

On 10 September 1964, the very first modern film base plant blue-printed and set up by China itself officially started operations. For the construction of this plant, over 40 plants of the various industrial branches of Shanghai have pooled their efforts to manufacture the equipment, to fully promote the combined strength of three kinds of people: the leading cadres, the technicians and the workers. Moreover, by carrying out an exemplary revolution in blueprinting the construction of bases that have been greatly expanded since last year, they have succeeded in building a plant appropriate ~~to~~ to the conditions of China, requiring little capital and building space and yet of very fine quality. All aspects of the ~~construction~~ construction have received a great deal of attention and thus, the new plant means a great deal in the development of the sensitized materials industry of China. Hereunder, we would like to review the present state of ~~the production of films in~~ film production in China as centered around the construction of this new plant.

Beginning of Film Manufacture After the  
Great Leap Forward

Before Liberation, there was no sensitized materials industry in China whatsoever. Before the Great Leap Forward, in 1958, several small plants producing photographic paper in Shanghai were pooled to make the Shanghai sensitized film workshop. The ~~new~~ very first plant was located <sup>where</sup> the former carbon paper plant was and had a worker population of 100 only. To apply highly sensitive emulsion, the workers improved upon the equipment, fabricating such instruments as stainless tubs and cooling, drying, and cutting equipment. Besides experimenting over and over with ~~rudimentary~~ rudimentary equipment, they finally succeeded in manufacturing the first "Shanghai mark" films. After this success, ~~production~~ <sup>and till</sup> the end of

1959, they kept on expanding the plant, and continuously discovered many automatic applicators for three years during, installing in the meantime accessory equipment such as cooling equipment, ventilating equipment, and boilers. Together with the improvement of the equipment, the plant also expanded the number of film varieties, bettered their quality, selling them everywhere in China.

At the same time that the Shanghai sensitized film workshop was erected, up to the end of 1959 in the whole of China there were built more than ten sensitized materials plants. For instance, the Paoting Film Manufacture ~~Work~~ Workshop ~~was~~ started construction in July 1958, and ~~was completed during the first quarter of~~ the first stage of construction was completed in 1960. This workshop planned to produce annually 330,000,000 meters of black-and-white ~~movie film, of color film~~ and color movie film, of X-ray film and of photographic film. ~~At~~ At the end of 1958, the Tientsin Camera ~~Workshop~~ Workshop saw its renovation works completed, planning to produce 2,400,000 square meters of X-ray and other films during 1958.

#### National Production, A Necessity Forced Upon China by the Stopping of the Import Flow

Thus, by 1959, though the Chinese had succeeded in producing color films, they still had to rely on foreign import for the film bases. In 1960, the modern revisionists completely stopped ~~the~~ providing movie ~~film~~ film to China. Before that, some countries had offered to help China construct a film base plant, but then they had broken their promises and recalled their specialists, cancelling their assistance program.

To remedy this situation of dependence upon foreign countries and to supply China ~~with its own~~ out of its own efforts, the Chinese government decided in the second part of 1962 to build a film base plant at the Shanghai sensitized film workshop, charging the Shanghai Light Industry Blueprinting ~~Institute~~ Institute with the blueprinting of the plant.

Film base is a quite precise chemical industrial product, it must be strong when stretched out and not break (Movie films ~~xx~~ get projected over 600 times each), it must be smooth (not more than 1/12 of 70 microns: this is how small the differences in thickness can be allowed, that is just by a hair breadth), it must be ~~perfectly~~ even (there should not be a whit of dust or air bubble). Besides all these ~~characteristic~~ characteristics, it also requires a ~~very~~ relatively high degree of production processing and sophisticated auxiliary ~~equipment~~ equipment since the solvent is inflammable and poisonous. This makes it that in the "three new" (new manufacture, new processing, and new equipment), the Chinese are up to excessive difficulties owing to the fact that they do not have the technical means, the manpower needed and especially the experience required.

The situation, however, ~~did not~~ did not allow of any hesitation. The blueprinters adopted and promoted a revolutionary spirit, broke down many limits, got the cooperation of various branches dealing with construction planning, manufacture, processing, installations, and scientific research: ~~the~~ they overcame<sup>ed</sup> the difficulties one by one and completed the new plant in a splendid manner.

#### Completion In A Little Over A Year

The time it took to blueprint the plant was exceedingly short: the preliminary blueprint for expansion was completed in 68 days and the execution plan within six months. It took no more than one year and a half to go from the determination of the plant site to the construction of the whole plant, ~~the~~ and even the production of manufactured goods in accordance with ~~specification~~ specifications, ~~Altogether it took three years~~ Up to ~~now~~ now, it used to take three years generally for the construction of something on a similar ~~xxx~~ scale of investment as the present plant to be completed, and of the three years one year and a ~~half~~ half would have been needed for the blueprinting of the project.

This plant has to a certain degree been modernized, its production operations ~~mechanized~~, it is also equipped with devices for the prevention of explosions and of dust as well as ~~with~~ for keeping the same temperature and degree of humidity within the plant (amounting to over 300 pieces of equipment altogether). Yet investment in capital construction amounts to relatively little and the site available is not so large either. Production officially started in 1964 only, yet the quality of the manufactured goods already reaches the level of foreign products, or at least approaches that level. The arrangements made for the whole construction ~~have been~~ works have been made in a ~~very~~ practical and solid manner, leaving no problems ~~or corrections~~ or corrections to be made in regard to execution or installation of equipment. The construction planning department was also very happy with the blueprint. As for the quality of the works, it has been given a certificate of excellence by the State Control Commission.

#### Breaking Away From Foreign Blueprints and ~~Looking~~ Blazing the Way for One's Own Conception

The Shanghai Light & Industry Blueprint Institute worked on the ~~sensitized film plant~~ blueprint of the sensitized film plant for about three times. The first two times were wholesale copying from foreign blueprints, never surpassing the stage of preliminary blueprinting. In ~~the~~ the last ~~blueprint~~ blueprint, ~~they~~ they had to wrestle immediately with the question of working within the framework of foreign models. Consequently, earnestly learning from experiences contrary to the ~~xxx~~ correct ones found in foreign blueprints, they suc-

ceeded in putting them to good use, refraining from putting blind faith in the foreign blueprints, working from the realities of China and plotting China's own original road.

If one is to follow the foreign blueprints, there must be "imposing" entrances, wide pathways, green areas, and high-standard welfare facilities, etc. But here, in following the maxim of building the country in an economical manner and the directives from the leadership, they decided not to do anything whatsoever that would be alien to the masses such as a large main entrance to the plant, they also decided not to build anew ~~the~~ any administrative or ~~welfare~~ welfare facilities, improving and remodeling instead in a practical and economical manner ~~the~~ the shrine ~~that~~ ~~ready~~ ~~was~~ ~~there~~ ~~before~~, the simple warehouses, and the people's ~~the~~ dwellings that already were there before to make them into the offices of the new plants, etc. Also as far as the stipulations regarding the prevention of fire and explosions are ~~concerned~~ concerned, there are many among those set up for foreign blueprints that do not agree with the ~~situation~~ concrete conditions of China. Should one decide to follow them all, one would need a great deal of land. After studying the questions over and over, the blueprinters ~~discovered~~ finally discovered ways of doing in agreement with the conditions of the present site, economizing on the fire and explosion prevention expenses and saving also ~~on~~ a great deal on a lot of land. As a result, the arrangement of the whole film base plant went very finely and rationally and by comparison with ~~the~~ works of the same format as ~~foreign blueprints would require~~ required by foreign blueprints, it can do without a great deal of land ~~and~~ while saving enormously on the investment of capital.

In the film base plant, there ~~are~~ <sup>is a</sup> processing departments for nitro-cellulose and film-laying materials. If we were to go by foreign blueprint stipulations, ~~the~~ this processing room would have to be maintained at a room temperature of ~~20°C~~ 26-28°C during the summer. This requirement is determined, however, on the basis of foreign ~~climate~~ temperatures. Shanghai's summer temperatures being much higher than those of foreign countries, one would have to install a great deal of refrigeration equipment if one were to mechanically introduce this stipulation. The blueprinters consequently based themselves on the concrete conditions of Shanghai to draw up the blueprint and while keeping to the principle of guaranteeing the quality of manufactured products, they rationally improved upon the stipulation. As a result, they succeed in doing away with a great deal of refrigeration equipment and installations.

During the production process, there is also required the use of a three-level piston corrosion pump--this is according to foreign data--but then, this pump is too bulky and heavy, requiring a great deal of wood, of complicated ~~and~~ construction, of high costs and besides, ~~which~~ ~~is~~ not very easy to manipulate. The blueprinters ~~went~~ went to

work for nearly a month in the plant and together with the workers, they experimented fourteen times to gather 169 data, then aided by nine machine factories, they finally succeeded in blueprinting and manufacturing on an experimental basis a new format of pump. This new pump proves to be superior to the three-level piston corrosion pump while its weight is 45 percent lighter, allowing an economy of 46 percent on the electric power needed. The cost of manufacture of one such pump only comes to one sixth of the three-level one.

#### Learning From the Realities of Production and From Scientific Experiments

To solve a whole series of technical difficulties in the equipment and blueprinting, the ~~from~~ following four methods have been followed:

First, to use the results of experiments at the Shanghai Sensitized Film Workshop in the last few years.

Second, to perform scientific experiments with the ~~with~~ help of fifteen plants and scientific research units.

Third, to send blueprinters to related worksites and investigate their equipment.

Fourth, ~~to~~ to use technical data from both within and without the country, compare them and analyze them to find out one's own way of drafting the blueprint.

In the process of setting up the blueprint, the blueprinters have carried out relatively extensive investigations and research, experiments and surveys, mobilizing altogether 451 persons, making inquiries to 303 persons in 159 units, collecting and rectifying 78 volumes of data. Moreover, with the close assistance of ~~fifteen~~ fifteen plants and scientific research units, they wrestled with seven key points, ~~from~~ formed 22 experiments, determined 30 parameters regarding the ventilation of the film-laying process, the temperature level and pressure, etc. They also solved a series of complicated problems such as air-conditioning, the prevention of dust, the supply of nitrogen, and the protection against explosions.

Thus, of the 300-odd pieces of equipment found in the plant, except for an imported piece that lies unused in the warehouse, everything is made in China. ~~Altogether~~ Altogether there are 55 kinds of special use equipment designed by the Shanghai Light Industry Blueprinting Institute accounting ~~for~~ for 122 pieces of equipment found in the plant.

Solution of Many Difficulties Through Investigations  
and Research

At the plant there are framed accelerated pressure filters that are generally made out of stainless steel in foreign countries, but then stainless steel is not only hard to get in China, it also costs a great deal. After investigation, the blueprinters did not think that one necessarily had to use stainless steel, consequently they thought of finding a new material ~~kind of wood~~ to replace the stainless steel. Together with the Shanghai City Light Industry Scientific Research Office they worked ~~and overcame~~ ~~various difficulties~~ for over a month and overcame various difficulties, experimenting with tens of anti-rust metallic materials. ~~With the help of~~ They finally succeeded with the help of the Shanghai Casting Research Office ~~with~~ the use of an ~~aluminum~~ aluminium alloy. By the time this aluminium alloy framed accelerated pressure filter was designed and manufactured, it was found to be superb during the experimental stage.

In the production of film base, there is a stage where acetic acid fibers are pretreated. According to foreign blueprints, this process would involve breaking by hand and drying in the drying room, requiring the workers to work intensely and yet giving only a poor efficiency. The blueprinters consequently decided to build a new equipment and renovate the processing method used up to now. They decided to learn from everywhere, ~~improving~~ making inquiries to nine plants, surveying 20 technical data, collecting charts and involving 25 persons struggling for 18 days to finally succeed in the design of an acetic fiber breaking and drying combine, mechanizing the hand process.

At the film-laying department in the main building of the plant, the precipitation ~~discrepancy~~ discrepancy is not supposed to surpass two centimeters, there is supposed to be no cracks. But the geological makeup of the ~~plant~~ plant site is extremely bad and several buildings newly constructed on this site all ~~have~~ get cracked. Thus, capital construction in this case represents a technical difficulty by itself. The blueprinters therefore looked around, made ~~inquiries~~ inquiries, asked for advice, investigated and discussed the questions, they carried out on-the-spot investigations, ~~interviewed~~ visited with nine units, investigated 12 buildings, investigated about the geological makeup and the design data to find out clearly about the reasons for the cracks. Finally after taking various measures, they solved the problems.

Manufacturing Equipment Before Schedule by Three  
Kinds of Combinations With Wide Assistance

Many a piece of equipment of the film base plant have been manufactured at the Shanghai Ta-ming Iron Workshop. This plant having been ~~a~~ the combined facilities of two ~~handicraft cooperatives and cooperative~~ small handicraft cooperatives, one dealing with electric welding and

the other with metalworks, the workers ~~at~~ there number only 200 persons with ~~no~~ no modern machinery or building at their disposal. These workers, however, operate with small machines to manufacture much larger parts by the method of laboriously proceeding little by little ~~in~~ in case there is no large machines available. In the manufacture of two-layer ~~pipelines~~ heat exchange pipes, for instance, the large-size steel pipes are supposed to be bent into U shapes without folding creases or bumps, which is something impossible according to foreign literature. Nonetheless, the leadership of the plant, the technicians and workers wrestled with the problem of manufacturing ~~them~~ without the benefit of pipe bending machines and finally found a method. It is this small plant that provided the film base plant with 80 percent of its needed equipment, producing everything in accordance with ~~stipulated~~ specifications and in time.

45 ~~per~~ plants in Shanghai ~~provided~~ manufactured equipment for the film base plant but on some complicated machines, nine plants have cooperated to manufacture them. To supply the machinery ~~in~~ according to plan, these plants have ~~created~~ formed an "assembly line." ~~Once~~ Once ~~each~~ part ~~thing~~ is completed by one plant, it is immediately sent to the next. <sup>for</sup> The Second Textile Machine Workshop which undertook ~~the~~ to complete the final assembly to start production as fast as possible, the jobs have been executed in the most urgent manner at the other plants. The workers worked overtime and ~~in 1962~~ so, on New Year's Eve, 1963 the various kinds of machinery were brought into place for installation.

#### Even Blueprinting Methods Stop Being Copies of Foreign Models, Learning Instead From Parallel Intersecting Enterprises

Up to now, even the blueprinting methods have been mechanically imported from abroad. Because of this, every step in the blueprinting process had been ~~strictly~~ strictly adhered to, once the first step is not done, the second step necessarily does not get implemented. Among the various specialized departments, it is very strongly stressed that they should not design things on their own when there is no models available and that even should they be able to do so, they must wait while the procedures found in foreign literature are never changed even though for a bit.

The blueprinting of the film base plant has been done in extreme urgency, and that is why, the execution of the blueprint, manufacturing and installation of equipment had to be done almost at the same time as the blueprinting. The situation made it that it had to take advantage of ~~these~~ the methods of parallel and intersecting enterprises.

As far as the various stages are concerned, they are prepared as much in advance as possible ~~while the conditions for the next~~, providing the conditions necessary for the next stage. Since it is impossible to



draw up preliminary blueprints for expansion without having a definite construction site, five sites were investigated in a dash during a mere period of 20 days. Once the site has been decided upon, the questions of blueprinting principles were made clear and the preliminary blueprints for expansion were worked out at top speed. With the completion of the blueprints, work was immediately started on the execution charts of the solvent tank and pump~~s~~ site that is not subject to many restrictions, without even waiting for the final decision on the expansion blueprints. The very day the ~~exp~~ expansion blueprints were accepted, the first execution charts were sent to the work site.

With regard to relations ~~with~~<sup>among</sup> various specialized fields, things have been sped up because of ~~mutual assistance~~ and the promotion of mutual assistance and activeness, common discussions and immediate undertaking. For instance, up to now everything used to be designed one after another whether it is the processing method, ventilation or refrigeration, taking over a month each. But now, right from the beginning things ~~are~~ get executed while the discussions were taking place, which is why by the time the processing chart ~~is~~ completed, the ventilation and refrigeration plans would also be completed. Consequently, the blueprinting process ~~gets~~ got shortened to over half the time as compared with up till now.

As far as relations between superior and inferior echelons are concerned, promotion of ~~technical~~ democracy in technical branches has been stressed and should they be dealing with important questions, they would call a "three combination" conference so as to study and solve these questions together.

In relations with outside plants, they did not wait for the technical materials gathered by the Construction Planning Department to circulate and come around, they ~~pass~~ positively search for them by their own efforts. In regard to the order ~~of~~ of charts to be fulfilled, they made it a point to meet the demands of processing and manufacturing as much as possible. Thus, when the charts were handed ~~over~~ over in a bunch, the processing and manufacturing departments could ~~complete~~ carry them out in a hurry. Once they were through, they would be ~~passed on to the next~~ handed the next batch. And again, they would complete these. Thus, the blueprinting, execution, manufacture and installation processes all advance one another; whether the room is completed or not, the equipment would still be installed, or the roof and floor are being worked on, the equipment would still be installed in one corner, and thus from the beginning to the end, the speed of construction has been improved quite a lot.

#### Remaining Blueprinting Deficiencies

The blueprinting of the film base plant was very successful, yet it was not totally devoid of deficiencies and problems. The Shanghai

Light Industry Blueprinting Institute has described these shortcomings and ~~the~~ problems in the following manner:

Generally speaking, by comparison with the standard film base plant of progressive foreign countries, the present plant does show a definite lag behind, which is not in any way near catching up. The destruction of restrictions that must be wiped out has not yet been done exhaustively and in some points, in some places, there is still the phenomenon of importing wholesale foreign models. For instance, the indicator of the film-laying department represented a carbon copy of foreign standards and consequently had to be rectified three times to get fixed, representing so much duplication and waste. In depth and in the order of blueprinting, there still remain troublesome procedures and thus 28 percent of the process pipeline installation charts did not even get used. Investigation and research sometimes are not adequate, the blueprinting not in accordance with reality, and the execution of works at some specialized departments careless, creating several problems. For instance, the investigation of water sources was botched and thus there was not enough water, the selection of the automatic controller did not correspond with reality, mistakes and oversight within the blueprints themselves were also by no means rare. Some blueprint criteria get overblown, and ~~explicated~~ a great deal of capital ~~in~~ investment can still be saved. For instance, the capacity to treat river water can be many times more than the actually needed level.

#### Bright Future for the Sensitized Materials Industry

Thus, the film base plant of the Shanghai Sensitized Film Workshop is responsible for the equipment, manufacture, installation and even the earth work as designed by the ~~Shanghai~~ Shanghai Light Industry Blueprinting Institute, a branch of the Ministry of Light Industry. Forty-five plants ~~altogether~~ altogether from the departments of ~~lighting light industry~~ light industry, machinery, electric machinery, survey, textile industry and chemical industry manufactured equipment and completed the expansion plant in a short period of over a year on the basis of ~~an~~ assistance and cooperation in every respect. In April 1964, the ~~new~~ new plant started ~~experimental~~ ~~production~~ production on an experimental basis and the very first products were used as movie film ~~in~~ in such pictures as "Young ~~Lu~~ Lu Pan" and "Big Li, Small Li and Old Li" produced by the movie printing plants of Peking and Shanghai and recognized to be of good quality ~~by~~ after assessment by related units. Since ~~starting~~ officially starting production, ~~the~~ the plant has continually produced transparent or light blue film base which is then sent to various parts of China as photo film, movie film or X-ray film.

In June 1965, ~~xx~~ because some poor material ~~xx~~ was mixed in a supply of Model 120 roll~~s~~ film (Brownie size) produced by the Shanghai Sensitized Film Workshop, the 50,000 rolls that were sent to Peking were ~~sent~~ all

~~not~~ taken back, it was reported. As this is because there was fingerprint and traces of adhesive tape on the films, the plant has taken advantage of this to improve upon the packing of films, the processing conditions, even the control which was applied to five rolls out of every 400 before is now reduced to five rolls out of every one hundred. The Model 120 films produced by the Shanghai Sensitized Film Workshop are shown on sale all over China and recently ~~increasingly~~ their quality has improved thanks to this affair.

Besides this plant, the Kwangtung Kung-yuan Photographic Chemistry Workshop in 1965 succeeded in producing on an experimental basis strong, middle and ~~soft~~ soft-tone films used in printing (~~panchromatic~~ panchromatic and orthochromatic) that used to be imported altogether. Also, recently there have been produced everywhere in China printing paper for photocopying, which industry is being widely propagated. Thus the sensitized materials industry of China seems to be developing with leaps and bounds in the future. The people connected with the blueprinting of the film base plant described ~~above~~ above have ~~been~~ for the most part been post-1960 school graduates, and the workers who have grasped the production techniques of film base are ~~on~~ on the average 25-year old youths raised at the plant itself. This fact alone warrants a great deal of expectations as to the future development of the branch.

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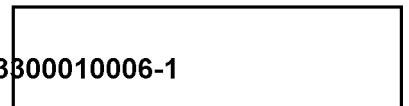
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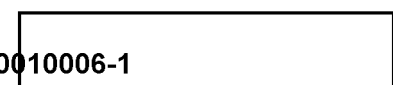
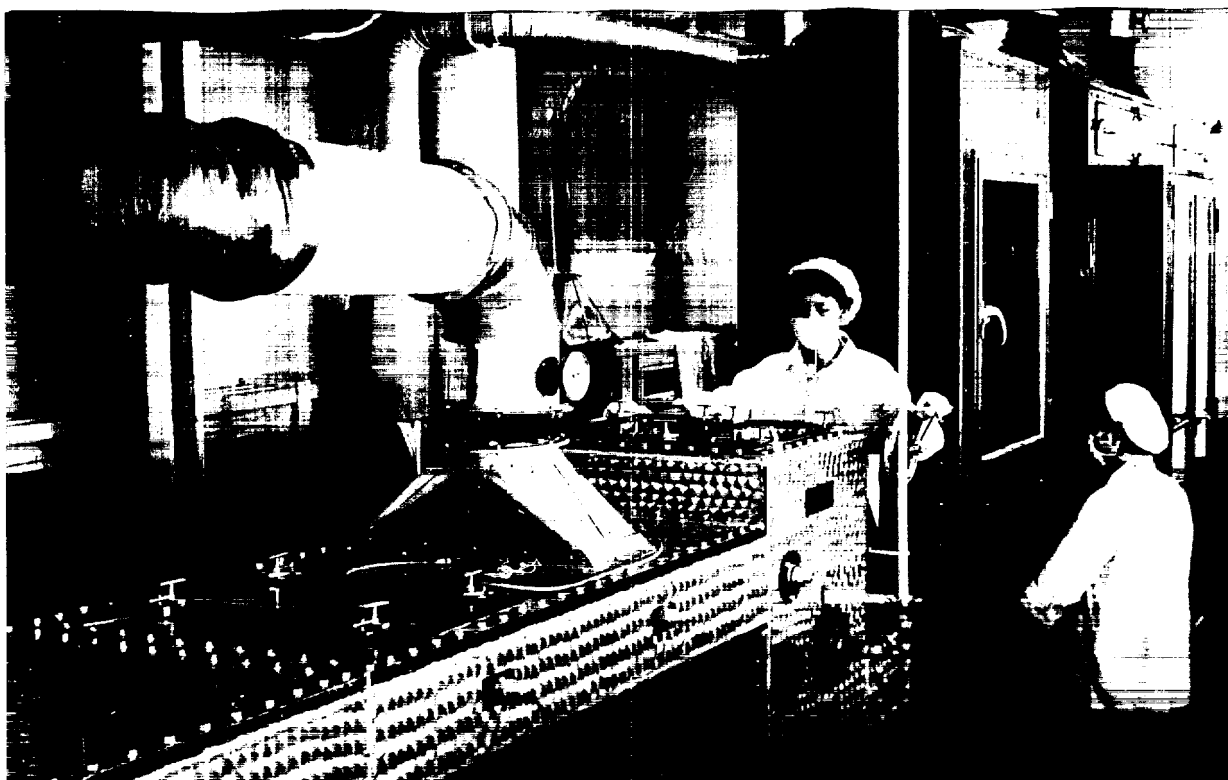
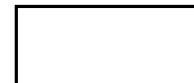


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Packages of "Fei-t'ien-nu" printing paper.

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Film Base Shop of the Shanghai Sensitive Film Plant, which was constructed in 1959 and began operating formally in early 1960. Film base for 35 mm film, 120 (brownie) film and sheet film is being processed here.

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CHINA WAC 492A SHANGHAI 31 14 N 121 28 E  
Shanghai Film Fty. Processing 35mm and 120 film in film Base Shop.

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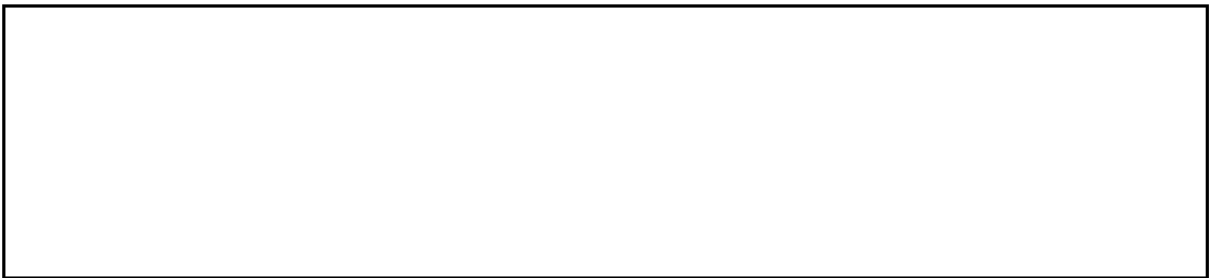
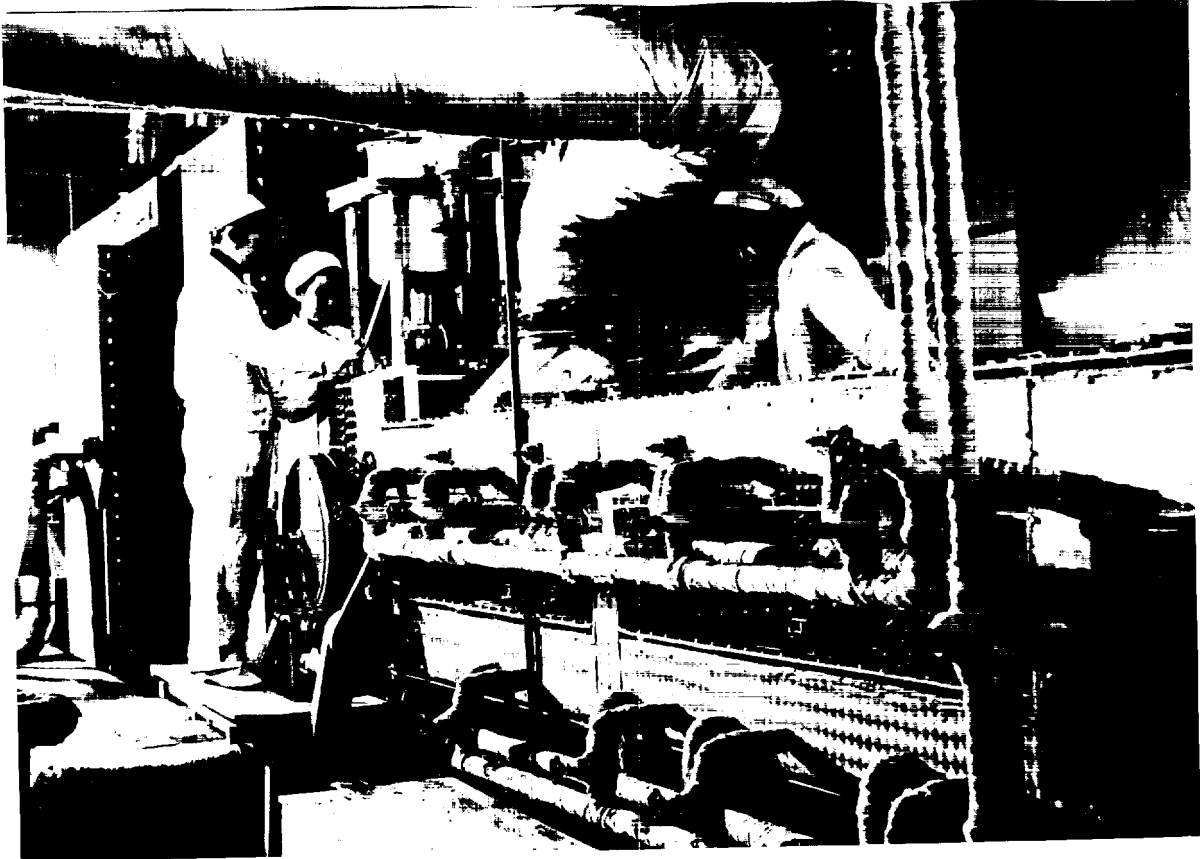
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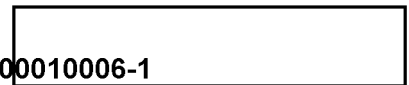


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CHINA WAC 492A SHANGHAI 31 14 N 121 28 E  
Shanghai Film Fty. Processing 35mm and 120 film in Film Base Shop.

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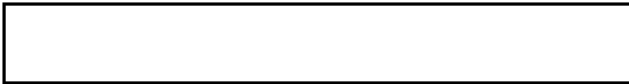
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The Film Base Shop of the Shanghai Sensitive Film Plant was constructed in 1959 and began operating formally in early 1960. It is engaged in the processing of film base for 35 mm film, 120 (brownie) film and sheet film. This photograph shows one corner of this shop.

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CHINA WAC 492A SHANGHAI 31 14 N 121 28 E  
Shanghai Film Fty. "Shanghai" brand 35mm film.  
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"Shanghai" brand 35 mm film, a product of China.

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BRIGHT OUTLOOK FOR THE CHINESE SENSITIZED  
MATERIALS INDUSTRY WITH THE COMPLETION OF THE FIRST  
FILM BASE PLANT

Source: Chugoku Sangyo Shashin Tsushin (Photos and Features on Chinese Industry), No 51, 1 September 1965, pp 1-9.

On 10 September 1964, the very first modern film base plant blueprinted and set up by China itself officially started operations. For the construction of this plant, over 40 plants of the various industrial branches of Shanghai have pooled their efforts to manufacture the equipment, to fully promote the combined strength of three kinds of people: the leading cadres, the technicians and the workers. Moreover, by carrying out an exemplary revolution in blueprinting the construction of bases that have been greatly expanded since last year, they have succeeded in building a plant appropriate ~~to~~ to the conditions of China, requiring little capital and building space and yet of very fine quality. All aspects of the ~~construction~~ construction have received a great deal of attention and thus, the new plant means a great deal in the development of the sensitized materials industry of China. Hereunder, we would like to review the present state of ~~the sensitized materials industry of China~~ film production in China as centered around the construction of this new plant.

Beginning of Film Manufacture After the  
Great Leap Forward

Before Liberation, there was no sensitized materials industry in China whatsoever. Before the Great Leap Forward, in 1958, several small plants producing photographic paper in Shanghai were pooled to make the Shanghai sensitized film workshop. The ~~new~~ very first plant was located at the former carbon paper plant and had a worker population of 100 only. To apply highly sensitive emulsion, the workers improved upon the equipment, fabricating such instruments as stainless tubs and cooling, drying, and cutting equipment. Besides experimenting over and over with ~~rudimentary~~ rudimentary equipment, they finally succeeded in manufacturing the first "Shanghai mark" films. After this success, spanning to the end of



1959, they kept on expanding the plant, and continuously discovered many automatic applicators for three years during, installing in the meantime accessory equipment such as cooling equipment, ventilating equipment, and boilers. Together with the improvement of the equipment, the plant also expanded the number of film varieties, bettered their quality, selling them everywhere in China.

At the same time that the Shanghai sensitized film workshop was erected, up to the end of 1959 in the whole of China there were built more than ten sensitized materials plants. For instance, the Paoting Film Manufacture ~~Work~~ Workshop ~~was~~ started construction in July 1958, and ~~was completed during the first quarter of~~ the first stage of construction was completed in 1960. This workshop planned to produce annually 330,000,000 meters of black-and-white ~~movie film, of color film,~~ and color movie film, of X-ray film and of photographic film. ~~At~~ At the end of 1958, the Tientsin Camera ~~Work~~ Workshop saw its renovation works completed, planning to produce 2,400,000 square meters of X-ray and other films during 1958.

#### National Production, A Necessity Forced Upon China by the Stopping of the Import Flow

Thus, by 1959, though the Chinese had succeeded in producing color films, they still had to rely on foreign import for the film bases. In 1960, the modern revisionists completely stopped ~~the~~ providing movie ~~film~~ film to China. Before that, some countries had offered to help China construct a film base plant, but then they had broken their promises and recalled their specialists, cancelling their assistance program.

To remedy this situation of dependence upon foreign countries and to supply China ~~with its own~~ out of its own efforts, the Chinese government decided in the second part of 1962 to build a film base plant at the Shanghai sensitized film workshop, charging the Shanghai Light Industry Blueprinting ~~Institute~~ Institute with the blueprinting of the plant.

Film base is a quite precise chemical industrial product, it must be strong when stretched out and not break (Movie films ~~xx~~ get projected over 600 times each), it must be smooth (not more than 1/12 of 70 microns: this is how small the differences in thickness can be allowed, that is just by a hair breadth), it must be ~~perfectly~~ even (there should not be a whit of dust or air bubble). Besides all these ~~characteristic~~ characteristics, it also requires a ~~xxx~~ relatively high degree of production processing and sophisticated auxiliary ~~equipment~~ equipment since the solvent is inflammable and poisonous. This makes it that in the "three new" (new manufacture, new processing, and new equipment), the Chinese are up to excessive difficulties owing to the fact that they do not have the technical means, the manpower needed and especially the experience required.

The situation, however, ~~was not~~ did not allow of any hesitation. The blueprinters adopted and promoted a revolutionary spirit, broke down many limits, got the cooperation of various branches dealing with construction planning, manufacture, processing, installations, and scientific research: ~~this is how~~ they overcame the difficulties one by one and completed the new plant in a splendid manner.

#### Completion In A Little Over A Year

The time it took to blueprint the plant was exceedingly short: the preliminary blueprint for expansion was completed in 68 days and the execution plan within six months. It took no more than one year and a half to go from the determination of the plant site to the construction of the whole plant, ~~the~~ and even the production of manufactured goods in accordance with ~~specification~~ specifications, ~~although the work took three years~~ Up to ~~then~~ now, it used to take three years generally for the construction of something on a similar ~~size~~ scale of investment as the present plant to be completed, and of the three years one year and a ~~little~~ half would have been needed for the blueprinting of the project.

This plant has to a certain degree been modernized, its production operations mechanized, it is also equipped with devices for the prevention of explosions and of dust as well as ~~with~~ for keeping the same temperature and degree of humidity within the plant (amounting to over 300 pieces of equipment altogether). Yet investment in capital construction amounts to relatively little and the site available is not so large either. Production officially started in 1964 only, yet the quality of the manufactured goods already reaches the level of foreign products, or at least approaches that level. The arrangements made for the whole construction ~~works~~ works have been made in a ~~very~~ practical and solid manner, leaving no problems ~~or corrections~~ or corrections to be made in regard to execution or installation of equipment. The construction planning department was also very happy with the blueprint. As for the quality of the works, it has been given a certificate of excellence by the State Control Commission.

#### Breaking Away From Foreign Blueprints and ~~Looking~~ Blazing the Way for One's Own Conception

The Shanghai Light & Industry Blueprint Institute worked on the ~~sensitized film plant~~ blueprint of the sensitized film plant for about three times. The first two times were wholesale copying from foreign blueprints, never surpassing the stage of preliminary blueprinting. In ~~the~~ the last ~~blueprint~~ blueprint, ~~they immediately~~ they had to wrestle immediately with the question of working within the framework of foreign models. Consequently, earnestly learning from experiences contrary to the ~~the~~ correct ones found in foreign blueprints, they suc-

ceeded in putting them to good use, refraining from putting blind faith in the foreign blueprints, working from the realities of China and plotting China's own original road.

If one is to follow the foreign blueprints, there must be "imposing" entrances, wide pathways, green areas, and high-standard welfare facilities, etc. But here, in following the maxim of building the country in an economical manner and the directives from the leadership, they decided not to do anything whatsoever that would be alien to the masses such as a large main entrance to the plant, they also decided not to build anew ~~any~~ any administrative or ~~welfare~~ welfare facilities, improving and remodeling instead in a practical and economical manner ~~the~~ the shrine ~~and~~ ~~ready-made~~ ~~warehouses~~, the simple warehouses, and the people's ~~and~~ dwellings that already were there before to make them into the offices of the new plants, etc. Also as far as the stipulations regarding the prevention of fire and explosions are ~~concerned~~ concerned, there are many among those set up for foreign blueprints that do not agree with the ~~concrete~~ concrete conditions of China. Should one decide to follow them all, one would need a great deal of land. After studying the questions over and over, the blueprinters ~~discovered~~ finally discovered ways of doing in agreement with the conditions of the present site, economizing on the fire and explosion prevention expenses and saving also ~~in~~ a great deal on a lot of land. As a result, the arrangement of the whole film base plant went very finely and rationally and by comparison with ~~the~~ works of the same format as ~~foreign blueprints~~ required by foreign blueprints, it can do without a great deal of land ~~and~~ while saving enormously on the investment of capital.

In the film base plant, there are processing departments for nitro-cellulose and film-laying materials. If we were to go by foreign blueprint stipulations, ~~this~~ this processing room would have to be maintained at a room temperature of ~~26-28°C~~ 26-28°C during the summer. This requirement is determined, however, on the basis of foreign ~~climate~~ temperatures. Shanghai's summer temperatures being much higher than those of foreign countries, one would have to install a great deal of refrigeration equipment if one were to mechanically introduce this stipulation. The blueprinters consequently based themselves on the concrete conditions of Shanghai to draw up the blueprint and while keeping to the principle of guaranteeing the quality of manufactured products, they rationally improved upon the stipulation. As a result, they succeed in doing away with a great deal of refrigeration equipment and installations.

During the production process, there is also required the use of a three-level piston corrosion pump--this is according to foreign data--but then, this pump is too bulky and heavy, requiring a great deal of wood, of complicated ~~and~~ construction, of high costs and besides, ~~is~~ ~~not~~ ~~very~~ ~~easy~~ ~~to~~ ~~manipulate~~. The blueprinters ~~went~~ went to

work for nearly a month in the plant and together with the workers, they experimented fourteen times to gather 169 data, then aided by nine machine factories, they finally succeeded in blueprinting and manufacturing on an experimental basis a new format of pump. This new pump proves to be superior to the three-level piston corrosion pump while its weight is 45 percent lighter, allowing an economy of 46 percent on the electric power needed. The cost of manufacture of one such pump only comes to one sixth of the three-level one.

#### Learning From the Realities of Production and From Scientific Experiments

To solve a whole series of technical difficulties in the equipment and blueprinting, the ~~from~~ following four methods have been followed:

First, to use the results of experiments at the Shanghai Sensitized Film Workshop in the last few years.

Second, to perform scientific experiments with the ~~help~~ help of fifteen plants and scientific research units.

Third, to send blueprinters to related worksites and investigate their equipment.

Fourth, ~~to~~ to use technical data from both within and without the country, compare them and analyze them to find out one's own way of drafting the blueprint.

In the process of setting up the blueprint, the blueprinters have carried out relatively extensive investigations and research, experiments and surveys, mobilizing altogether 451 persons, making inquiries to 303 persons in 159 units, collecting and rectifying 78 volumes of data. Moreover, with the close assistance of ~~fifteen~~ fifteen plants and scientific research units, they wrestled with seven key points, ~~formed~~ formed 22 experiments, determined 30 parameters regarding the ventilation of the film-laying process, the temperature level and pressure, etc. They also solved a series of complicated problems such as air-conditioning, the prevention of dust, the supply of nitrogen, and the protection against explosions.

Thus, of the 300-odd pieces of equipment found in the plant, except for an imported piece that lies unused in the warehouse, everything is made in China. ~~Altogether~~ Altogether there are 55 kinds of special use equipment designed by the Shanghai Light Industry Blueprinting Institute accounting ~~for~~ for 122 pieces of equipment found in the plant.

### Solution of Many Difficulties Through Investigations and Research

At the plant there are framed accelerated pressure filters that are generally made out of stainless steel in foreign countries, but then stainless steel is not only hard to get in China, it also costs a great deal. After investigation, the blueprinters did not think that one necessarily had to use stainless steel, consequently they thought of finding a new material ~~kind of found~~ to replace the stainless steel. Together with the Shanghai City Light Industry Scientific Research Office they worked ~~various difficulties~~ for over a month and overcame various difficulties, experimenting with tens of anti-rust metallic materials. ~~They finally succeeded with the help of the Shanghai Casting Research Office with the use of an~~ aluminium alloy. By the time this aluminium alloy framed accelerated pressure filter was designed and manufactured, it was found to be superb during the experimental stage.

In the production of film base, there is a stage where acetic acid fibers are pretreated. According to foreign blueprints, this process would involve breaking by hand and drying in the drying room, requiring the workers to work intensely and yet giving only a poor efficiency. The blueprinters consequently decided to build a new equipment and renovate the processing method used up to now. They decided to learn from everywhere, ~~improving~~ making inquiries to nine plants, surveying 20 technical data, collecting charts and involving 25 persons struggling for 18 days to finally succeed in the design of an acetic fiber breaking and drying combine, mechanizing the hand process.

At the film-laying department in the main building of the plant, the precipitation ~~discrepancy~~ discrepancy is not supposed to surpass two centimeters, there is supposed to be no cracks. But the geological makeup of the ~~the~~ plant site is extremely bad and several buildings newly constructed on this site all ~~have~~ get cracked. Thus, capital construction in this case represents a technical difficulty by itself. The blueprinters therefore looked around, made ~~inquiries~~ inquiries, asked for advice, investigated and discussed the questions, they carried out on-the-spot investigations, ~~interviewed~~ visited with nine units, investigated 12 buildings, investigated about the geological makeup and the design data to find out clearly about the reasons for the cracks. Finally after taking various measures, they solved the problems.

### Manufacturing Equipment Before Schedule by Three Kinds of Combinationx With Wide Assistance

Many a piece of equipment of the film base plant have been manufactured at the Shanghai Ta-ming Iron Workshop. This plant having been ~~x~~ the combined facilities of two ~~handicraft cooperatives~~ small handicraft cooperatives, one dealing with electricx welding and

the other with metalworks, the workers ~~at~~ there number only 200 persons with ~~no~~ no modern machinery or building at their disposal. These workers, however, operate with small machines to manufacture much larger parts by the method of laboriously proceeding little by little ~~in~~ in case there is no large machines available. In the manufacture of two-layer ~~pipe~~ heat exchange pipes, for instance, the large-size steel pipes are supposed to be bent into U shapes without folding creases or bumps, which is something impossible according to foreign literature. Nonetheless, the leadership of the plant, the technicians and workers wrestled with the problem of manufacturing them without the benefit of pipe bending machines and finally found a method. It is this small plant that provided the film base plant with 80 percent of its needed equipment, producing everything in accordance with ~~specifications~~ specifications and in time.

45 ~~the~~ plants in Shanghai ~~provided~~ manufactured equipment for the film base plant but on some complicated machines, nine plants have cooperated to manufacture them. To supply the machinery ~~in~~ according to plan, these plants have ~~formed~~ formed an "assembly line." ~~Once~~ Once ~~each~~ part ~~is~~ is completed by one plant, it is immediately sent to the next. The Second Textile Machine Workshop which undertook ~~to~~ to complete the final assembly to start production as fast as possible, the jobs have been executed in the most urgent manner at the other plants. The workers worked overtime and ~~in~~ so, on New Year's Eve, 1963 the various kinds of machinery were brought into place for installation.

#### Even Blueprinting Methods Stop Being Copies of Foreign Models, Learning Instead From Parallel Intersecting Enterprises

Up to now, even the blueprinting methods have been mechanically imported from abroad. Because of this, every step in the blueprinting process had been ~~strictly~~ strictly adhered to, once the first step is not done, the second step necessarily does not get implemented. Among the various specialized departments, it is very strongly stressed that they should not design things on their own when there is no models available and that even should they be able to do so, they must wait while the procedures found in foreign literature are never changed even though for a bit.

The blueprinting of the film base plant has been done in extreme urgency, and that is why, the execution of the blueprint, manufacturing and installation of equipment had to be done almost at the same time as the blueprinting. The situation made it that it had to take advantage of ~~the~~ the methods of parallel and intersecting enterprises.

As far as the various stages are concerned, they are prepared as much in advance as possible ~~while~~ while the conditions of the next, providing the conditions necessary for the next stage. Since it is impossible to

draw up preliminary blueprints for expansion without having a definite construction site, five sites were investigated in a dash during a mere period of 20 days. Once the site has been decided upon, the questions of blueprinting principles were made clear and the preliminary blueprints for expansion were worked out at top speed. With the completion of the blueprints, work was immediately started on the execution charts of the solvent tank and pump site that is not subject to many restrictions, without even waiting for the final decision on the expansion blueprints. The very day the ~~xxx~~ expansion blueprints were accepted, the first execution charts were sent to the work site.

With regard to relations ~~with~~ various specialized fields, things have been sped up because of ~~mutual assistance~~ the promotion of mutual assistance and activeness, common discussions and immediate undertaking. For instance, up to now everything used to be designed one after another whether it is the processing method, ventilation or refrigeration, taking over a month each. But now, right from the beginning things ~~xxx~~ get executed while the discussions were taking place, which is why by the time the processing chart ~~is~~ completed, the ventilation and refrigeration plans would also be completed. Consequently, the blueprinting process ~~gets~~ got shortened to over half the time as compared with up till now.

As far as relations between superior and inferior echelons are concerned, promotion of ~~technical~~ democracy in technical branches has been stressed and should they be dealing with important questions, they would call a "three combination" conference so as to study and solve these questions together.

In relations with outside plants, they did not wait for the technical materials gathered by the Construction Planning Department to circulate and come around, they ~~xxxx~~ positively search for them by their own efforts. In regard to the order ~~of~~ of charts to be fulfilled, they made it a point to meet the demands of processing and manufacturing as much as possible. Thus, when the charts were handed ~~over~~ over in a bunch, the processing and manufacturing departments could ~~carry~~ carry them out in a hurry. Once they were through, they would be ~~handed over to the next~~ handed the next batch. And again, they would complete these. Thus, the blueprinting, execution, manufacture and installation processes all advance one another; whether the room is completed or not, the equipment would still be installed, or the roof and floor are being worked on, the equipment would still be installed in one corner, and thus from the beginning to the end, the speed of construction has been improved quite a lot.

#### Remaining Blueprinting Deficiencies

The blueprinting of the film base plant was very successful, yet it was not totally devoid of deficiencies and problems. The Shanghai

Light Industry Blueprinting Institute has described these shortcomings and ~~at~~ problems in the following manner:

Generally speaking, by comparison with the standard film base plant of progressive foreign countries, the present plant does show a definite lag behind, which is not in any way near catching up. The destruction of restrictions that must be wiped out has not yet been done exhaustively and in some points, in someplaces, there is still the phenomemon of importing wholesale foreign models. For instance, the indicator of the film-laying department represented a carbon copy of foreign standards and consequently had to be rectified three times to get fixed, representing so much duplication and waste. In depth and in the order of blueprinting, there still remain troublesome procedures and thus 28 percent of the process pipeline installation charts did not even get used. Investigation and research sometimes are not adequate, the blueprinting not in accordance with reality, and the execution of works at some specialized departments careless, creating several problems. For instance, the investigation of water sources was botched and thus there was not enough water, the selection of the automatic controller did not correspond with reality, mistakes and oversight within the blueprints themselves were also by no means rare. Some blueprint criteria get overblown, and ~~expensive~~ a great deal of capital ~~ix~~ investment can still be saved. For instance, the capacity to treat river water can be many times more than the actually needed level.

#### Bright Future for the Sensitized Materials Industry

Thus, the film base plant of the Shanghai Sensitized Film Workshop is responsible for the equipment, manufacture, installation and even the earth work as designed by the ~~Shanghai~~ Shanghai Light Industry Blueprinting Institute, a branch of the Ministry of Light Industry. Forty-five plants ~~altogether~~ altogether from the departments of ~~light industry~~ light industry, machinery, electric machinery, survey, textile industry and chemical industry manufactured equipment and completed the expansion plant in a short period of over a year on the basis of ~~x~~ assistance and cooperation in every respect. In April 1964, the ~~ix~~ new plant started ~~expensive~~ ~~material~~ production on an experimental basis and the very first products were used as movie film ~~ix~~ in such pictures as "Young ~~ix~~ Lu Pan" and "Big Li, Small Li and Old Li" produced by the movie printing plants of Peking and Shanghai and recognized to be of good quality ~~ix~~ after assessment by related units. Since ~~starting~~ officially starting production, ~~the~~ the plant has continually produced transparent or light blue film base which is then sent to various parts of China as photo film, movie film or X-ray film.

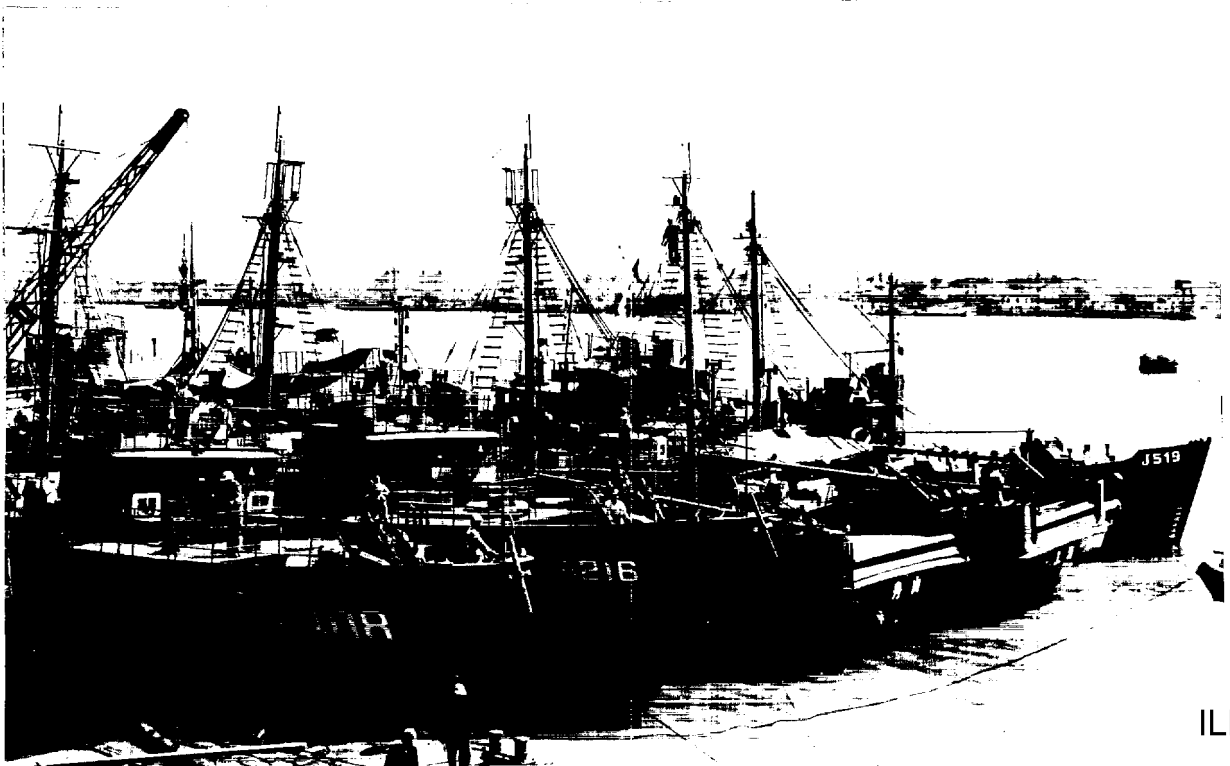
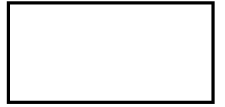
In June 1965, ~~ix~~ because some poor material ~~ix~~ was mixed in a supply of Model 120 roll~~s~~ film (Brownie size) produced by the Shanghai Sensitized Film Workshop, the 50,000 rolls that were sent to Peking were sent



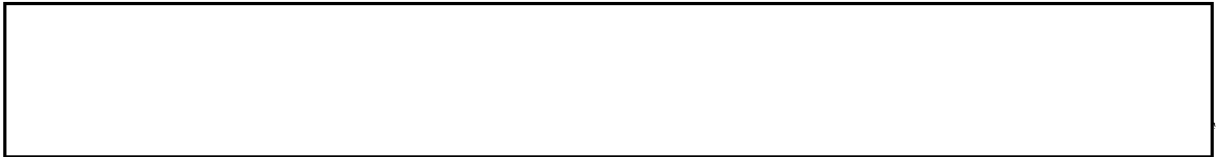
~~xxx~~ taken back, it was reported. As this is because there was fingerprint and traces of adhesive tape on the films, the plant has taken advantage of this to improve upon the packing of films, the processing conditions, even the control which was applied to five rolls out of every 400 before is now reduced to five rolls out of every one hundred. The Model 120 films produced by the Shanghai Sensitized Film Workshop are shown on sale all over China and recently ~~its quality~~ their quality has improved thanks to this affair.

Besides this plant, the Kwangtung Kung-yuan Photographic Chemistry Workshop in 1965 succeeded in producing on an experimental basis strong, middle and ~~soft~~ soft-tone films used in printing (~~panchromatic~~ panchromatic and orthochromatic) that used to be imported altogether. Also, recently there have been produced everywhere in China printing paper for photocopying, which industry is being widely propagated. Thus the sensitized materials industry of China seems to be developing with leaps and bounds in the future. The people connected with the blueprinting of the film base plant described ~~xxx~~ above have ~~xxxxxxxxxxxx~~ for the most part been post-1960 school graduates, and the workers who have grasped the production techniques of film base are ~~x~~ on the average 25-year old youths raised at the plant itself. This fact alone warrants a great deal of expectations as to the future development of the branch.

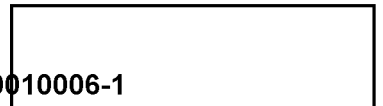
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250-HP fishing <sup>boats</sup> vessels constructed by the Shanghai Ch'iu-hsin  
Shipyard. These <sup>boats</sup> vessels were constructed exclusively for the Shanghai  
Fishermen's Commune and the Ch'uan-shan Ch'un-tao Fishermen's Commune.

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CHINA WAC 492A SHANGHAI 31 14 N 121 28 E  
Chiu-hsin Shpyd, 250-hp fishing boats for use in Shanghai Fishermen's  
and Chun-tao Fishermen's Communes.   
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CIA 990532

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1	TERRAIN
2	COASTS
3	MILITARY
4	SCIENTIFIC
5	CITIES TOWNS
6	BUILDINGS HOUSING
7	PEOPLE POLITICAL
	SERVICES SCHOOLS
	OTHER SOCIOLOGICAL
	COKE - IRON AND STEEL
	OTHER METAL INDUSTRIES
	MINING
	CHEMICALS
	PETROLEUM
	FUELS POWER
	WOOD PRODUCTS FORESTS
	MOTOR VEHICLE INDUSTRY
	AIRCRAFT INDUSTRY
	MACHINERY PRODUCTS
	FIBERS FABRICS
	COMMUNICATIONS ELECTRONICS
	FOOD-FISHERIES AGRICULTURE
	OTHER INDUSTRIES
	RAILROADS
	ROADS
	WATERWAYS
	PORTS HARBOR
	RECREATION ACILITIES

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PHOTOGRAPH FILES

CHINA WAC 492A (KIANGSU) SHANGHAI 31 14 N 121 28 E  
250 hp trawlers built by Shanghai Shipyard. Ching Chi Tao Pao, No. 864,  
4/13/64.  
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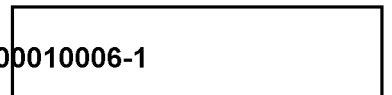


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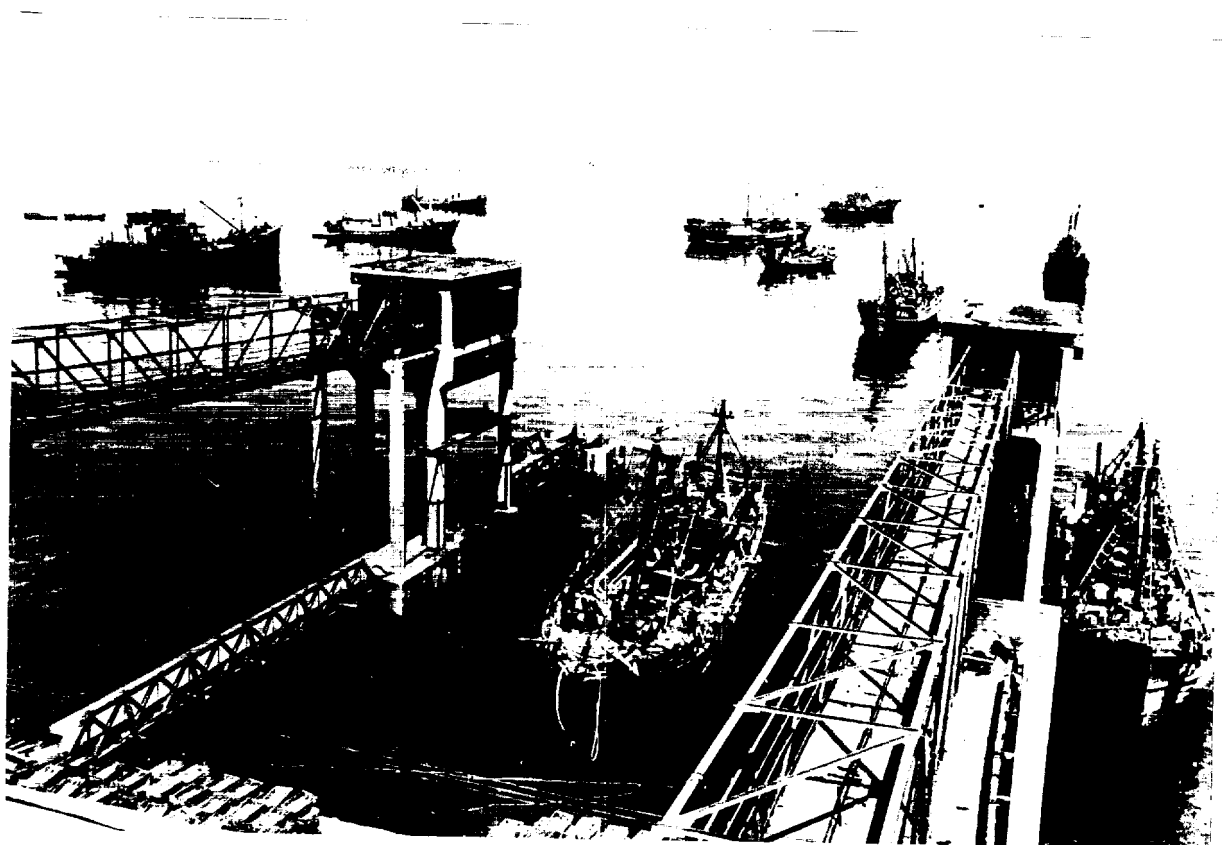
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New type ocean-going aquatic products research and investigation boat (Tung-hai Hao) constructed by the Shanghai Ch'iu-hsin Shipyard in May 1964.

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Ice conveyor bridge at the port of Yen-t'ai in Shantung Province.  
Outgoing fishing <sup>boats</sup> vessels load ice at this port. The port of Yen-t'ai has developed markedly as a fishing base these past several years. The number of fishing <sup>boats</sup> vessels using this port as their operational base has increased eightfold since the early post-liberation period.

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CHINA WAC 381C (SHANTUNG) YEN-TAI 37 32 N 121 24 E  
Ice-transport bridge built by Marine Products Co. to deliver ice to  
trawlers directly from United Ice Plant. Kung Jen Jih Pao, 6/21/64.  
Official Use Only (28,29) CIA 1004090

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1	TERRAIN
2	COASTS
3	MILITARY
4	SCIENTIFIC
5	CITIES TOWNS
6	BUILDINGS HOUSING
7	PEOPLE POLITICAL
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	OTHER SOCIOLOGICAL
	COKE - IRON AND STEEL
	OTHER METAL INDUSTRIES
	MINING
	CHEMICALS
	PETROLEUM
	FUELS POWER
	FOOD PRODUCTS FORESTS
	MOTOR VEHICLE INDUSTRY
	AIRCRAFT INDUSTRY
	MACHINERY PRODUCTS
	FIBERS FABRICS
	COMMUNICATIONS ELECTRONICS
	FOOD-FISHING AGRICULTURE
	OTHER INDUSTRIES
	RAILROADS
	ROADS
	WATER
	PORTS HARBORS
	AIR FACILITIES

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Ice-transport bridge built by Marine Products Co. to deliver ice to  
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Fishing nets being machine-knitted at the Shanghai Wang-chu Manufacturing Plant. In step with the developments in ocean fisheries, this plant converted several years ago from hand-knitting to machine-knitting. This electric knitting machine is also a product of China.

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CHINA WAC 492A SHANGHAI 31 14 N 121 28 E  
Wang-chu Mfg plt. Fish net knitting machine.  
Confidential (25)



CIA 1077257

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One segment of the fishing port of Shanghai. With huge state investments the Shanghai Ocean Fisheries Company has enlarged its docks, added new fishing <sup>boats</sup> vessels, and increased its fish processing capabilities and its fish net manufacturing capabilities.

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CHINA WAC 492A SHANGHAI 31 14 N 121 28 E  
Shanghai Ocean Fishery Co. whfs on lower Huang-pu R.

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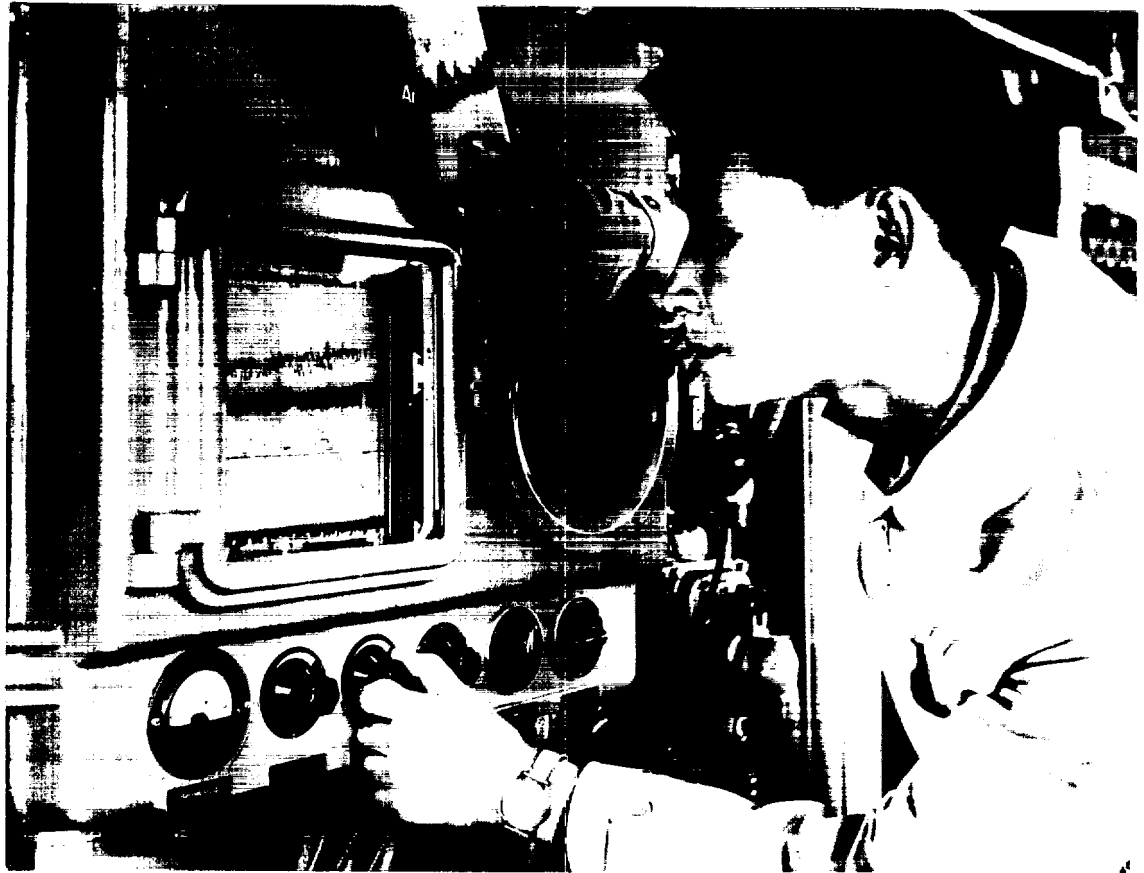
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*John Chen*

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Supersonic fish detector installed aboard the "Tung-hai Hao."

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CHINA SHANGHAI 31 14 N 121 28E (WAC 492A)  
Supersonic fish detector on TUNG-HAI Hao fish research vessel.

Confidential

(23,30)

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*2 captions for 1 photo*

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CHINA WAC 381C YEN-TAI 37 32 N 121 24 E  
Unloading Scabbard fish.   
Confidential (24, 30)

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Scabbard fish unloaded from the fishing <sup>boats</sup>~~vessels~~ at the port  
of Yen-t'ai.

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997847 Chou-shan (3000  
mole)

Fishing port.

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A fishing port and fishermen of Ch'uan-shan Ch'un-tao in Chekiang Province, prominent fishing grounds in China.

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#51  
Fishing

TECHNICAL PROGRESS IN CHINESE OFFSHORE FISHING

~~Source: Chugoku Sangyo Shashin Tsushin (Photos and Features on Chinese Industry), No 51, 1 September 1965, pp 1-6~~

In 1936, the total amount of marine products produced in China for the calendar year was 1,500,000 tons. With 490,000 tons for 1949, 910,000 tons for 1950, 1,330,000 tons for 1951, ~~1,720,000~~ 1,720,000 tons for 1952, ~~1,899,000~~ 1,899,000 tons for 1953, 3,100,000 tons for 1957, 4,060,000 tons for 1958, and 5,020,000 tons for 1959, the industry has made ~~big~~ gigantic advances after Liberation, it is now catching up with the world's first producer in this field, Japan, showing capabilities for surpassing Japan ~~even~~ even. In April 1960, at the National Congress of People's Representatives, ~~Hsu Teh-heng~~ Hsu Teh-heng, Minister ~~of Fisheries~~ of Fisheries, set forth the aim of 5,800,000 tons for 1960 but thereafter, as in the case of other ~~ministries~~ branches, the actual figure of national production in the field of fisheries ~~was not published~~ has not yet been published, making it unclear whether the proclaimed objective was reached or not--this also goes for the actual achievements in production after that date.

Around 1960, China was visited for three continuous years with great natural calamities that on the whole caused stagnation of the national economy. The fisheries branch was also adversely influenced, as it saw the phenomenon of not having enough fishing instruments and others, thus causing quite a stagnation. Starting from around 1963, the branch once again started to show a tendency to progress and now it seems to have entered a stage of rapid progress and activity even on such points as ~~technical equipment~~ the amount of fishes collected and technical equipment starting with fishing boats and nets.

Unlike Japan, on the huge Continental China where abound large and small rivers and lakes, Freshwater fishing occupies an important place in the ~~fish~~ fishing industry, accounting in 1959 for 45.6 percent of the total fisheries production as compared to 54.4 percent produced by deep sea fishing. Various marine cultures were also produced to the rate of

45 percent in inland waters as compared to 55 percent produced by the seas. Here we would like to investigate into the recent conditions regarding various points of technical progress achieved by the Chinese offshore fishing industry that are of deep interest to the Japanese fisheries world.

#### Fine Fishing In 1965

Offshore fishing in China this year (1965) from ~~in~~ the spring to the summer has been very fine.

According to a release of the New China News Agency dated 3 May 1965 from Peking, the amount of marine products taken in soon after the spring fishing period by the fishermen of Hainan Island and of Chan-chiang Special Zone which constitute the southernmost fishing zone of China has every time been from 10 to 30 percent larger than the amount taken in the year before for the same period. At the Min-tung fishing ground ~~in~~ Eastern Fukien, the amount of fish takings up to the middle of April 1965 was 43 percent higher than that taken in during the same period ~~in~~ 1964. Even crab fishing in Hopoh during the spring has proved to be outstanding for the recent past and in Hwang-hwa Hsien the amount of crabs caught in a mere period of ten days came to almost double the amount caught during the fishing ~~times~~ periods of all of 1964. In the Liaoning-Tantung (formerly Antung) area which forms the ~~offshore~~ northernmost offshore fishing area of China, the catch taken in ~~during~~ from the middle of March to the middle of April came to three times that caught ~~in~~ for ~~the same~~ the same period in 1964. Besides, on many fishing ~~grounds~~ grounds in Chekiang and Shantung, etc. the differences between this year and last year's catches ~~has~~ have all been ~~low~~ at about the same level.

The summer catches also proved to be unprecedented large catches for recent years. According to a New China News Agency report ~~in~~ dated 4 August 1965 from ~~Kiangchow~~ Hangchow, the various kinds of fishes caught during the summer fishing period at the Chou-shan fishing ground totalled 115,000 tons, of which "fusei" accounted for over 35,000 tons, a larger figure than the total "fusei" catch for three years between 1961 and 1963.

#### A New Method of Hauling Fishes: the "Counter-Current Double Operation"

The above rich catches have been owed to various conditions such as the satisfactory weather conditions of the fishing excursions, ~~the~~ and the improvement of the technical equipment of the Chinese fishing boats, etc., but the most special feature has been the stabilization and improvement of the hauling level due to a revolution in ~~fishing~~ fishing methods. This can be seen as a general pattern at the Chou-shan fishing ground and others.

This revolution in hauling methods is a combination of two kinds of operations, counter-current netting and current netting, called "Counter-current double operation." The development of fishing boats at the Chou-shan fishing ground from the old junks to motor-powered sailing boats has also ~~progressed~~ progressed rapidly in the last few years, at present half of the fishermen in the whole area are in a position to fish ~~which~~ with motor-powered sailing boats. Up to now even these motor-powered sailing boats have hauled but with the counter-current net. This fishing method has been conceived for the hauling of large ~~shoals~~ shoals of fishes such as large and small gold fishes, cuttlefishes and scabbard fishes, that form during the active period but as for those fishes that live scattered or underwater, or again only in the upper layers, those that have a high economic value such as the Alichaelangata, pomfrets, and Scomberomorus nipponius, that method has no value. This is why the Chou-shan fishing ground ~~remained~~ remained at a backward level, unable to raise the hauling level to a stabilized one during the year.

Consequently, in order to sound out the path to increased production throughout the year, in the last few years people at various localities have groped for a new method and ~~as a result of constant practice they found out a new method called "counter-current double operation."~~ as a result of constant practice they found out a new method called "counter-current double operation." This method consists of surrounding the shoals by dragging nets on two flanks when you encounter ~~shoals~~ dense shoals, and of gill net fishing when you meet with scattered fishes. In ~~Chou-shan~~ Chou-shan, at the time of experimentation with and propagation of this new method, the leading cadres in the field of fishing from the special ~~zone~~ zone, from the hsien and from various main ~~people's~~ people's communes or production brigades went deep into the locality, learn this ~~new~~ method that was invented out of the combined effort of the local leading cadres, ~~the~~ technicians and ~~commune members~~ commune members and by experimenting with it, ~~they succeeded in completing and improving upon the method, expanding this activity of mass technical exchange to a large-scale.~~ they succeeded in completing and improving upon the method, expanding this activity of mass technical exchange to a large-scale. By either inviting ~~or~~ people from or sending them to or helping them in various communes and production brigades, they ~~energetically~~ energetically propagated this method. At various communes and production brigades, people have also on a basis of self-help improved upon the netting implements ~~and~~ while the materials supply department endeavored to supply large volumes of nylon netting and plastic buoys.

The cost of current netting is cheap, its manipulation technique ~~very~~ simple and easy to learn, requiring little labor while catching a great deal of ~~new~~ fishes of high economic value. Whenever this method is propagated to, the income in fishing increases considerably. This is why the production brigades which newly ~~adopted~~ adopted this method in 1965 ~~units~~ come to over 700 and the units that went out fishing during the latter part of the summer fishing period and those that planned to go out during the fall fishing season came to over 1000, representing an extraordinary ~~increase~~ increase as compared to 1964.

The State-Run Fishing Companies, the Kernel of the Modernized Fisheries

The above revolution in hauling methods is truly remarkable as an indication of the progress of the Chinese fishing industry but it is something that cannot be separated from the modernization process that has been going on rapidly within the Chinese fishing industry during recent years.

Before Liberation, practically all the ~~boats~~ fishing boats in China were junks (wind-powered sail boats) that were under the extreme influence of the weather and the fishing areas were limited to rivers or lakes or along the coasts. After the Liberation, however, the Chinese fishing industry adopted new methods while carrying on a program of semi- and full mechanization at the same time, it has proceeded to a revolution in the techniques and especially since 1958, with the rapid increase in the amount of motor-powered sailing vessels that got used in the industry, the Chinese fishing industry has greatly changed its guise.

First, the state-run fishing companies became the nucleus of a large-scale fishing production thanks to mechanization. At the time of the Liberation, all there were were three such companies in Shanghai, Luta and ~~Tsing~~ Tsingtao while there was ~~not~~ not a plant specialized in the ~~the~~ manufacture or repair of fishing vessels. At present, however, there are large state-run fishing companies in Luta, Yent'ai, Tsingtao, Shanghai, Choushan and Nanhai. Besides, in the majority of the provinces along the coasts, there have been set up relatively small-scale fishing companies. As for ~~manufacturing~~ manufacturing ~~yards~~ yards for fishing boats, they have started to be built during the first Five-Year Plan from 1953 to 1958 while the number of fishing boats built and designed on a self-help basis have increased year after year ~~and~~. The state-run fishing companies in Luta, Yent'ai, Tsingtao, Shanghai, Choushan and Nanhai, etc. have ~~all~~ done all their fishing using modern motorized fishing vessels.

Parallel with the development of the Chinese fishing industry, there have been set up modern ~~fishing~~ consolidated fishing enterprises in several main fishing production bases along the coast of China. In Shanghai, Tsingtao, Yent'ai, and Luta, etc. the harbor and bay facilities have all been expanded, not only with the construction of fishing shipyards, but also with the construction of modern marine product processing plants, refrigeration plants and warehouses. ~~Such~~ Such plants as the ~~State-run~~ State-run Yent'ai Fishing Company Consolidated Processing Plant which started operations in 1960 have had ~~their~~ all their equipment designed and manufactured in China itself, from the freezing, ice-making and storing equipment to the general usage facilities. The cold storage capacity of the plant is equivalent at ~~at~~ any one time to over 200 full

shipments of fishes and lobster, or to over 3000 cold storage trucks. Thanks to the existence of such modern fishing consolidated enterprises, the ~~various kinds of~~ various kinds of hauled-in marine products undergo a mechanized production process to become canned fish, frozen fish, frozen lobster, ~~and~~ powdered and seasoned fish, etc. Some might further be processed to become medicine or industrial raw materials. The ice produced at the ice manufacturing plant automatically gets transported onto the ~~fish~~ fishing boats and piled up immediately to serve in cold storage on the seas.

#### From the Junks to the Motor\*Powered Sailing Boats

Besides these modern fishing companies, the fishing industry done by the people's communes along the coasts also registered rapid progress. The most outstanding expression of this progress can be seen in the ~~xxxxxx~~ ~~xxxxxx~~ replacement of junks by motor-powered sailing boats: In the Choushan archipelago, there were only 76 motorized sailing boats but this figure ~~jumped~~ jumped to over 1200 in 1963, at present accounting for 40 percent of the total haul in the area. In Chu-hai hsien of Kwangtung Province, for instance, the haul taken in by motorized sailing boats during the first half of 1964 even accounted for 98 percent of the total haul of the hsien. At present in the 150-odd hsien and town along the coast, every place has ~~ix~~ a number of ~~xxxxxx~~ motorized sailing boats in operation.

Recently, these boats are for the most part equipped with nylon fishing nets. The manufacture of nylon fishing nets in 1964 in the area of Luta (Liaoning Province) showed a jump of about six times the level of the year before, this year (1965) the volume has expanded to over 40,000 pieces of synthetic fiber net for the whole province of Liaoning. In the province of Fukien also, there have been manufactured 40,000 pieces of running gill nets during 1965 while in the province of Kwangtung, the special zone of Shant'ou alone produced over 1000 seines and over 2000 gill nets during 1965.

#### Modern Equipment Such as Shoal Detecting Devices and Others

Moreover, equipment such as fish-shoal detecting devices, oil-pressure net lifting devices, electric net-weaving machines, marine product processing machines, etc. have all been produced internally and ~~start~~ started to be furnished to various units. The fish-shoal detecting devices are based on the principle of ultra-sonic waves. After having been laboriously worked out by the production departments of the Shanghai Ocean Telecommunication Machinery Workshop and the Chungyuan Electric Machines Workshop, they have been successfully produced on an experimental basis, experimenting with various models. Of these detecting devices, some which are from 250 horse-power to ~~500~~ 500 ~~xxx~~ horse-

power are used on the ~~middle~~ medium and large-size fishing boats ~~and~~ ~~others~~ while others, smaller, are used on the motorized sailing boats belonging to fishing production brigades in the people's communes: they have all been successfully produced on an experimental basis by 1963 and starting from 1964, they have been used in actual fishing production, thus promoting their great power in enabling the hauling of huge amount of fishes and others.

Besides, as far as ~~the~~ special models are concerned, we have the whaling boat "Yuan-lung-hao" and the new model of oceanographic research and investigation boat, the "Tung-hai-hao" ~~which have been~~ <sup>both</sup> constructed by the Shanghai Ch'iu-hsin Shipyard, which are active ~~in~~ on off-shore fishing grounds.

The whaling boat "Yuan-lung-hao" is a small-size whaling boat of 1200 horse-power built in 1963 and meant especially for ~~the~~ hauling the rich ~~and~~ resources in whales along the Chinese sea-coast: this model has come into operation in the Yellow Sea and on the Eastern China Sea.

The oceanographic investigation boat "Tung-hai-hao" was built in May 1964 and transferred to the department that uses it. On the boat there are four investigation and research rooms dealing with planktons, with the life, the physics and the chemistry of fishes. It is also equipped with various kinds of special experimental devices. This boat has been dispatched to the Choushan fishing ground from July 1964 with ~~the~~ first the mission of collecting data regarding the growth, distribution, excursions habits of the fish shoals around the Choushan fishing ground.

Since 1964, the ~~People's~~ Talien Diesel Engine Workshop has officially started the production of small-size Diesel engines for use on fishing boats ~~and~~ which have started being ~~distributed~~ ~~to~~ supplied to the fishermen: this is an indication how ~~far~~ technically advanced the Chinese ~~industry~~ fishing industry has become.

These specially designed Diesel engines for use on ~~200~~ 20 horse-power boats ~~Model~~ Model 2 to 10, after having been used by the fishermen of the two areas of Choushan and Luta for a period of one year on an experimental basis, have got to be officially produced. These engines are of small size, they are light, they are easily started and of relatively easy ~~and~~ manipulation, at the same time they do not vibrate too much, require an economical amount of oil to run, and they are fit for ~~use~~ use on small-size fishing boats. When installed on a 15-ton gauge ~~sailing~~ fishing sail boat with the accompanying gears, they can run 7-8 nautical miles per hour in regular weather, and 4-5 nautical miles when ~~loaded~~ the boat is loaded. Should an electric starter be added to the Diesel machine, the ~~machine~~ engine can be started fast even in emer-

gency situations in times of rain and storm or in a temperature of less than 10°C. Should a belt carriage and a small generator be added to the Diesel engine, the generating power can be made to move the net rolling machine and to provide ~~lights~~ lighting for use at night.



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BRIGHT OUTLOOK FOR THE CHINESE SENSITIZED  
MATERIALS INDUSTRY WITH THE COMPLETION OF THE FIRST  
FILM BASE PLANT

Source: Chugoku Sangyo Shashin Tsushin (Photos and Features on Chinese Industry), No 51, 1 September 1965, pp 1-9.

On 10 September 1964, the very first modern film base plant blue-printed and set up by China itself officially started operations. For the construction of this plant, over 40 plants of the various industrial branches of Shanghai have pooled their efforts to manufacture the equipment, to fully promote the combined strength of three kinds of people: the leading cadres, the technicians and the workers. Moreover, by carrying out an exemplary revolution in blueprinting the construction of bases that have been greatly expanded since last year, they have succeeded in building a plant appropriate ~~to~~ to the conditions of China, requiring little capital and building space and yet of very fine quality. All aspects of the ~~construction~~ construction have received a great deal of attention and thus, the new plant means a great deal in the development of the sensitized materials industry of China. Hereunder, we would like to review the present state of ~~the production of films in~~ film production in China as centered around the construction of this new plant.

Beginning of Film Manufacture After the  
Great Leap Forward

Before Liberation, there was no sensitized materials industry in China whatsoever. Before the Great Leap Forward, in 1958, several small plants producing photographic paper in Shanghai were pooled to make the Shanghai sensitized film workshop. The ~~new~~ very first plant was located at the former carbon paper plant and had a worker population of 100 only. To apply highly sensitive emulsion, the workers improved upon the equipment, fabricating such instruments as stainless tubs and cooling, drying, and cutting equipment. Besides experimenting over and over with ~~new~~ rudimentary equipment, they finally succeeded in manufacturing the first "Shanghai mark" films. After this success, spanning to the end of

1959, they kept on expanding the plant, and continuously discovered many automatic applicators for three years during, installing in the meantime accessory equipment such as cooling equipment, ventilating equipment, and boilers. Together with the improvement of the equipment, the plant also expanded the number of film varieties, bettered their quality, selling them everywhere in China.

At the same time that the Shanghai sensitized film workshop was erected, up to the end of 1959 in the whole of China there were built more than ten sensitized materials plants. For instance, the Paoting Film Manufacture ~~Workshop~~ ~~max~~ started construction in July 1958, and ~~max~~ ~~completed during the first stage of~~ the first stage of construction was completed in 1960. This workshop planned to produce annually 330,000,000 meters of black-and-white ~~movie film, professional film~~ and color movie film, of X-ray film and of photographic film. ~~Workshop~~ At the end of 1958, the Tientsin Camera ~~Workshop~~ saw its renovation works completed, planning to produce 2,400,000 square meters of X-ray and other films during 1958.

#### National Production, A Necessity Forced Upon China by the Stopping of the Import Flow

Thus, by 1959, though the Chinese had succeeded in producing color films, they still had to rely on foreign import for the film bases. In 1960, the modern revisionists completely stopped ~~the~~ providing movie ~~film~~ film to China. Before that, some countries had offered to help China construct a film base plant, but then they had broken their promises and recalled their specialists, cancelling their assistance program.

To remedy this situation of dependence upon foreign countries and to supply China ~~with~~ out of its own efforts, the Chinese government decided in the second part of 1962 to build a film base plant at the Shanghai sensitized film workshop, charging the Shanghai Light Industry Blueprinting ~~Institute~~ Institute with the blueprinting of the plant.

Film base is a quite precise chemical industrial product, it must be strong when stretched out and not break (Movie films ~~xx~~ get projected over 600 times each), it must be smooth (not more than 1/12 of 70 microns: this is how small the differences in thickness can be allowed, that is just by a hair breadth), it must be ~~perfectly~~ even (there should not be a whit of dust or air bubble). Besides all these ~~characteristic~~ characteristics, it also requires a ~~xxx~~ relatively high degree of production processing and sophisticated auxiliary ~~equipment~~ equipment since the solvent is inflammable and poisonous. This makes it that in the "three new" (new manufacture, new processing, and new equipment), the Chinese are up to excessive difficulties owing to the fact that they do not have the technical means, the manpower needed and especially the experience required.

The situation, however, ~~was not so simple~~ did not allow of any hesitation. The blueprinters adopted and promoted a revolutionary spirit, broke down many limits, got the cooperation of various branches dealing with construction planning, manufacture, processing, installations, and scientific research: ~~this is how~~ they overcame the difficulties one by one and completed the new plant in a splendid manner.

#### Completion In A Little Over A Year

The time it took to blueprint the plant was exceedingly short: the preliminary blueprint for expansion was completed in 68 days and the execution plan within six months. It took no more than one year and a half to go from the determination of the plant site to the construction of the whole plant, ~~and~~ and even the production of manufactured goods in accordance with ~~specifications~~ specifications, ~~At the same time, the~~ ~~year~~ Up to ~~now~~ now, it used to take three years generally for the construction of something on a similar ~~scale~~ scale of investment as the present plant to be completed, and of the three years one year and a ~~half~~ half would have been needed for the blueprinting of the project.

This plant has to a certain degree been modernized, its production operations mechanized, it is also equipped with devices for the prevention of explosions and of dust as well as ~~with~~ for keeping the same temperature and degree of humidity within the plant (amounting to over 300 pieces of equipment altogether). Yet investment in capital construction amounts to relatively little and the site available is not so large either. Production officially started in 1964 only, yet the quality of the manufactured goods already reaches the level of foreign products, or at least approaches that level. The arrangements made for the whole construction ~~works~~ works have been made in a ~~very~~ practical and solid manner, leaving no problems ~~or corrections~~ or corrections to be made in regard to execution or installation of equipment. The construction planning department was also very happy with the blueprint. As for the quality of the works, it has been given a certificate of excellence by the State Control Commission.

#### Breaking Away From Foreign Blueprints and ~~Looking~~ Blazing the Way for One's Own Conception

The Shanghai Light & Industry Blueprint Institute worked on the ~~initial~~ blueprint of the sensitized film plant for about three times. The first two times were wholesale copying from foreign blueprints, never surpassing the stage of preliminary blueprinting. In ~~the~~ the last ~~blueprint~~ blueprint, ~~they~~ they had to wrestle immediately with the question of working within the framework of foreign models. Consequently, earnestly learning from experiences contrary to the ~~the~~ correct ones found in foreign blueprints, they suc-

ceeded in putting them to good use, refraining from putting blind faith in the foreign blueprints, working from the realities of China and plotting China's own original road.

If one is to follow the foreign blueprints, there must be "imposing" entrances, wide pathways, green areas, and high-standard welfare facilities, etc. But here, in following the maxim of building the country in an economical manner and the directives from the leadership, they decided not to do anything whatsoever that would be alien to the masses such as a large main entrance to the plant, they also decided not to build anew ~~the~~ any administrative or ~~new~~ welfare facilities, improving and remodeling instead in a practical and economical manner ~~in~~ the shrine ~~the~~ ~~newly~~ ~~was~~ ~~of~~ ~~the~~ ~~same~~ ~~form~~, the simple warehouses, and the people's ~~x~~ dwellings that already were there before to make them into the offices of the new plants, etc. Also as far as the stipulations regarding the prevention of fire and explosions are ~~concerned~~ concerned, there are many among those set up for foreign blueprints that do not agree with the ~~situation~~ concrete conditions of China. Should one decide to follow them all, one would need a great deal of land. After studying the questions over and over, the blueprinters ~~discovered~~ finally discovered ways of doing in agreement with the conditions of the present site, economizing on the fire and explosion prevention expenses and saving also ~~a~~ a great deal on a lot of land. As a result, the arrangement of the whole film base plant went very finely and rationally and by comparison with ~~the~~ works of the same format as ~~foreign blueprints would require~~ required by foreign blueprints, it can do without a great deal of land ~~and~~ while saving enormously on the investment of capital.

In the film base plant, there are processing departments for nitrocellulose and film-laying materials. If we were to go by foreign blueprint stipulations, ~~the~~ this processing room would have to be maintained at a room temperature of ~~20°C~~ 26-28°C during the summer. This requirement is determined, however, on the basis of foreign ~~situation~~ temperatures. Shanghai's summer temperatures being much higher than those of foreign countries, one would have to install a great deal of refrigeration equipment if one were to mechanically introduce this stipulation. The blueprinters consequently based themselves on the concrete conditions of Shanghai to draw up the blueprint and while keeping to the principle of guaranteeing the quality of manufactured products, they rationally improved upon the stipulation. As a result, they succeed in doing away with a great deal of refrigeration equipment and installations.

During the production process, there is also required the use of a three-level piston corrosion pump--this is according to foreign data--but then, this pump is too bulky and heavy, requiring a great deal of wood, of complicated ~~and~~ construction, of high costs and besides, ~~is~~ ~~not~~ not very easy to manipulate. The blueprinters ~~went~~ went to

work for nearly a month in the plant and together with the workers, they experimented fourteen times to gather 169 data, then aided by nine machine factories, they finally succeeded in blueprinting and manufacturing on an experimental basis a new format of pump. This new pump proves to be superior to the three-level piston corrosion pump while its weight is 45 percent lighter, allowing an economy of 46 percent on the electric power needed. The cost of manufacture of one such pump only comes to one sixth of the three-level one.

#### Learning From the Realities of Production and From Scientific Experiments

To solve a whole series of technical difficulties in the equipment and blueprinting, the ~~four~~ following four methods have been followed:

First, to use the results of experiments at the Shanghai Sensitized Film Workshop in the last few years.

Second, to perform scientific experiments with the ~~help~~ help of fifteen plants and scientific research units.

Third, to send blueprinters to related worksites and investigate their equipment.

Fourth, ~~to~~ to use technical data from both within and without the country, compare them and analyze them to find out one's own way of drafting the blueprint.

In the process of setting up the blueprint, the blueprinters have carried out relatively extensive investigations and research, experiments and surveys, mobilizing altogether 451 persons, making inquiries to 303 persons in 159 units, collecting and rectifying 78 volumes of data. Moreover, with the close assistance of ~~fifteen~~ fifteen plants and scientific research units, they wrestled with seven key points, ~~formed~~ formed 22 experiments, determined 30 parameters regarding the ventilation of the film-laying process, the temperature level and pressure, etc. They also solved a series of complicated problems such as air-conditioning, the prevention of dust, the supply of nitrogen, and the protection against explosions.

Thus, of the 300-odd pieces of equipment found in the plant, except for an imported piece that lies unused in the warehouse, everything is made in China. ~~Altogether~~ Altogether there are 55 kinds of special use equipment designed by the Shanghai Light Industry Blueprinting Institute accounting ~~it~~ for 122 pieces of equipment found in the plant.

### Solution of Many Difficulties Through Investigations and Research

At the plant there are framed accelerated pressure filters that are generally made out of stainless steel in foreign countries, but then stainless steel is not only hard to get in China, it also costs a great deal. After investigation, the blueprinters did not think that one necessarily had to use stainless steel, consequently they thought of finding a new material ~~to replace~~ to replace the stainless steel. Together with the Shanghai City Light Industry Scientific Research Office they worked ~~for over a month~~ ~~for over a month~~ for over a month and overcame various difficulties, experimenting with tens of anti-rust metallic materials. ~~They finally succeeded~~ They finally succeeded with the help of the Shanghai Casting Research Office with the use of an ~~aluminum~~ aluminium alloy. By the time this aluminium alloy framed accelerated pressure filter was designed and manufactured, it was found to be superb during the experimental stage.

In the production of film base, there is a stage where acetic acid fibers are pretreated. According to foreign blueprints, this process would involve breaking by hand and drying in the drying room, requiring the workers to work intensely and yet giving only a poor efficiency. The blueprinters consequently decided to build a new equipment and renovate the processing method used up to now. They decided to learn from everywhere, ~~making~~ making inquiries to nine plants, surveying 20 technical data, collecting charts and involving 25 persons struggling for 18 days to finally succeed in the design of an acetic fiber breaking and drying combine, mechanizing the hand process.

At the film-laying department in the main building of the plant, the precipitation ~~discrepancy~~ discrepancy is not supposed to surpass two centimeters, there is supposed to be no cracks. But the geological makeup of the ~~plant~~ plant site is extremely bad and several buildings newly constructed on this site all ~~have~~ get cracked. Thus, capital construction in this case represents a technical difficulty by itself. The blueprinters therefore looked around, made ~~inquiries~~ inquiries, asked for advice, investigated and discussed the questions, they carried out on-the-spot investigations, ~~investigated~~ visited with nine units, investigated 12 buildings, investigated about the geological makeup and the design data to find out clearly about the reasons for the cracks. Finally after taking various measures, they solved the problems.

### Manufacturing Equipment Before Schedule by Three Kinds of Combination With Wide Assistance

Many a piece of equipment of the film base plant have been manufactured at the Shanghai Ta-ming Iron Workshop. This plant having been ~~the~~ the combined facilities of two ~~handicraft cooperatives~~ small handicraft cooperatives, one dealing with electric welding and

the other with metalworks, the workers ~~at~~ there number only 200 persons with ~~no~~ no modern machinery or building at their disposal. These workers, however, operate with small machines to manufacture much larger parts by the method of laboriously proceeding little by little ~~but~~ in case there is no large machines available. In the manufacture of two-layer ~~and~~ heat exchange pipes, for instance, the large-size steel pipes are supposed to be bent into U shapes without folding creases or bumps, which is something impossible according to foreign literature. Nonetheless, the leadership of the plant, the technicians and workers wrestled with the problem of manufacturing them without the benefit of pipe bending machines and finally found a method. It is this small plant that provided the film base plant with 80 percent of its needed equipment, producing everything in accordance with ~~stipulated~~ specifications and in time.

45 ~~the~~ plants in Shanghai ~~produced~~ manufactured equipment for the film base plant but on some complicated machines, nine plants have cooperated to manufacture them. To supply the machinery ~~in~~ according to plan, these plants have ~~cooperated~~ formed an "assembly line." ~~Once~~ Once ~~each~~ part ~~is~~ is completed by one plant, it is immediately sent to the next. The Second Textile Machine Workshop which undertook ~~to~~ to complete the final assembly to start production as fast as possible, the jobs have been executed in the most urgent manner at the other plants. The workers worked overtime and ~~in~~ so, on New Year's Eve, 1963 the various kinds of machinery were brought into place for installation.

#### Even Blueprinting Methods Stop Being Copies of Foreign Models, Learning Instead From Parallel Intersecting Enterprises

Up to now, even the blueprinting methods have been mechanically imported from abroad. Because of this, every step in the blueprinting process had been ~~strictly~~ strictly adhered to, once the first step is not done, the second step necessarily does not get implemented. Among the various specialized departments, it is very strongly stressed that they should not design things on their own when there is no models available and that even should they be able to do so, they must wait while the procedures found in foreign literature are never changed even though for a bit.

The blueprinting of the film base plant has been done in extreme urgency, and that is why, the execution of the blueprint, manufacturing and installation of equipment had to be done almost at the same time as the blueprinting. The situation made it that it had to take advantage of ~~the~~ the methods of parallel and intersecting enterprises.

As far as the various stages are concerned, they are prepared as much in advance as possible ~~while~~ the conditions for the next, providing the conditions necessary for the next stage. Since it is impossible to



draw up preliminary blueprints for expansion without having a definite construction site, five sites were investigated in a dash during a mere period of 20 days. Once the site has been decided upon, the questions of blueprinting principles were made clear and the preliminary blueprints for expansion were worked out at top speed. With the completion of the blueprints, work was immediately started on the execution charts of the solvent tank and pump site that is not subject to many restrictions, without even waiting for the final decision on the expansion blueprints. The very day the ~~xxx~~ expansion blueprints were accepted, the first execution charts were sent to the work site.

With regard to relations ~~with~~ various specialized fields, things have been sped up because of ~~mutual assistance~~ and the promotion of mutual assistance and activeness, common discussions and immediate undertaking. For instance, up to now everything used to be designed one after another whether it is the processing method, ventilation or refrigeration, taking over a month each. But now, right from the beginning things ~~xxx~~ get executed while the discussions were taking place, which is why by the time the processing chart ~~is~~ completed, the ventilation and refrigeration plans would also be completed. Consequently, the blueprinting process ~~xxx~~ got shortened to over half the time as compared with up till now.

As far as relations between superior and inferior echelons are concerned, promotion of ~~technical~~ democracy in technical branches has been stressed and should they be dealing with important questions, they would call a "three combination" conference so as to study and solve these questions together.

In relations with outside plants, they did not wait for the technical materials gathered by the Construction Planning Department to circulate and come around, they ~~xxxx~~ positively search for them by their own efforts. In regard to the order ~~of~~ charts to be fulfilled, they made it a point to meet the demands of processing and manufacturing as much as possible. Thus, when the charts were handed ~~over~~ over in a bunch, the processing and manufacturing departments could ~~carry~~ carry them out in a hurry. Once they were through, they would be ~~passed on to the next~~ handed the next batch. And again, they would complete these. Thus, the blueprinting, execution, manufacture and installation processes all advance one another; whether the room is completed or not, the equipment would still be installed, or the roof and floor are being worked on, the equipment would still be installed in one corner, and thus from the beginning to the end, the speed of construction has been improved quite a lot.

#### Remaining Blueprinting Deficiencies

The blueprinting of the film base plant was very successful, yet it was not totally devoid of deficiencies and problems. The Shanghai

Light Industry Blueprinting Institute has described these shortcomings and ~~the~~ problems in the following manner:

Generally speaking, by comparison with the standard film base plant of progressive foreign countries, the present plant does show a definite lag behind, which is not in any way near catching up. The destruction of restrictions that must be wiped out has not yet been done exhaustively and in some points, in some places, there is still the phenomenon of importing wholesale foreign models. For instance, the indicator of the film-laying department represented a carbon copy of foreign standards and consequently had to be rectified three times to get fixed, representing so much duplication and waste. In depth and in the order of blueprinting, there still remain troublesome procedures and thus 28 percent of the process pipeline installation charts did not even get used. Investigation and research sometimes are not adequate, the blueprinting not in accordance with reality, and the execution of works at some specialized departments careless, creating several problems. For instance, the investigation of water sources was botched and thus there was not enough water, the selection of the automatic controller did not correspond with reality, mistakes and oversight within the blueprints themselves were also by no means rare. Some blueprint criteria get overblown, and ~~expensive~~ a great deal of capital ~~is~~ investment can still be saved. For instance, the capacity to treat river water can be many times more than the actually needed level.

#### Bright Future for the Sensitized Materials Industry

Thus, the film base plant of the Shanghai Sensitized Film Workshop is responsible for the equipment, manufacture, installation and even the earth work as designed by the ~~Shanghai~~ Shanghai Light Industry Blueprinting Institute, a branch of the Ministry of Light Industry. Forty-five plants ~~altogether~~ altogether from the departments of ~~light industry~~ light industry, machinery, electric machinery, survey, textile industry and chemical industry manufactured equipment and completed the expansion plant in a short period of over a year on the basis of ~~an~~ assistance and cooperation in every respect. In April 1964, the ~~new~~ new plant started ~~experimental~~ ~~production~~ production on an experimental basis and the very first products were used as movie film ~~in~~ in such pictures as "Young ~~Lu Pan~~ Lu Pan" and "Big Li, Small Li and Old Li" produced by the movie printing plants of Peking and Shanghai and recognized to be of good quality ~~by~~ after assessment by related units. Since ~~officially~~ officially starting production, ~~the~~ the plant has continually produced transparent or light blue film base which is then sent to various parts of China as photo film, movie film or X-ray film.

In June 1965, ~~it~~ because some poor material ~~is~~ was mixed in a supply of Model 120 rolls film (Brownie size) produced by the Shanghai Sensitized Film Workshop, the 50,000 rolls that were sent to Peking were ~~sent~~ all

~~not~~ taken back, it was reported. As this is because there was fingerprint and traces of adhesive tape on the films, the plant has taken advantage of this to improve upon the packing of films, the processing conditions, even the control which was applied to five rolls out of every 400 before is now reduced to five rolls out of every one hundred. The Model 120 films produced by the Shanghai Sensitized Film Workshop are shown on sale all over China and recently ~~its quality~~ their quality has improved thanks to this affair.

Besides this plant, the Kwangtung Kung-yuan Photographic Chemistry Workshop in 1965 succeeded in producing on an experimental basis strong, middle and ~~soft~~ soft-tone films used in printing (~~panchromatic~~ panchromatic and orthochromatic) that used to be imported altogether. Also, recently there have been produced everywhere in China printing paper for photocopying, which industry is being widely propagated. Thus the sensitized materials industry of China seems to be developing with leaps and bounds in the future. The people connected with the blueprinting of the film base plant described ~~above~~ above have ~~also been~~ for the most part been post-1960 school graduates, and the workers who have grasped the production techniques of film base are ~~on~~ on the average 25-year old youths raised at the plant itself. This fact alone warrants a great deal of expectations as to the future development of the branch.