

The China Business Review

THE MAGAZINE OF THE NATIONAL COUNCIL FOR US-CHINA TRADE

November-December 1986

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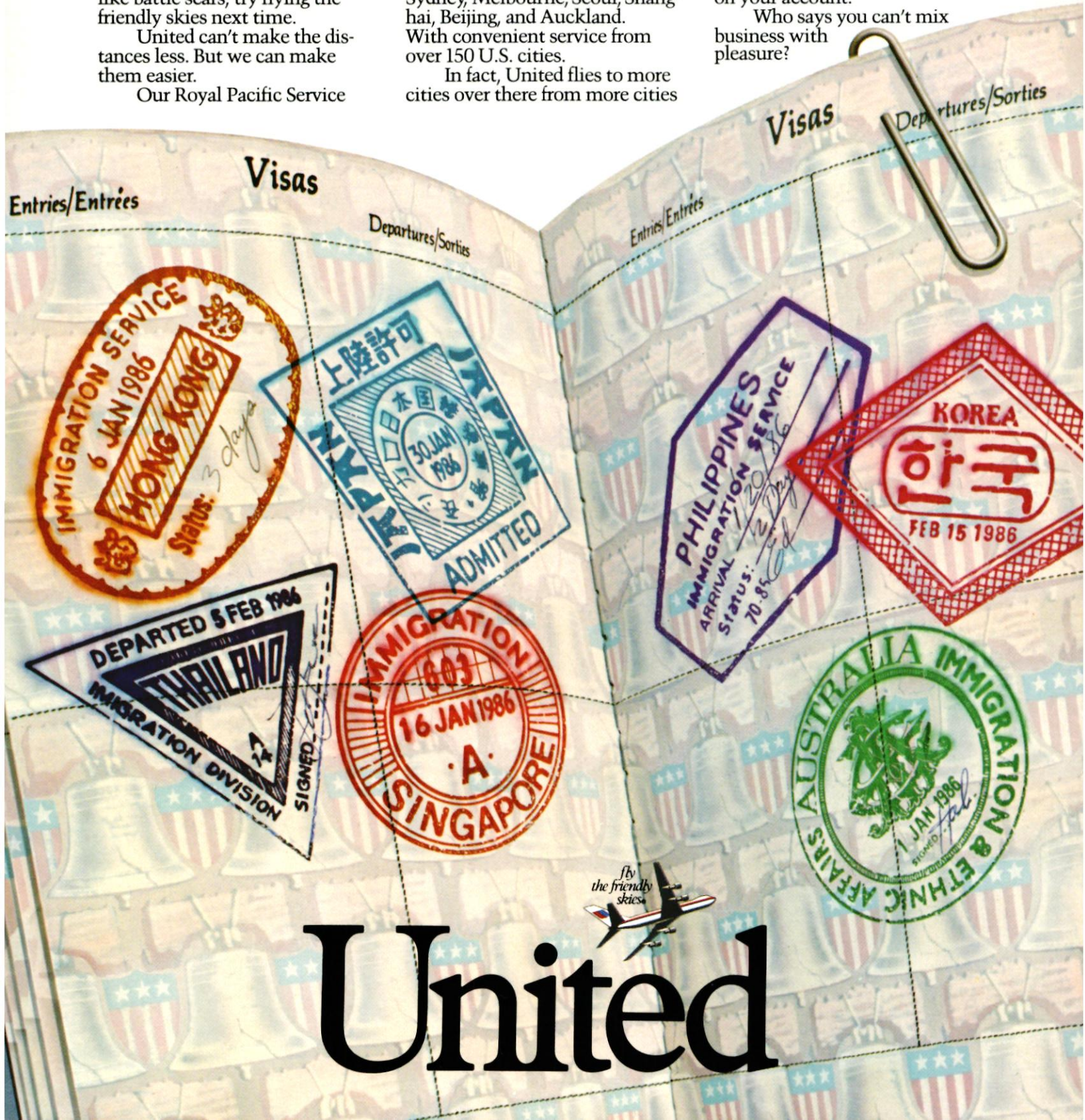
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The China Business Review

The magazine of the National Council for US-China Trade

November-December 1986

Volume 13, Number 6

Cover: Translating your trademark into Chinese may be a good idea (page 14). And, while trademark registration is generally voluntary in China, it can offer substantial protection (page 17). *Photo by Douglas Goralski.*



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摘要

JOB CHOICE BECOMES OFFICIAL—FOR SOME

China's market reforms are supposed to invigorate the economy, and they are doing just that in the countryside. But as China's reformers are keenly aware, raising productivity in the urban economy is much more complicated.

The latest target of their efforts is the labor force. Regulations issued in September specify that laborers entering the State-sector work force must be employed under contract. Designed to shake worker apathy and assist the manager in boosting productivity, the new laws seem bold, even revolutionary. They promise greater leverage for managers to hire and fire according to work performance, and greater opportunities for workers to find the job of their choice.

But reading the fine print in the new rules that took effect October 1 reveals that their immediate impact will be limited. The rules affect only new entrants into the work force, so the 90 million State workers already employed will continue to enjoy lifetime job security. With about 2.6 million workers entering the State sector work force each year and only 1.94 million retiring, it will be some 30 years before this entire sector of the work force comes under contract. Moreover, new workers who have attended technical high schools or received advanced education will continue for the most part to be assigned jobs in government organizations and State enterprises without the benefit of contracts.

Mobility even for those workers affected by the new regulations will be limited, since the most highly prized workers can be locked into initial contracts lasting up to 15 years. The State permitted 15-year contracts to encourage enterprise investment in training, but the end result, along with a presumably better-trained work force, will be less mobility for the kinds of workers enterprises most want to hire. The less desirable work-

ers will be easier to come by, since their contracts range from only two to five years.

The probability that the highest skilled workers will be generally less mobile than the average worker is rather ironic, given the State's current emphasis on creating a more rational distribution of scientific and technical expertise. But even if skilled workers were able to sign shorter contracts, it is unlikely that enterprises with an abundance of skilled workers would be any more willing to relinquish their best and brightest than they have in the past.

How well will these reforms be received? Perhaps very well—as far as they go—by managers, who can now recruit new workers by issuing public notices and inviting applicants to take competitive examinations or undergo selective screening. The best-managed enterprises, especially, should have their pick of the job applicant pool. Yet all enterprises hiring contract workers should benefit, since the threat of dismissal is likely to raise such workers' productivity. Rules outlining grounds for dismissal should give managers the ammunition they need to reduce chronic absenteeism and shoddy work performance. And the productivity of all employees may go up as workers with lifetime tenure try to keep up with those under contract.

As for the workers themselves, the blessings of contract labor are mixed. On the bright side, the most qualified new workers will be able to contract their services to the highest bidder. When their contract expires, they can move on to different enterprises if they so choose. On the other hand, this new freedom is obtained at a price. Employees who used to fret over spending their whole lives in a dull, unpleasant factory can now worry about their chances of staying on in one they do like.

A contract worker who loses his job can at least count on unemployment compensation, the cornerstone of the new labor reforms. Adminis-

tered by government officials from funds contributed by State enterprises, the unemployed will receive 60–70 percent of their salaries for the first year, and 50 percent in the following year. The people who may fall through this safety net are workers who “unjustifiably” refuse their labor bureau's job assignments more than once.

The new labor laws are certainly a step in the right direction. Greater mobility should stimulate the development of a labor market with a range of skills and rationalize the value of labor. But reformist attempts to promote mobility will face some obstacles from below. Until the residence registration system is changed, for instance, job markets will remain largely local in nature. And scarce housing may make employees unwilling to leave an enterprise for one further away. These problems have already been noted in certain cities where labor experiments have been conducted since 1980. In Shanghai, job mobility has only ranged from 7 to 10 percent, except among workers whose jobs are exceptionally arduous or potentially health-threatening. —Andrew Ness

SEOULMATES

Sharply critical of the 10th Asian Games recently held in South Korea, North Korea's Party newspaper declared last September that “to participate in the Games means encouraging [South Korean] schemes to perpetuate national division and dictatorial policy.” But China didn't see it that way. What's more, China's 515-member delegation to the 10th Asian Games held in Seoul from September 20 to October 5 ignored North Korea's suggestion that they leave for Seoul indirectly via Hong Kong. Instead they flew directly aboard planes chartered from CAAC, China's national airline.

As the games ended, China seemed pleased with the results. Having placed first with 61 gold medals in

the New Delhi games four years ago, China stretched its lead this year with 94 gold, 82 silver, and 46 bronze medals. Its athletes broke Asian game records in many fields, proving especially strong in swimming and gymnastics. In a surprising upset, however, China's traditionally superlative table tennis athletes were defeated by South Korea in both the men's and women's finals. South Korean teams went on to an impressive finish, winning 93 golds and coming perilously close to overtaking China's lead.

Yuan Weimin, head of the Chinese delegation, said that the Games revealed important weaknesses in Chinese sports. China's teams will undoubtedly work hard to overcome these deficiencies in time for the next Asian Games, which China will host for the first time in 1990.

China's decision to participate in the Seoul Asian Games over North Korean objections is consistent with its policy of separating sports from politics—a policy enunciated on the eve of the 1984 Olympic Games in Los Angeles. Yet, unwilling to cause undue offense to political allies, Beijing has tried to make clear that its presence in Seoul was sports diplomacy only in the broadest sense. Tight-lipped about politics, Chinese sports leaders in Seoul would go no further than inviting South Korean reporters to the Asian Games in Beijing. This was nothing new, as South Korean journalists have already covered Chinese-South Korean sports events in China for the past two years. Meanwhile, in Pyongyang in October, Chinese President Li Xiannian met with North Korean President Kim Il-song, apparently timed to be a symbolic gesture assuring the North of China's continued political support.

But with two-way trade between China and South Korea now topping \$1 billion a year, North Korean officials are not likely to rest easy. And if they have been reading the English-language *China Daily* these days, they will note that "south Korea" has lately begun to be spelled with a capital "S". —DDK

A PIANO IN EVERY PARLOR?

For Americans in 1928, Herbert Hoover's promise of a chicken in every pot had powerful appeal. Urban Chinese in 1986, however, are more likely to be won over with the slogan "a piano in every parlor." Pianos are

selling out so fast that some enthusiasts are now placing prepaid orders with a factory a year or two in advance. In Shanghai recently, lines reportedly formed outside a new piano shop six days before it opened for business. And earlier this year, a leading musical instrument store in Beijing reported 1,000 piano customers on its waiting list. Sales of other Western musical instruments—especially electric organs, accordions, guitars, and violins—are also way up this year, with about 80 percent now going to individuals rather than institutions.

Not even steep price hikes have slowed the "piano craze," as it is called in the Chinese press. Since July piano prices have risen some 30–40 percent, now ranging from ¥2,400 (\$650) to ¥24,000 (\$6,500), largely due to the rising cost of labor and raw materials. The cheapest pianos cost the average worker about two-year's pay; yet according to an informal store survey conducted in Wuhan last spring, factory workers were buying about 40 percent of the pianos. Another 20 percent were being sold to "private entrepreneurs." Although the self-employed are still a small percentage of the work force, they are apparently a major factor in the sharp increase in sales.

Why are so many individuals putting such an expensive item at the top of their shopping lists this year? To be sure, the piano craze can be explained partly by the ever-growing popularity of Western music among both young and old. But another important explanation seems to rest with the attention Chinese parents are lavishing on their only children. Families that can afford to do so (and lucky enough to find supplies in stock) have already bought a color TV, washing machine, and refrigerator—items considered important for the whole family. Once these purchases are made, the next major investment for many families is made to enhance the education of the child.

Of course a piano remains beyond the means of most families, but the limited supply makes it difficult to gauge the depth of demand. China produced 24,000 pianos last year, but half were for export. Even after annual output exceeds 100,000 pianos—China's goal for 1990—piano manufacturers say they expect demand to exceed supply by a wide margin. —DDK

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US Laws Threaten the Future of China-US Trade

Han Xu

Although China-US trade has strong momentum behind it, the present trade volume still falls far short of the potential of both markets. Unfortunately, a number of US trade laws and legislation now being considered by the US Congress threaten to restrict China's exports to the US, and thus jeopardize the prospects for growth in bilateral trade.

Not only are these laws and amendments inconsistent with the US government's oft-stated support for free and fair trade, but they conflict with US commitments—as provided in our bilateral trade agreement—to accord China “treatment no less favorable than is afforded to any third country or region” and to take into consideration that China is a developing country.

A telling example of this inconsistent policy toward China is a proposal by the House of Representatives to amend Section 406 of the US Trade Act of 1974. This proposal would underscore the discriminatory effect of the provision on countries with ideologies different from those of the US by allowing petitioners to single out countries classified as nonmarket economies and subject them to import relief actions (under standards that are not applied to other countries) if their exports to the US are increasing. This is particularly unfair to China since it is a late-comer to the US market, a fact that is often overlooked when the US imposes restraints on China's exports.

Another threat to China's exports is the US antidumping law and proposed changes to it. In handling antidumping cases against China, the US currently treats China dogmatically as a nonmarket economy. We strongly believe that it is not appropriate to continue rigidly labeling China as such. China has come a long way from a unitary planned economy

The US dumping law as applied to China is contrary to what are generally considered the basic characteristics of law—consistency, stability, predictability and fairness.

to one that combines planning with responsiveness to market forces. In fact, some of China's economic sectors are already largely governed by those forces. It is fitting and proper that changes in US trade laws and policies concerning China should reflect price reforms and other economic changes taking place in China.

The US antidumping law as applied to China is contrary to what are generally considered the basic characteristics of law—consistency, stability, predictability, and fairness. Since the US determination of dumping margins is not based on the real cost of the Chinese product, and as a surrogate is selected only after a petition has been filed, it is impossible for China to predict what the arbitrary “fair value” will be. Faced with the constant threat of antidumping petitions, China's exporters are forced artificially to inflate prices. This, in turn, unfairly restricts China's access to the US market. More-

Han Xu has been China's ambassador to the United States since April 1985. This Commentary is adapted from a letter sent by Ambassador Han to some members of the US Congress and administration officials in September.

over, in certain antidumping cases against Chinese products, the Commerce Department unfairly chose suppliers who were at stages of economic development by no means comparable to ours, resulting in the determination of inflated dumping margins.

Rather than addressing the discriminatory effect of current US antidumping laws, certain pending proposals would erect even harsher barriers to China's exports. One such proposal would adopt an artificial benchmark in antidumping proceedings. This approach would ignore the fact that, as a result of recent price reforms, prices of Chinese commodities in most sectors now reflect their costs and enterprises are taking responsibility for their own profits and losses. We are particularly opposed to using the US average import price as a benchmark, because it would severely erode China's competitive advantages in labor and raw materials.

Since 1972 China has run a large cumulative trade deficit with the US. Though the growth rate of some Chinese exports to the US seems high, their total volume is small. Since China's ability to import depends on its ability to export, any barrier to China's exports to the US market will adversely affect our imports from the United States.

It is in the interest of both countries to maintain good long-term economic relations. China continues to pursue an independent foreign policy and to adhere to the principle of equality and mutual benefit in its business dealings with other countries. The US has recognized China as a friendly nonallied country. We hope it will treat us as such and eliminate policies that harm our bilateral economic and trade relations and impede China's progress in achieving economic reform.

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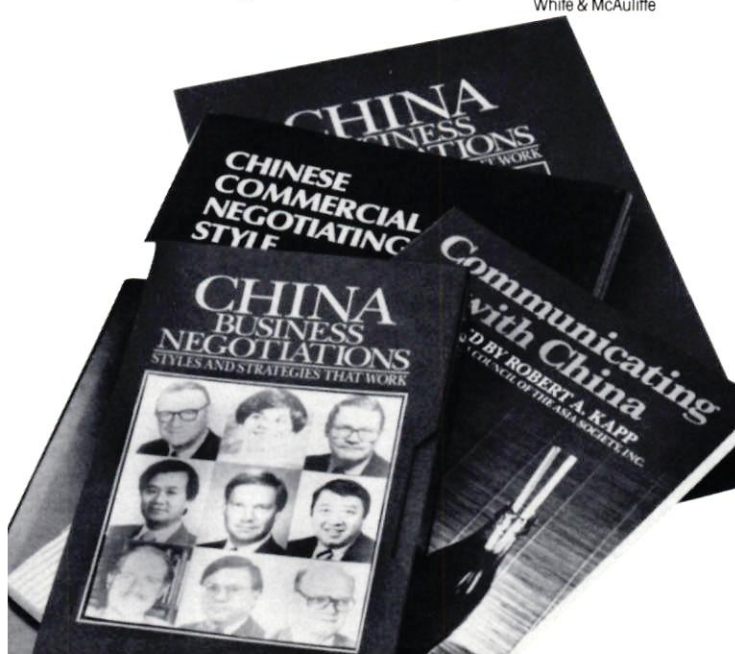
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The Training Component

More and more companies are making training programs in the US part of their China strategy. The question for them is, can it be done better?

Julia S. Sensenbrenner

Many US companies find that offering training as part of technology transfer programs in China helps win contracts. Indeed, most US companies active in China, unless they are involved strictly in import/export activities or direct sales, have made some efforts to train Chinese on the job or in US factories.

By training Chinese workers in the US, companies help to provide technical and managerial skills that China lacks. Trainees also gain a better understanding of American culture and work ethics. But training isn't a one-way street. The Chinese can contribute vital information to a project, such as the quality of materials available or knowledge of the regulations that must be followed in China. Building understanding and honing technical skills can also help to ensure that US-made equipment is better maintained and serviced in China, and that jointly made products achieve quality standards.

But training workers from another culture, accustomed to a different economic structure and working environment, can also pose formidable problems. One US training instructor complains, "the Chinese don't understand how US business works, and many still don't understand it even after being here." To make the most of the time, US companies first need to evaluate who they will train and what type of training is appropriate for their project—and then structure a well-organized program.

WHO TO TRAIN

Having some control over trainee selection is essential for the foreign partner providing training for a project, who naturally wants to train the people who will benefit the most.

Training associated with licensing deals is an exception—companies generally play little or no role in the selection because training is considered part of the technology the Chinese are paying for.

Disagreements between the Chinese and US partners to a contract over the scale of training programs is not uncommon. China's eagerness to train skilled workers abroad can make a Chinese partner more concerned with the number of people involved than with the quality of the program. The Chinese side is especially prone to sending more trainees than necessary if the US side is bearing most of the cost. But it is important to choose an optimal number of trainees. During negotiations, Chinese cost-consciousness can be raised by pointing out that in joint venture projects the JV must bear all or part of this expense, or that covering the living expenses of trainees coming over for licensing agreements will require a sizable chunk of foreign exchange.

Typically, the Chinese side presents a pool of candidates from which the US side either picks trainees or eliminates unqualified candidates before the Chinese make the final decisions.

Companies involved in the selection process can interview to evaluate language and technical skills, review the candidates' credentials on paper, or use an English test (see box on p. 12). One company has developed a useful evaluation method that accomplishes two things at once. An interview is used not only to test English skills, but also to discuss the candidate's proposal for improving the training program. Candidates reveal their understanding of the job

Julia S. Sensenbrenner is associate editor of The CBR.

and technical subjects in discussing their proposal. Training content is debated until an agreement is reached. This also gives the candidate a preview of what is expected during training, so that fewer misunderstandings occur once trainees arrive in the US.

In evaluating prospective trainees, companies should look for basic English competency, solid technical and educational backgrounds, and practical experience. If trainees lack these qualities, they may have trouble learning new techniques and adapting them to the factory in China.

US companies should also inquire about the trainee's employer. Candidates not connected with a Chinese partner's work unit should usually be avoided since they will probably not return to work directly on the project. One company discovered that several problem-making "know-it-all" trainees were actually from design institutes—units responsible for technical innovation within their particular industry. Such overqualified people may be unwilling to participate in manual tasks and are sometimes restless in the classroom. And since the trainees may have access to the plant and engineering departments, US companies may fear for their proprietary technology.

TAILORING THE PROGRAM TO THE TASK AT HAND

The approach US companies take to training programs often depends on the type of deal they are contemplating, although companies retain a wide degree of latitude in structuring their programs.

▶ **A coproduction project** usually requires three to 10 Chinese to spend several months in the US, gaining "hands on" experience with the basic product and manufacturing engineering. This experience becomes a

strong asset during the second phase of the project—implementing production of the product in China. The Chinese side generally pays for the training when purchasing technology or equipment—either as part of the whole deal or in separate training fees that the two sides agree upon before signing the contract.

► **Sales** of equipment to update factories are often accompanied by training. In a typical arrangement, the cost of training will be included in a purchase price. Several Chinese workers visit the overseas supplier to be trained on the machines purchased, such as advanced oil-related equipment, large paper-making machines, and computer-controlled machine tools. Thus, when the Chinese enterprise receives the new equipment, a few employees will already know how to operate it.

► **Joint venture** training scenarios are usually the most complex. A high-level Chinese management team of four to eight people may spend a few weeks in the US first, familiarizing themselves with their foreign partner's operations. Drawbacks such as the brief stay and the Chinese managers' possible unwillingness to get involved with technical details may be offset by their increased loyalty to the venture and heightened understanding of the Chinese line personnel who would benefit from training in the US.

A minimum number of highly skilled Chinese workers are then selected for training abroad. Expatriates working for the venture may often supplement this US program with ongoing training programs in China.

Although usually not covered in the contract, the need for managerial training is increasingly recognized by JV partners. One US company found that their "technical" training program soon mushroomed to include product planning, factory management, manufacturing techniques, commercial issues, scheduling, and ways of working with customers through warranties or service agreements. Exposing trainees to Western practices may increase business efficiency, making the extra expense worthwhile.

► **Gratuitous training programs** have declined in popularity as the number of concrete business opportunities in China has risen. But such programs are occasionally still set up between companies and a Chinese

ministry or other official organization. These programs aim to enhance the foreign companies' image in China by earning goodwill and creating product recognition among officials.

WHAT TO INCLUDE IN THE CONTRACT

Planning for a training program should begin during the project negotiations. To affirm their commitment to training, most companies signing JV or licensing contracts insert a general clause in the contract that might read: "Party B [the seller] shall be responsible for the training of Party A's [the buyer] technical personnel in Party B's relevant facilities at Party A's expense and shall do his best to enable Party A's technical personnel to master the know-how of the above product. (Details as per appendix to the contract.)"

Presenting a comprehensive training plan from the beginning can enhance a company's negotiating position and lead to inclusion of a detailed appendix in the contract, setting forth the specifics of the program as agreed upon by the contracting parties. The appendix sets the ground rules for a training program, although many companies may find they still need to make adjustments throughout the training process. To provide the foundation for a successful training program the appendix should include:

► **Number of trainees and length**

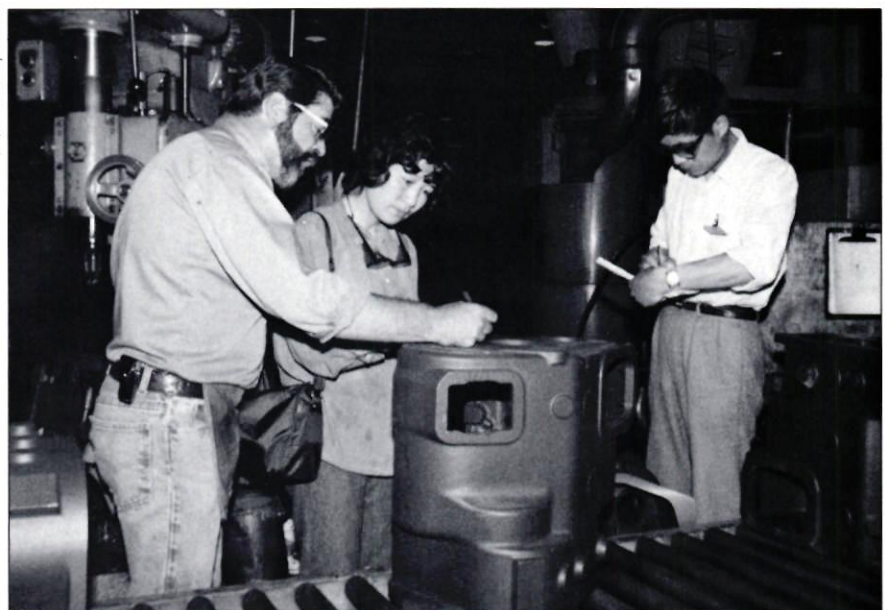
of stay: US companies use different tactics in designating the number of trainees in the contract appendix. Some stipulate a maximum number of people and duration of stay, leaving the flexibility to send fewer people when the contract is implemented and the Chinese have a better idea of their actual needs. Other firms specify only the total number of man-months of training needed—and schedule these later to suit the company's needs. Still other companies state the desired number of trainees in an attempt to gain greater leverage in selecting prospective trainees. The duration of training depends on the type of project; visits range from three to four weeks (to familiarize high-level joint venture management with the US operation) to over a year for some coproduction projects.

► **Qualifications of trainees:** Stipulations might include English competency, education, practical experience, and permanent assignment with the joint venture (if applicable). Some companies require a "qualification or job description" of each person who will come for training, stating type and level of education and number of years on the job.

► **Description of training program:** Some appendices are explicit, with a schedule listing five to six items to be covered each day, or the teaching materials that will be used. Other companies prefer to resolve these details further into the project.

► **Monetary arrangements:** In

Photo courtesy of Eaton Corporation



Eaton Corporation has committed to 382 man-weeks of training over four years as part of its contract to license heavy-duty truck transmissions in China. Here, trainees work closely with an American worker to inspect transmission cases.

TRAINING A JOINT VENTURE TEAM AT LUMMUS CREST

Laughter swept through the classroom as the students realized the irony of US antitrust laws. To the 12 Chinese students in the room, it was inconceivable that in the US, bastion of free enterprise, the government would prevent companies from realizing the ultimate prize for their successful competition in the marketplace. But this is just one of the many new ideas and confusing concepts these Chinese trainees have been exposed to during their time at Lummus Crest Inc.'s New Jersey headquarters.

Lummus Crest and China's SINOPEC International established a joint venture in 1985 to undertake new construction projects and modernize petroleum refineries and petrochemical plants. SINOPEC has extensive experience in China's construction business, and Lummus Crest will contribute state-of-the-art technology in the fields of project management, computer-aided design and drafting systems, management information systems, project controls, design, procurement, and construction management. The comprehensive training program now under way aims to pass on some of this technical knowledge and managerial skill to Chinese trainees at Lummus Crest's US facilities.

The first trainees arrived last July, after the joint venture won a new contract to provide engineering, offshore procurement, and technical services during construction and start-up of a Chinese residue hydroprocessing plant. The trainees came to help finish the project's basic design package and strengthen managerial and technical skills.

The trainees were given a week-long intensive classroom orientation to Lummus systems, procedures, and business practices once they arrived. The Chinese were then split up according to the role they play in the joint venture, and each group was assigned to work closely with a US employee on the job.

Chinese team leader Zhang Gouzhu and joint venture President James Pan have worked long hours to coordinate the schedules of more than 20 trainees who spent one to five months in the US. In fact, Mr. Zhang laments how little time he has had for his own management training, and recommends restricting the number of trainees to 10 or less at one time to make it easier for the company to conduct an individualized program.

While it was a lot of work, the individualized program brought high returns. Trainees with strong engineering backgrounds worked on the job about 90 percent of the time—reading specs, performing calculations, drafting designs on their own, preparing reports, and discussing everything with their counterpart. Since these workers know the actual conditions at the plant in China, they were able to make a major contribution to the technical execution of the project. Trainees responsible for plant design, equipment design, and procurement spent more time exchanging ideas due to the differences between US and Chinese methods.

Trainees involved with management and project control spent most of their time in the classroom. To supplement in-house training, Lummus Crest designed a 40-hour program at Rutgers University's Graduate School of Management. These lectures, interspersed with projects and problem-solving activities, covered such topics as the management process, Western business practices, small-group dynamics, project task management, operations management, marketing, financial management, and accounting. While the students have found some concepts difficult to understand—among them the function and controls on a corporation and the difference between stockholders and partners—they have eagerly participated in classroom discussions.

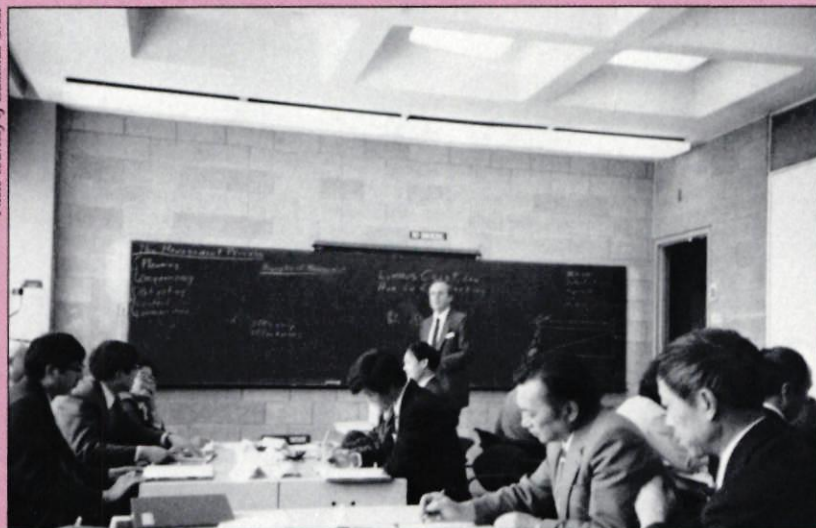
When asked what they liked best,

the trainees' replies demonstrated their growing appreciation of the American system. They included Americans' strong sense of responsibility for their work and high efficiency in finishing their assignments; their well-planned approach; and the ability to dismiss those who are not qualified or not pulling their weight.

The Chinese also had a few suggestions for future groups of trainees. The group should be a mix of old, middle-aged, and young workers. The older ones can contribute experience, the middle-aged are well disciplined and more technically sophisticated, and the younger ones are enthusiastic and can more easily absorb all the new knowledge. The trainees felt they could have made more efficient use of their time if they had learned more English before coming and better familiarized themselves with background on the company and specifications used. Lummus management added that US companies should be flexible in modifying the training program after trainees arrive if the need arises.

James Pan comments, "when they first arrived, I told the trainees that we need to form a homogeneous team, drop our barriers, and work together." The Lummus Crest training program has managed to do just that. Thus when the project moves on to the next phase—the detailed engineering work back in China—the joint venture should reap the benefits of its efforts to train a cohesive team. —JSS

Photo courtesy of Lummus Crest



Lummus Crest held some of its training sessions at Rutgers University. Here David Blake, dean of the graduate business school, reviews the management process for Chinese employees of the Hua Lu Engineering Co. Ltd., a joint venture between Lummus Crest and SINOPEC International.

most cases, the Chinese side pays for airfare, room, and board. The US side usually covers the cost of staff time spent in training, local transportation, and work clothes or tools. However, companies should allow for unexpected costs such as reproducing information, renting visual aid equipment, hosting activities for the Chinese, or even quietly subsidizing housing costs to supplement their visitors' frugal budget.

ELEMENTS OF TRAINING

The key to a successful training program is anticipating situations and problems. Comments Nelson Chu of Honeywell, Inc., "the company should not act in a reactive manner, but must plan ahead." Experienced US companies believe that an effective training program should include the following elements:

► **Hands-on experience.** Most US companies provide on-the-job training. Trainees work closely with an American lead engineer or foreman, who supervises their progress. Trainees may be hesitant to try new things, but working one-on-one with an American counterpart increases the probability that they will pitch in wholeheartedly. And if their Chinese colleagues are not present, they will not lose face when they make mistakes. But even enthusiastic trainees may return to China fearful of putting into practice what they learned in the US, as one US company found when trainees returned to their factory claiming they had not learned various techniques. This incident highlights the need to specify what trainees are taught, so that the US company is not blamed for failing to fulfill its part of the training agreement. Another company circumvented this problem by training the Chinese on machines more complex than their own. When trainees returned to China, they had fewer apprehensions since they found the machines simpler to operate than those they were trained on.

► **Time for review.** Training instructors should be made aware that Chinese education is generally not participatory: students are more willing to listen and absorb than speak. The language barrier makes the classroom even quieter when Chinese come to the US.

Douglas Todd from General Electric Co. advises, "[Chinese trainees] need lots of time to work by them-

selves and discuss among themselves to understand what is being taught." GE did not have this extra time built into its training program, so chose to extend the program to make it more worthwhile. One instructor in Honeywell's training program begins each day by answering questions on material covered the previous day before moving on to a new topic. In class and on the job, teachers must informally test trainees by asking them to repeat what they have learned. This helps prevent misunderstandings and indicates how much information the trainees are absorbing.

► **A task force approach.** While they may be quiet in the classroom, trainees are often more vocal during their hands-on activities. Training coordinators should anticipate that trainees will ask many practical questions. One executive commented, "when the Chinese come here they have a hunger to absorb everything. They want to know about areas and details not always directly related to the successful completion of the project. They constantly ask questions and take up lots of the US company employees' time." To prevent this inquisitiveness from sidetracking the training at hand, Tom Howell of Fluor Corp. recommends using a task force approach, so work is project-specific. Supplying project manuals and job-specific technical manuals can also help satisfy the trainees' hunger for information and provide a useful reference when they return to China.

► **Receptivity to different operating methods.** The Chinese sent to work on electrical, civil, and process engineering tend to have good technical skills, but their project execution style and approach is generally slower. In China, more checks and balances and careful bureaucratic monitoring permit further revisions to projects already approved. In addition, Chinese enterprises tend to be more self-sufficient, and are involved with all stages of a project. This forces Chinese engineers to be concerned with the manufacture of every nut, bolt, or seal, in addition to producing the actual end-product. Keeping these differences in work style in mind, an instructor should let trainees learn at their own speed. The instructor should, by all means, make constructive suggestions, but never let impatience get the upper

hand; direct criticism causes the trainees to lose face.

► **Preparation for company employees.** Many problems can be avoided by giving company employees an orientation before the trainees arrive, to sensitize them to cultural differences. Richard Sinko of Eaton Corp. recommends explaining the Chinese custom of reciprocating gifts, for example. This custom makes it advisable for the US side to keep the cost of gifts low, since the Chinese simply do not have the money to respond in kind. The orientation can also discuss workstyle in a Chinese factory, Chinese etiquette and dietary differences, and set up a hospitality schedule.

Some companies have asked Chinese-American employees to serve as interpreters, instructors in the training program, or "hosts" responsible for some of the trainees' after-work activities. If trainees are with someone who shares at least some cultural or linguistic bonds, the US company tends to get more feedback and a better understanding of Chinese trainees' concerns and difficulties.

AFTER TRAINEES RETURN TO THE JOB

Job reassignment problems plague training programs. The trained workers are often moved within the factory, promoted to jobs outside of their specialty, or sent to a new facility. Sometimes this happens because a factory simply does not use its labor resources efficiently. In other cases, Chinese labor bureaus or ministries responsible for highly trained technicians have transferred the worker over the objections of the factory manager.

Although some fortunate companies retain all their trainees on the project, the experience of one US training coordinator is more common. "Most of the 17 we trained are working within the factory, but they don't necessarily work in the areas they were trained in . . . when I went [to the Chinese factory] I only saw a couple of familiar faces. They went back and trained others, but the training is never as effective the second time around . . . We found the factory was not effectively servicing [our] equipment."

Monitoring trainees' progress after they return to China is essential if companies want to see new skills applied properly. As trainees prove

they can execute the project, this monitoring can decrease. Ongoing contact helps build a loyal training alumni network, and employee transfers may decrease if the Chinese unit knows the US company is willing to continue helping and advising those people trained in the US. One company found exchanging Christmas or

Chinese New Year's cards and hosting "reunion" dinners was a good way to stay in touch with trainees after the US company's role in the project declined. A framed diploma certifying graduation from the training program provides status and a tie to the organization.

In addition to earning goodwill,

training programs demonstrate a prolonged commitment to trainees and the project itself. While not always easy to implement, a good training program can enhance a US company's reputation in China and translate into a more successful project and expanded business opportunities. 完

GETTING READY FOR THE TRAINEES

1. Visas: Most trainees obtain an "H-3" visa. To document a person's non-immigrant temporary worker or trainee status, the sponsoring company must first file an I129B form with the US Immigration and Naturalization Service. This form can be obtained from and is filed with the regional immigration office nearest the factory in the US where the training program will take place. (Applications from the East Coast are now sent to a central office rather than local offices. The address is: Eastern Adjudication Center, P.O. Box 1270, St. Albans, Vermont, 05478-1270.) The office processes the form, notifies the company of approval, and forwards the petition to the appropriate US Embassy or consulate in China, where trainees apply for their visa.

Joint ventures may find that a few of their employees are given L visas. These are issued for an intra-company transferee who has been employed by the company for a minimum of a year. The I129B form must prove the company is a legal entity and that the employee is a qualified manager, executive, or worker, with specialized knowledge required in the US.

2. Export License: If the technology in the project requires an export license, then the training segment also requires one. The application process is the same as technology licensing: obtain an ITA-622P application form from the Department of Commerce's Office of Export Administration (OEA) (P.O. Box 273, Washington, DC 20044) and submit it with a detailed letter of explanation to the OEA. The letter should include type of training (engineering, technical, maintenance), level of competency to be achieved, and details of the technology trainees will work with. To make a stronger case, include a list of other Third World countries with comparable technology and the product's licensing history.

If the technology has been licensed before, companies report few problems in licensing training. But companies must be careful not to expose trainees to technology not included

under the license. For example, although trainees may be allowed to learn about computerization of their industry, they may be barred from access to certain mainframe computers.

3. English-level screening: Due to the one-on-one nature of most training programs and the shortage of Chinese technical translators, trainees should understand and speak some English. To test English competency before accepting an applicant, some companies use a written test to complement the more common practice of interviewing. A documentable test score permits nonsubjective comparison, taking some of the pressure off the foreign firm to accept unqualified trainees. The Chinese unit may not like using rigorous cutoff scores since some nominated trainees will not make the grade. But, in the long run, testing demonstrates the US company's commitment to getting the most out of the training, and will promote more efficient use of training resources.

One test already used in China is the test of English for International Communication (TOEIC). This multiple-choice test, put out by Educational Testing Service (ETS), evaluates the listening and reading comprehension skills of nonnative speakers who must communicate in English in a business, commerce, or industry environment. (The better-known Test of English as a Foreign Language (TOEFL) tests ability to communicate in an academic environment.) ETS also offers the Language Proficiency Interview (LPI) program for companies that want to evaluate spoken proficiency in a more scientific manner. For more information on these tests, contact: Mr. Steven Stupak at ETS in Princeton, NJ (609-921-9000) or Ms. Joanna Kitto at the Institute of International Education in Hong Kong (5-283251).

4. Insurance: Having insurance to cover unexpected medical problems or job-related injuries is a good idea. US companies' practices vary greatly in this area. Some cover trainees under a company-wide policy, while others forego coverage, hoping that no

accidents will happen. For companies interested in insurance to cover injury or illness during the training process, short-term medical coverage is available. One company specializing in insuring foreign visitors coming to the US or US citizens going abroad is International Underwriters/Brokers Inc. For more information, contact Mr. Richard Wallach at 703-255-9800.

5. Housing: If judged by China's standards, most housing arrangements in the US would be adequate, but certain small touches can make the trainees' stay more comfortable. The Chinese often have trouble adjusting to Western food, and appreciate access to cooking facilities. (Cooking for themselves also cuts trainee costs!) Groups generally prefer to stay together, so renting a block of furnished apartments or a house is ideal. The facilities should be conducive to study, since much of the new information will be absorbed after work hours.

6. Arranging Activities: Most trainees are first-time visitors to the US, eager to see the sights and observe American lifestyles. The host company should not expect trainees to initiate these activities or go out exploring by themselves. Instead, prepare a slate of activities that could range from trips to local tourist sites or large cities to barbecues and baseball games.

Most companies have few problems recruiting volunteers to lead trips or host dinners. Indeed, one company found its trainees overwhelmed by the number of events planned. To avoid exhausting the trainees and to coordinate all the activities, one person should be assigned to monitor invitations and supervise transport.

If several trainees are coming at the same time, renting a van eliminates the need to arrange several drivers for each excursion. Trainees working in small towns with little public transportation would benefit by having a driver on call for trips to the grocery store (a stop at an Asian grocery if the city has one may be appreciated) and other errands. Providing a bicycle also gives trainees more mobility. —JSS

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Translating Your Trademark into Chinese

Be sure to do it right the first time

Scott D. Seligman

Names have always been extremely important to the Chinese, and quite a bit of thought goes into naming a new child—or a new company. An auspicious-sounding name is commonly thought to confer good fortune on a venture; a badly chosen one is sometimes blamed for a failure. A name must be carefully selected the first time. “Once a man is given an ill-sounding name,” goes an old Chinese proverb, “he will never be able to wash it off.”

Translating company names and trademarks into Chinese is a complicated problem that requires a number of decisions. Any company that cares about its image in the PRC—not to mention Hong Kong, Taiwan, and other parts of Asia—should be involved in the translation process every step of the way.

There is no one way to translate a given name into Chinese—there are literally hundreds of them. Unlike, say, English to French, where there is often a one-to-one correspondence between proper names—like James and Jacques or Peter and Pierre—Chinese has few generally accepted standard translations of foreign names. And if you entrusted your company name to a dozen translators, they would probably come up with nearly as many versions.

Among the questions a good translator would ask are: should the name be translated literally or transliterated phonetically? Should a company choose a foreign-sounding name or opt for a more propitious-sounding

title at the risk of being mistaken for a Chinese organization? If it's a transliteration, which of China's many dialects should be used? Did the company do business in China before 1949 under a trademark that might still have some recognition value in the PRC? And what about a set of initials, such as NCR or ITT, which really don't translate into anything at all?

Companies with names that have specific meanings attached to them in English—a small minority—are best advised to have them translated directly into Chinese. United Technologies Corp., for example, goes into Mandarin as

Lianhe Jishu Gongsi, a rendering that carries the literal meaning of “united” plus “technologies.” This is true also of companies such as General Motors, or *Tongyong Qiche Gongsi* (“general-automobile”), Continental Insurance or *Dalu Baoxian Gongsi* (“continent-insurance”), and Apple Computer, which becomes *Pingguo Diannao Gongsi* (“apple-computer”). Airline names tend to fall into this category as well—Northwest becoming *Xibei*, which literally denotes that direction, and United rendered as *Lianhe*, the same term as above in United Technologies. Flying

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Tigers, too, becomes *Feihu*—no more or less than the sum of its parts. These are by and large very effective renderings that lose little or nothing in the translation.

But what of names like Fluor, Avon, Kodak, or Morgan Stanley—names that don't really have any denotative meanings at all? Appellations such as these are usually rendered into Chinese syllables that approximate the sound of the English words. There has been some attempt at standardizing such transliterations, but it is still somewhat of a catch-as-catch-can process. Two types of syllables are generally used: those with pleasant meanings and those with either irrelevant or non-existent meanings. These latter words alert the Chinese listener to a foreign name in translation.

Thus Fluor becomes *Fulu*, a pair of characters whose pronunciation sounds satisfactorily like the English name to the Chinese ear and whose literal meaning is “fortunate-land,” while Avon becomes *Aifang*, meaning “love-fragrance.” But Kodak goes into Chinese as *Keda*, “branch-development,” and Morgan Stanley becomes *Mogen Sitanli*, a string of characters that would mean “rub-root-this-level-benefit” if you dug deeply into a dictionary. In fact, these compounds do no more than signal literate Chinese that they are dealing with a foreign entity.

In advertising to the Chinese that a firm is a foreign concern, transliterations like the last one minimize confusion with domestic companies. But they are often unwieldy and seldom particularly pleasant to the ear. Westinghouse, for example, started out



in the market as *Weisidinghaosi*, a mouthful of mostly meaningless syllables that was nonetheless a fairly faithful phonetic rendering. Eventually, however, the company opted for *Xiwu*, worlds apart phonetically but neatly encapsulating the meaning “western-house.”

The accounting firm of Coopers and Lybrand also traded in a cumbersome phonetic rendering, *Kebosi Laibulan*, for *Yongdao*, a compound meaning “eternal-way.” Though elegant in Chinese, the new name has nothing whatever to do with the company’s English name; further, it could easily be mistaken for a Chinese concern. Conversely, there are a few examples of firms that use transliterations even when they don’t need to. Digital Equipment, for example, bypassed an obvious direct translation of its name in favor of the phonetic *Dijiduo*, which carries a pleasant enough meaning—“enlighten-lucky-many.”

The best transliterations are those that are faithful to the original in sound and also manage to carry pleasant—and even better, relevant—meanings in Chinese. The best example of this is undoubtedly Coca-Cola, which goes into Mandarin as *Kekou Kele*, two compounds meaning “tasty” and “evoking happiness,” which also manage to sound a lot like the English. Archrival Pepsi-Cola, whose Chinese name means “one hundred things” and “evoking happiness” (this latter compound having over time become synonymous with the English word “cola”), doesn’t do nearly as well in Mandarin—its pronunciation *Baishi Kele* is a far cry from the original English. Beatrice’s Meadow Gold ice cream, another good case in point, is sold in China under the trademark *Meidenggao*, a fairly close phonetic rendering that translates roughly as “beauty ascending heights.” The meaning is further enhanced by the fact that the first syllable is a common abbreviation for “American” in Chinese. And S. C. Johnson’s insecticide Raid smokes Chinese bugs out as *Leida*, “thunderous-reach,” a phonetic approximation that just happens to use the same characters as the Chinese word for “radar.”



Direct translation is the option of choice if a trademark can be translated faithfully without negative associations, especially if a creative rendering can be devised that uses pleasant-sounding Chinese characters. Alternatively, a good transliteration is completely acceptable and by far the most common solution. In such cases it is probably better to select syllables with auspicious meanings—even at the risk of sounding local—than empty words that convey foreign origin. More companies should consider solutions such as the one found by Weyerhaeuser—the name *Huihao*, a pair of characters meaning “favor-good,” which manage to sound vaguely similar to the original without the awkwardness of slavishly mirroring each syllable. It’s also often advisable to use a word or two to give the listener a clue about the type of business your company is in. Thus Cummins Engine Company is translated as *Kangmingsi Fadongji Gongsi*, the first word being a phonetic rendering of the name, the second meaning “engine.”

The Chinese language in its written form is common to all areas of China. But pronunciation varies considerably from region to region, and so a transliteration that may be faithful phonetically in Mandarin (the native dialect of much of north China and also the national language) may be worlds away from the English when pronounced in Sichuan, or in Guangdong or Hong Kong, where the Cantonese dialect is spoken. In practice, foreign companies generally translate their trademarks with either Cantonese or Mandarin in mind and don’t bother much about other dialects. Many transliterations were done first in Cantonese, since the majority of Chinese living in the West speak that dialect and since Hong Kong was open to foreign marketers much earlier than the Mandarin-speaking areas. So McDonald’s, for example, sells hamburgers in Mandarin-speaking Taiwan under

the trademark of *Maidanglao*, but in Cantonese-speaking Hong Kong as *Makdongno*, a much closer approximation. The characters are the same. Pepsi does better in Cantonese, too—it becomes *Baksi*, which sounds to the Hong Kong consumer acceptably close to the English.

The best approach to the problem of different dialects is to settle on a transliteration in one dialect (Mandarin, by all means, if your principal market is the PRC) and simply live with the fact that it may be a bit off the mark in another dialect—just so long as it doesn’t carry a negative connotation. Even so, a few companies for one reason or another have found themselves with different Chinese names in different Chinese-speaking markets. In Hong Kong, for example, Chemical Bank is *Meihua Yinhang* (a compound that means “America-China bank”). But in Beijing a more literal *Huaxue Yinhang* (“chemistry-bank”) is used. Interestingly, the latter rendering would be thoroughly unacceptable to the Cantonese in Hong Kong, for whom the term *huaxue*, in addition



to its literal meaning, conveys a slang meaning of “to fall apart!” Citizen brand watches are marketed in Hong Kong under the trademark *Xingchen*, meaning “star-dawn,” a perfectly pleasant-sounding compound in any dialect; in TV ads and billboards in the PRC, though, the company uses a phonetic *Xitiecheng*, reasonably close to the English in sound but meaning an improbable “western-iron-city.” Using different translations in different areas keeps the people who print up business cards and advertisements busy, but it poses major problems as China opens further to the outside world, and is best avoided if possible.

Many companies entered the PRC with Chinese names they had been using over the years in Hong Kong, Taiwan, Southeast Asia, and even Chinatowns in North America. Some did a little digging and discovered that some Chinese in the PRC already know them by pre-revolutionary names. Thus Navistar, which was still called International Harvester when it re-entered the China market in the

1970s, did not re-invent the wheel with a literal translation, but rather dusted off its venerable *Wanguo* trademark—words meaning “10,000 countries.” Citibank stuck with its traditional moniker *Huaqi*, or “flowery-flag,” a nickname derived from the American flag that once flew over the bank’s first China office in Shanghai. So did Quaker Oats, whose famous trademark was christened *Laoren* (“old man”) in Hong Kong and remains so to this day. Though relatively few companies have the option of using pre-liberation names, those that do enjoy the distinct advantage of latent brand awareness on the part of the older generation in China.

Firms whose names boil down to initials in English can often get away without translating at all. While most Chinese do not speak English, nearly all of them know their ABCs. It is thus no hardship—and no disadvantage—for ITT to keep its initials and not bother translating the sum of its parts. NCR has also taken this tack, all the more attractive because



the firm’s initials no longer stand for “National Cash Register” as they once did; this is true of FMC, whose product line has expanded far beyond food machinery. And IBM has apparently abandoned the lengthy *Guoji Shangye Jiqi Gongsi*—“international business machines corporation”—for its simpler initials, which are well on their way to becoming a household word in the PRC.

Care must be taken by translators to avoid potentially negative associations. The Chemical Bank example is a case in point—the name it uses in Beijing would be thoroughly inappropriate—not to say humorous—in Hong Kong. And only a Chinese would know that “7-Up,” for example, should under no circumstances be translated literally into Chinese even though both words have obvious counterparts. The problem lies in an obscure Chinese proverb wherein “seven-up, eight-down” expresses “agitated” or “perturbed”—surely not ideas one wants associated with a soft drink. The solution? *Qixi*, or “seven happinesses.”

In all cases translation should be



done by a native speaker of Chinese. Even a foreigner with superb language skills can’t be sure to avoid all possible connotation problems. Nor is native ability in Chinese sufficient; the person must also understand the translation process and know something about the image your company is trying to portray in the market. An excellent translation

would be one that puts your best foot forward with some useful information about your company expressed in Chinese in an elegant way.

Changing a company’s name after it has been introduced is bad business in any market; a firm forfeits any capital it might have invested in the name and must start again from scratch. In China it can be especially confusing. Far better to take the time and effort to do it right the first time. As the Cantonese say, “Don’t so much fear being born into a bad life; a far worse fear is being given a bad name.” 完

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Protecting Intellectual Property

A basic legal framework is emerging, but companies must still tread warily

Jamie P. Horsley

In the 1979 Agreement on Trade Relations between the United States and the PRC, China agreed to "seek to ensure" that US patents, trademarks, and copyrights would be accorded protection equivalent to that granted in the US. China also agreed that it would seek to facilitate enforcement of private contractual provisions protecting industrial property and provide means to restrict unfair competition through unauthorized use of such property rights. But beyond this goodwill gesture, China could do little to offer concrete protection to US investors without enacting the relevant legislation.

China has subsequently done much to improve the basic legal framework for protecting intellectual property. The 1982 Law of the PRC on Trademarks strengthened trademark protection, and the 1984 Patent Law of the PRC afforded protection of patent rights for the first time. Additional protection was provided in the Law on Foreign Economic Contracts passed in March 1985, the Regulations on the Administration of Technology Import Contracts adopted in May 1985, and the General Principles of Civil Law promulgated in April 1986. China's decision to join several relevant international conventions and organizations has been a welcome supplement to legislation in this area.

While some major legal gaps still exist, the new laws indicate that China is seriously committed to protecting intellectual property. Even in cases where the rights of a property owner are not clearly established or enforceable under existing Chinese law, the authorities have shown concern over infringements, assisting some companies in obtaining at least some redress. Important new laws,

such as a national copyright law, are already in the works. All signs, therefore, point to further improvements in China's legal protection of intellectual property.

TRADEMARKS

Basic trademark rules

The importance of trademarks is rapidly gaining recognition in China. According to the Trademark Office of the State Administration of Industry and Commerce (SAIC), 127,056 valid marks were registered in the PRC by the end of 1985—19,028 of them foreign trademarks. With applications in 1985 up 66.6 percent over 1984, it is evident that Chinese enterprises, rural businesses, and individual entrepreneurs are scrambling to get their marks registered to protect them against use by competitors.

In this climate of "trademark awareness," companies can now get substantial protection if they follow the basic rules:

▶The PRC follows a "first to file" rule of protection. Since an applicant does not have to prove ownership or prior use, anyone can register a mark—even one that is registered by a different company elsewhere in the world. The PRC, as a signatory to the Paris Convention for the Protection of Industrial Property (the "Paris Convention"), grants a six-month right of priority to applicants from other signatory countries if the party has already registered the same mark on the same goods in a signatory

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country. Companies should apply to register their marks as soon as possible to prevent trademark pirates from registering them first, and because the registration process can take at least one year.

▶Trademark registration is voluntary, except for trademarks for pharmaceutical products and cigarettes, which must be registered. For other products, a company can use an unregistered mark if it does not infringe upon a registered mark and the company's name and address appear on the product label. However, without registration, a company can claim only so-called "moral rights" in a trademark, which are not legally enforceable.

▶The registration can be revoked if a company does not use a registered trademark for three years or more. "Use" in this case is defined rather broadly to include use in publicity, advertising, or display (including samples that are distributed) in catalogs, and in product literature.

▶Service marks cannot be registered in general, although service marks on products like hotel stationery are registerable as trademarks. As a participant in the Paris Convention, the PRC has an obligation to protect service marks, although it need not provide for their registration. Moreover, the 1985 Interim Provisions for the Registration and Administration of Names of Industrial and Commercial Enterprises specify that foreign companies, as well as Chinese enterprises, can apply to register their names with the SAIC, again under the first-to-file rule. These provisions, however, do not clearly state what rights, other than preventing registration by someone else, such registration ensures.

▶Enforcement of trademark rights is the responsibility of the

trademark owner, so monitoring is required. This may prove to be difficult in a large country like China.

What's in a name?

Many foreign companies have had their trademark applications rejected on the grounds that the marks are too descriptive or generic. China's Trademark Law follows international practice in requiring distinctive words or designs.

Descriptive marks indicating quality, major raw materials, function, or other specific characteristics also cannot be registered, causing problems for some foreign manufacturers. The marks *Maincoat* for clothing, *Sharp* for knives, *Old Spice* for cosmetics, *Foamaster* for foam, and *King of Beers* for beer have all reportedly been rejected on these grounds.

But a recent landmark decision suggests that China is now allowing exceptions to this rule. The change came following China's admission to the Paris Convention in 1984, which affords protection to well known or famous marks. First to be affected by the new policy was the mark *Vitasoy*, originally rejected on grounds that the mark combined the generic terms "vitamin" and "soybean" in English, and "vitamin" and "milk" in Chinese to describe a nutritious drink made from soybeans. Now that *Vitasoy* has won its appeal, other rejected marks may be reconsidered for registration as "famous marks."

The new trademark policy reportedly requires that, to qualify as famous, a mark must pass three tests: (1) the product must enjoy a leading market position in the country of original manufacture; (2) the product must have a high degree of name recognition on the international market; and (3) the product must have achieved a certain degree of fame within the PRC. This last condition can require that a foreign manufacturer pay a good deal of money for advertising and product promotion with no assurance of ultimately being able to register the trademark.

In addition, marks containing a country's name, symbol, or flag, and three-dimensional designs, are not registerable. A mark may also be rejected if it is found to portray exaggerated or deceptive advertising, have discriminatory connotations, or be detrimental to socialist morality and prevailing practice. For example, a mark containing a triple "K" repre-

senting the firm Kuhnle Kopp & Kausch AG reportedly was initially rejected on the grounds that it had the unsavory connotations of the Ku Klux Klan. And a mark that is similar to a mark already registered in the PRC will not be accepted. This prohibition prevents registration of marks whose Chinese translation is identical to that of another previously registered foreign mark or a registered Chinese trademark.

Application procedures

Foreign trademark applications must be submitted either through the Trademark Registration Agency of

CCPIT has helped resolve many trademark disputes involving foreigners. When a Chinese factory tried to use a bottle that looked identical to the well known Coca-Cola bottle, CCPIT reportedly helped persuade the factory to stop using the bottle by convincing the unit that it could surely come up with an even better bottle design.

the China Council for the Promotion of International Trade (CCPIT) in Beijing or China Patent Agent (HK) Ltd. in Hong Kong. Separate applications must be made for each different trademark and for each class of goods on which the same mark is to be used. Registration fees currently run \$275 per class in Beijing, and \$280 per class through China Patent Agent (HK) Ltd. CCPIT requires 15 copies of the trademark and China Patent Agent requires 15-20, together with a standard form of power of attorney authorizing the organization to act as registration agent. Applications for marks used on pharmaceutical products must be accompanied by a PRC public health manufacturing permit from the PRC health administration authorities in the area where the factory manufac-

turing the product is located or, in the case of imported pharmaceuticals, from a designated PRC health department that tests such imports.

After preliminary examination and acceptance, the application is published in the Chinese-language *Trademark Gazette*. If no opposition is filed within three months, the trademark owner receives a certificate of registration valid for 10 years.

Trademarks registered in the PRC may be licensed using a contract. No special form or separate license contract is required for licensing. Many licenses are simply included in technology transfer or joint venture contracts. However, the contract should be notarized in China if it has not been approved by a higher-level State agency, to evidence its legitimacy in the event of any future dispute.

While the Trademark Office is not required to approve licenses, a copy of the contract containing the license must be filed with the Trademark Office and with the local administrative bureau for industry and commerce, to record that the grant of rights is a temporary license, not an assignment. Companies should be aware that the licensor remains liable to the Chinese public for the quality of the goods produced and sold in the PRC under the licensed mark.

If a registered trademark is to be assigned outright, an application signed by both the assignor and assignee must be filed with the Trademark Office. The original certificate of registration must also be turned in so that the assignment can be noted on the certificate. The assignee then assumes responsibility for the quality of the product.

Trademark infringement

The 1982 Trademark Law provides remedies for infringement of registered trademark rights—namely, the unlicensed use of the same or a similar mark on similar goods, the unauthorized manufacture or marketing of a mark and, in general, the unlawful infringement of another person's right to exclusive use of a mark. If a trademark is infringed, the registrant can enlist the administrative assistance of CCPIT's Trademark Registration Agency or the local bureau for industry and commerce, or bring suit directly in the local people's court. A foreign registrant may also turn to CCPIT's arbitration commission, which can assist with formal ar-

bitration or informal mediation.

CCPIT has helped resolve many trademark disputes involving foreigners, even in cases in which the mark was not yet formally registered. When a Chinese factory tried to use a bottle that looked identical to the well-known Coca-Cola bottle, CCPIT reportedly helped persuade the factory to stop using the bottle by convincing the unit that it could surely come up with an even better design. CCPIT's intervention also reportedly stopped a Chinese enterprise from using the *Everready* name for batteries—even though Union Carbide was still in the process of registering that mark in China. Similarly, a food factory in Guangdong was enjoined from using the *Vitasoy* mark on a soybean product comparable to that produced by the trademark owner, which was still appealing the rejection of its application to register that mark in China.

The SAIC reported that the local bureaus for industry and commerce and the people's courts had handled at least 15,570 cases of alleged trademark violations in 1985, a figure that represents a 280 percent increase over 1984. But none of these cases apparently involved foreign firms, which are still reluctant to take their trademark infringement cases to formal court or arbitration proceedings.

By law, infringers are subject to fines of up to ¥5,000, while remaining representations of the mark can be confiscated, marks from goods and packaging in stock must be removed, and damages must be paid to the registrant. Damages are determined on the basis of the illegal profits earned or the losses incurred by the registrant as a result of the infringement. In serious cases, under Article 127 of the PRC Criminal Code, the offender may also be subject to criminal detention, fines, and up to three years imprisonment.

PATENTS

Theory and practice

While earlier legislation recognized the desirability of encouraging invention through rewards, the Patent Law of 1984 broke new ground by also recognizing the proprietary interest of inventors in their discoveries. Of course, patent rights are granted only for new inventions, not for those already patented elsewhere. For previously patented or unpatent-

able technology, the foreign owner must rely in China solely on contractual protection.

Foreigners have been eager to take advantage of patent protection. From April 1985, when the law went into effect, until the end of March 1986, some 19,493 patent applications had reportedly been filed, 35 percent of them filed by foreigners. And by June 1986, 883 patents had been granted by the Patent Office—54 for inventions, 593 for utility models, and 236 for designs.

To qualify for protection, the property must not have been publicly disclosed worldwide, or used in the PRC, prior to the time of filing. It must demonstrate novelty, inventiveness, and practical applicability. Patents will *not* be granted for: scientific discoveries, rules and methods for mental activities (e.g., computer software); methods for the diagnosis or treatment of disease; substances ob-

tained by means of nuclear transformation; food, beverages, and flavorings; pharmaceutical products and substances obtained by means of a chemical process (including pesticides); and animal and plant varieties. Process patents, however, may be obtained for the latter three categories. (For more on the 1984 Patent Law, see *The CBR*, Jan–Feb 1985, p. 50.)

In practice, the rules concerning nonpatentable discoveries have been somewhat flexible. Chinese patent officials now say that software “integrally related” to computer hardware (software designed to solve a particular technical problem) may be patentable. In addition, Article 25 of the Implementing Regulations under the Patent Law provides protection for microbiological processes and the products thereof (but not the microorganism themselves) but requires that samples of the microorganism and information on its characteristics

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be deposited with the designated institution, currently in Beijing or Wuhan, on or before the date of filing; until China joins the Budapest Convention, companies must continue to send samples directly to China. And although only the process used in producing chemical or pharmaceutical products can legally be patented, patent protection has in practice been extended to the methods of use of such products as well.

Applying for patents and claiming infringement

Foreign applicants with no regular residence or place of business in China must file applications through CCPIT, China Patent Agent (HK) Ltd., or the Shanghai Patent Office. All documents must be translated into Chinese, a service that the patent agent can perform for a fee. In the past, some applications originally filed in Chinese and not translated by the above organizations were rejected because the language was not in accord with standard modern Chinese currently used in the PRC. Nevertheless, if a Chinese office translates the application, foreign companies should have a technically qualified expert fluent in Chinese review all translations.

The patent offices and patent agency personnel are required to maintain confidentiality regarding information contained in patent applications prior to publication and may be held criminally liable for any violations of this obligation.

Once a patent right has been granted, the patentee can claim infringement if another party uses its patent without permission. Article 12 of the Patent Law requires that, for an entity to exploit another's patent, it must enter into a written license contract and pay royalties. No unauthorized sublicensing is permitted. After a licensing contract is signed, it should be registered at the local patent office to receive full protection under the Patent Law. A PRC patent holder is protected against any unauthorized commercial use of its patent (or patented process) by any person or entity in the PRC for 15 years for an invention and five years (with possible three-year extensions) for designs and utility models.

The remedies available for patent infringement include an injunction against future infringement, compensation for damages, and criminal

liability for passing off another's patent as one's own. In the case of an alleged infringement, a patentee can sue directly in people's courts or request the administrative authorities institute disciplinary procedures, with an appeal to the people's courts. Any action must be brought within two years of the date of infringement or the date the patent owner should have known of it. Cases will be heard first in the intermediate courts at the provincial or municipal level, with one appeal allowed to the higher people's court. The Supreme Court will hear only exceptional cases. China has embarked on an ambitious educational program to train administrative and legal personnel in patent issues, although no plans for establishing special patent courts have been announced.

NONPATENTABLE INFORMATION

Protecting confidentiality

For those areas falling outside the Patent Law's jurisdiction, the rules are still uncertain. A licensor's protection will only be as good as his contract for technology already covered by a patent abroad, and nonpatentable technology, which includes "know-how" or "trade secrets," as well as those inventions and discoveries not eligible for patenting under the Patent Law.

But recent developments suggest that China may well be on its way to devising stronger protection for nonpatentable property. Chinese law now recognizes that industrial property and proprietary technology have a right to protection. The January 1986 Interim Provisions of the State Council on Technology Transfer (which recognized technology as a commodity) and the May 1985 Regulations of the PRC for the Administration of Technology Import Contracts (the "Technology Regulations") codify this concept. The Technology Regulations obligate a Chinese licensee to maintain the confidentiality of the nonpublic portion of the licensed technology. They also limit the maximum term of most technology licenses to 10 years and require that the Chinese licensee be free to use the technology without restriction after the term expires. Otherwise, the Technology Regulations generally permit the parties involved to decide the scope and dura-

tion of the confidentiality obligation. (The only restriction on this freedom is that a foreign licensor cannot require a Chinese licensee to pay for or undertake any obligations for patented technology once the patent has expired or the patent is found to be "not usable.") Thus, some foreign licensors have obtained an extension of the confidentiality obligation beyond the term of the license itself.

Two local contract regulations for the Shenzhen and Xiamen special economic zones attempt to calm investors' fears of "stolen" technology by expressly prohibiting Chinese personnel from unauthorized use or disclosure of technology protected by contract. Shanghai similarly prohibits workers from taking technical materials, "results," or specialized instruments with them when they are transferred to a new work unit.

But in other locations the foreign licensor has no explicit legal remedy against an individual who is transferred to another enterprise and uses the confidential technology in the new job, unless a contract provision binds that person. It is therefore essential for foreign firms to remember that the laws they may have relied upon in an experimental economic zone do not necessarily apply elsewhere in China.

Many foreign companies have wanted employees to sign an individual confidentiality contract with the licensor. But in China most companies can only get a "best efforts" obligation on the part of the Chinese licensee to take all necessary and appropriate measures to ensure that the technology is kept confidential. It may become easier to have confidentiality clauses inserted into labor contracts as China moves further in implementing the individual labor contract system.

Obtaining remedy

The Xiamen technology import regulations contain a provision allowing the foreign licensor to take back the relevant information, terminate the contract, and demand compensation for losses in the event of an unauthorized disclosure of the proprietary technology. But since no clear statutory remedies applying to the whole country are given in the Technology Regulations or other provisions, foreign licensors should spell out as clearly as possible in the contract the types of remedies they want

enforced if the confidentiality provision is breached.

In the past, the confidentiality of foreign licensed technology could not be enforced because Chinese law did not provide a cause of action against unauthorized third party users with whom there is no direct contractual relationship. The Technology Regulations together with the General Principles of Civil Law of the PRC (the "GPCL") may now provide the legal basis for taking such action. The Technology Regulations recognize the owner's valuable right in proprietary technology, without actually calling it a property right, and Articles 94-99 of the GPCL strengthen this concept by including a natural and legal person's rights in "discoveries and inventions" apart from patent rights in the definition of protectable intellectual property. For infringement of copyrights, patent rights, trademark rights, and discovery and invention rights of both citizens and legal persons, Article 118 provides remedies that include injunctions, eliminating the effects of the infringement, and compensating the losses. The GPLC, however, does not remove all obstacles to enforcing proprietary rights. The language of Article 97 implies that "discovery rights" and "invention rights"—terms not defined in the GPCL—can be obtained only by citizens, and not by legal persons. This may preclude a broad interpretation of such rights as covering trade secrets and know-how. In the US a corporate entity can own these rights.

Nevertheless, Article 117 of the GPCL does provide some basis for arguing that trade secrets and know-how can be protected, by stating that anyone who violates the property of another must either return it or pay compensation to the owner. Article 92 also establishes that unjust enrichment requires compensation to the injured party. These articles, stating novel concepts in Chinese jurisprudence, establish new grounds for bringing actions against unauthorized infringers of intellectual property rights in China. However, a well-worded contract still affords the best assurance a foreign company has under current Chinese law of being able to protect its nonpatentable trade secrets and know-how.

Official sharing

Many foreign companies also

worry about the number of Chinese governmental agencies that are permitted by law to have access to certain types of confidential information. Even the growing number of factories and other endusers with direct authority to solicit foreign trade and investment are still supervised by a "department in charge." In addition, many equipment sales and technology transfers are still made through the auspices of a central foreign trade corporation such as the China National Technical Import Corp. (TECHIMPORT) or the China National Machinery Import and Export Corp. (MACHIMPEX), which represent numerous endusers. These arrangements raise foreign suspicions that intellectual property licensed for use by one Chinese factory could be shared with others as well.

Aware of foreign uneasiness, the Chinese have recently imposed general confidentiality obligations on the Chinese licensee for the duration of contracts negotiated through TECHIMPORT and MACHIMPEX. In addition, foreign companies have negotiated more detailed contract clauses aimed at maintaining confidentiality after the contract term expires or assuring that confidential

information is used only in the licensed plant for the purposes stated in the contract. If an agent trading company or State agency, rather than the actual enduser factory, signs the license contract, such stipulations are essential.

Pharmaceutical and pesticide companies that must provide samples for certification before imports are allowed have special cause for concern. Since pesticides and pharmaceuticals cannot be patented in the PRC, the registrant has no recourse against competing manufacturers who may be given unauthorized access to information about the registrant's product by the reviewing agency. The 1984 Pharmaceutical Control Law of the PRC requires that pharmaceutical inspectors keep confidential all technical information provided by pharmaceutical production enterprises and scientific research units in the PRC. But the law contains no such stipulation regarding information about imported pharmaceuticals. And while the 1982 PRC Provisions on the Registration of Pesticides stipulate that the reviewing agency must keep confidential the information and samples supplied by the registrant, whether foreign or domestic, no remedy is pro-

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vided for breach of this confidentiality obligation.

The GPCL, read together with other relevant legislation, may provide some means for enforcing confidentiality obligations against PRC governmental agencies. Article 121 of the GPCL establishes the rule that a State agency and its personnel must bear civil liability if they infringe the legitimate rights of citizens or legal persons and cause them harm in the course of executing their duties. Although the Chinese licensee, rather than its department in charge or other State agency, is directly liable for any breach of contract, Article 116 provides that the licensee will be entitled to seek compensation from a higher authority that caused the breach of contract. Whether or not the foreign licensor has a direct claim against the higher authority under Article 121 is unclear.

As in trademark cases, foreign companies have avoided formal court proceedings in favor of the informal assistance of CCPIT or the relevant ministries and departments to bring pressure, sometimes successfully, on Chinese entities accused of infringing proprietary rights.

COPYRIGHTS

A copyright law is now under consideration in China, and some foreign companies have been asked to comment on various drafts. The State Copyright Bureau was formed in 1985 to help determine what kind of copyright law is needed in China, and this law is expected to be adopted in the not-too-distant future.

Until the new law is enacted, foreign publications have no copyright protection in China—at least according to the way that concept is currently defined in the US. China does not have a copyright treaty with the US, nor is it yet a party to either of the two major international copyright conventions—the Universal Copyright Convention and the Berne Convention for the Protection of Literary and Artistic Works (the Berne Convention), although Chinese officials have stated that China is considering joining one or the other. Authors' and translators' rights have limited recognition as "moral rights," and authors and translators are entitled to enjoy "copyright" (literally, the right of publication or the right of authorship) under both the 1982 Chinese Constitution and the GLCL. The scope of these rights and the relationship between the author/translator and the public user have not been defined in Chinese law—with one exception. This is the right of Chinese authors and translators to receive remuneration for their work, granted under the 1980 Provisional Regulations for Remuneration for Book Writing (the "Remuneration Regulations"), formulated by the State Publishing Administration.

In the 1950s Chinese authors reportedly had the right to a "contribution fee" from publishers, the right to decide whether to publish their works, the right to publish under the name of their choice, and the right to prevent distortion or unauthorized modification of their works. While not guaranteed by law, these rights were provided administratively through standard form contracts and payment rules adopted by the State-controlled People's Press. In 1957 the Ministry of Culture apparently formulated, but did not promulgate, temporary regulations providing copyright protection to all works published in China, regardless of the author's nationality. But the antirightist movement and the Cul-

tural Revolution reversed these early initiatives. Only in 1979 did authors again begin to receive recognition and remuneration for their efforts.

The Remuneration Regulations were issued in 1980, in which year China also joined the World Intellectual Property Organization (WIPO), an agency of the UNESCO, thus becoming eligible to accede to the Berne Convention after a national copyright law is adopted. In late 1982 the Ministry of Radio and Television advanced copyright concepts by promulgating audio-visual provisions that stipulate that copyrights will be held by State corporations under the Ministry of Radio and Television rather than by the State itself, and that such corporations will have the right to seek unspecified legal redress against copyright infringers. In addition, authors and performers are to be paid royalties, as determined by the ministry.

Existing impediments to the development of copyright law in China are under pressure to change. For example, most authors were once salaried employees of the State whose intellectual labors were considered to belong to the State. But now individuals striking out on their own have an economic as well as artistic stake in obtaining copyright protection.

Copyright is recognized and remedies provided for infringements in the GPCL—these may give foreign copyright owners firmer grounds upon which to demand protection. To date, court actions have been brought by Chinese authors and publishers under the 1980 Remuneration Regulations, although most disputes are still handled informally, and no cases involving foreigners have been reported. But clarification of the scope of rights and protection must await promulgation of a copyright law. Until then, foreign works can be protected only by contract. Some Chinese publishing houses are agreeing to help protect foreign copyrights and pay royalties. To date, however, most have merely invited those authors whose works have been popularized through pirated English- and Chinese-language editions to visit China at the publishers' expense. No matter how well-intentioned, Chinese publishers and State agencies will be hard pressed to prevent unauthorized reprinting and other use of the works as long as China lacks a copyright law. 完

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Understanding China's Bureaucracy

The first step to a better corporate strategy

Kenneth Lieberthal and Michel Oksenberg

Doing business with China's vast bureaucracies continues to frustrate and bewilder the Beijing sojourner today, as it did a century ago. After all, the Chinese invented bureaucracy over two millennia ago, and in the interim they have discovered and perfected all of its excesses. Understanding the nature of China's internal bureaucracy—and the behavior of Chinese officials who participate in it—thus facilitates developing a rational corporate strategy.

UNIQUE CHARACTERISTICS OF THE BUREAUCRACY

Two factors are often cited to explain Chinese bureaucratic behavior—the ubiquitous qualities of complex, slothful, nonmarket economies and certain enduring Chinese cultural proclivities. While these factors are certainly at work, we do not believe they provide the whole answer. If they did, officials in Eastern Europe, Taiwan, and Hong Kong would share the same behavioral traits as officials in the People's Republic. But China's officials often exhibit unique tendencies. Our research has therefore led us to identify several distinctive structural features of the Chinese system, outlined below, to provide a more complete explanation of PRC bureaucratic behavior.

1. Personalized Rule at the Top.

Key to setting the political climate for negotiations and for actually approving very large projects are the top 25 to 35 leaders who rule China. The equivalent of the board of directors and the executive committee of an American corporation, these leaders derive their authority in part from membership in such key decision-making bodies as the Party Politburo, Secretariat, and Military Affairs Commission and the government State Council. They fought their way to the top through a combination of factors: the influence of patrons who pulled them up; the persuasiveness of their policy recommendations; political acumen and knowledge; and the network of personal connections they built over the years.

Although formal rules and informal norms govern their relations, power is more personal than institutionalized at the apex. A rough and shifting division-of-labor exists among these 25 to 35 leaders. A preeminent leader—Mao Zedong in the past, Deng Xiaoping today—sets the ideological tone, helps shape the agenda, and provides initiative and discipline for the group and, through them, for the nation. A small number of respected elders—Chen Yun, Li Xiannian, and Peng Zhen at present—influence

policy, frequently moderate or challenge initiatives of the preeminent leader, and broaden the political base of the leaders. Several generalists—currently including Party General Secretary Hu Yaobang, Premier Zhao Ziyang, and Vice Premier Wan Li—integrate activities and policies of the diverse, specialized bureaucracies over which the other top leaders preside. They and their staffs spend considerable time resolving interagency disputes that are passed up the chain-of-command.

The remaining top leaders are grouped into clusters responsible for particular areas (e.g., foreign affairs, economics, military affairs, ideology, personnel management, education). These specialist groups link the top leaders with the Communist Party and government bureaucracies that actually implement policy in their respective spheres. Officials in every national-level agency know who among the top leaders carries the agency's portfolio or is responsible for it within the highest councils of State.

The personalized nature of rule in China produces an atmosphere of policy instability that tends to breed caution among lower-level bureaucrats. Since policies may well change as leaders shift, there is a tendency (reinforced by other structural dimensions of the system) to push decisions "up" the national hierarchy. This personal element in Chinese governance makes it important for the foreign firm to identify and cultivate the leader responsible for the activities in which the firm wants to get involved. Especially in the case of a large-scale project, the ability of a Chinese agency to get things done may depend on the efficacy of the person who leads that sector. In such a centralized system, lines of authority only intersect at the top.

2. A Fragmented, Segmented, and Stratified Bureaucracy.

Below the apex, the Chinese system consists of a bewildering number of national agencies, as well as provincial and local units. Each has command over a distinctive set of resources and is charged with a specific mission that gives it

Kenneth Lieberthal and Michel Oksenberg, both professors of political science and members of the Center for Chinese Studies at the University of Michigan, recently completed a study for the Department of Commerce: Bureaucratic Politics and Chinese Energy Development (Washington, DC: GPO, August 1986), which draws upon extensive interviews of foreign businessmen and Chinese bureaucrats as well as new documentary materials. Its purpose is to enable American executives to understand the labyrinth of Chinese organizations and related policy processes, and hence to more effectively do business with the PRC.

a measure of autonomy. Each is nested in a particular functional hierarchy that includes certain superior units from which it can receive instructions and several subordinate units that it can lead. A unit tends to disregard injunctions from agencies outside its command hierarchy.

Each unit has a jealously guarded "rank" or "level": supra-ministry, ministry, supra-bureau, bureau, department, and so on. Rank-consciousness pervades the Chinese bureaucracy, and agencies are loath to respond to units below or equal to their rank, or outside their chain of command. To obtain cooperation from a higher ranking unit outside its chain-of-command, the petitioning unit must either have an informal personal connection (*guanxi*) with the target unit or offer some resource that the target unit seeks. This is one source of the ubiquitous bargaining that characterizes the Chinese system.

The structure *within* units also can take many forms, as exemplified by the relationship between a line ministry and the enterprises under its jurisdiction. Some ministries directly manage most of the State-owned enterprises in their sector. Others manage only the most important enterprises in their sector, leaving the remaining enterprises under more decentralized control. The coal ministry manages its key enterprises directly, for instance, while the metallurgical and chemical industries' ministries share control over their key enterprises with provincial authorities. Other ministries (Textiles, Light Industry, and Machine Building, for example) do not manage any enterprises directly. These ministries usually confine their roles to overall planning and balancing, supervision, and setting policy, rather than direct administration of plants.

In addition to ministries, several national corporations with the rank of ministries are responsible for key factories in a particular sector that would otherwise fall under different ministries. Some of these corporations play much the same role vis-a-vis their constituent divisions that major corporations do in the West, such as the shipping, ferrous metals, and petrochemical corporations. Others, such as the tobacco corporation, play a more limited role in the operations of their subdivisions.

Finally, even nonproduction ministries may control some production enterprises. This is true, for example, for the Ministry of Public Security, which runs factories that produce fire-fighting equipment for the 67 factories under the Ministry of Railways, and so forth.

Adding to the complexity of the system is its perpetual uncertainty. Relations between a ministry and its enterprises are continually being modified, as are the number of superior agencies that have a command relationship (*lingdao guanxi*) over a particular subordinate unit.

The implications for foreign firms are twofold. First, simply talking to the relevant ministry may not be the best corporate strategy to pursue in China, although it is probably a good place to start. A great deal depends on the particular sectoral hierarchy in which a firm's activities take place, and the position of Chinese counterparts within

that hierarchy. Second, almost every arrangement in China depends on the cooperation of different units that have no power of command over each other. This demands successful consensus-building on the part of the Chinese parties concerned. Without understanding the nature of the internal consensus that its Chinese counterparts must put together, the foreign firm may misinterpret the needs and negotiating strategy of its Chinese counterpart.

The lead agency in negotiations with a foreign firm typically requires the cooperation and, sometimes, the approval of many other agencies for an agreement to be implemented. As a rule, the larger and more complex the project, the more approvals are required, and the higher the level from which the approvals must come. Many agencies whose cooperation will eventually be important for a project may also send observers to report on the negotiations, and occasionally participate in the discussions. For example, the Ministry of Finance held talks with the oil companies over pertinent tax clauses in the discussions supervised by the China National Offshore Oil Com-



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pany (CNOOC).

Many negotiations with foreigners either accompany or become part of internal negotiations among the affected Chinese partners. The various Chinese agencies frequently have conflicting interests and views, and the internal negotiations to achieve a unified Chinese viewpoint can easily be more complex and acrimonious than the external ones. Thus the patience that Chinese exhibit toward their foreign interlocutors may mask internal dissension on the Chinese side. But once the lead Chinese agency feels the internal setting is propitious, it can act with great urgency, pressing the foreigner in turn to move swiftly.

3. A Complex Internal Bargaining System.

At the core of the Chinese system is an ongoing process of bargaining among agencies, each of which command resources that other units need but cannot obtain simply by demanding or purchasing them. These bargains are generally negotiated among bureaucrats to serve both administrative and personal objectives. Here is how one head of a provincial bureau summarized the situation: "No unit or individual lets you have something strictly according to regulations. You must have *guanxi* or you come up with nothing. The *guanxi* does not refer to old school ties and so on. Rather, the *guanxi* is based on interest—strictly a 'you scratch my back and I scratch yours' situation. The

exchange of goods and favors seals the deal. This situation is pervasive because that is the way things are done at higher levels, and until they do things differently, nobody else will change."

Bargains are struck, *inter alia*, at the local, provincial, and national meetings, which determine the annual plan and the State budget. The central government, for example, reaches a separate complicated agreement with each province as to the flow of revenue between the two (how much money the province will transfer to the center or how much the center will provide in subsidies to the province for its budget), the amount of foreign currency the province can spend on its own, the amount the center will spend on centrally directed development projects in the province, and the quantities of key, centrally allocated commodities (such as electricity, petroleum, coal, empty rail-

road cars, and certain metals), which the center will supply to the province. While the separate parts of the bargain are worked out within the appropriate commissions and ministries—the State Planning Commission, the Ministry of Finance, the Ministry of Foreign Economic Relations and Trade, and so on—the final deal is struck between the provincial Party Secretary and the Governor on the one hand, and the top leaders of China on the other. The final negotiations take place in national planning, economic, and financial conferences and in high-level Communist Party work conferences convened in Beijing, usually from November through March. A similar bargaining process occurs between units throughout the nation. Many of the basic bargains were struck some time ago, and continue year after year with only marginal adjustments.

Some traumatic developments, however, can alter the

BARGAINING OVER THE PINGSHUO COAL PROJECT: CHINA'S COMPLEX BUREAUCRACY IN ACTION

The intricacies of relationships between the national, provincial, and local governments can be seen in the bargaining that took place over development of the Pingshuo coal field. In the early 1960s engineers determined that this bountiful field in Shanxi Province would best be exploited by building 12 medium-sized, modern mines—to be undertaken jointly by the central and provincial governments. The designs were completed on the eve of the Cultural Revolution in 1966, but then set aside for several years.

In 1970 national policy shifted emphasis to developing small-scale mines. Since State appropriations were lacking to develop the 12 mines, some of the best locations for modern mines at Pingshuo were taken over by district, county, and commune governments in the vicinity.

In the mid 1970s, however, some top leaders again became interested in large-scale mine development, and a new plan appeared calling for national-level development of three very large, open-pit mines on a portion of the Pingshuo field. Other parts of the large Pingshuo field were turned over to provincial and local levels for development in exchange.

By 1978 the decision was made to build the first open-pit mine at Antaibao. It appears that, at the same time, a decision was made to rely on foreign involvement. After Deng Xiaoping met Armand Hammer during Deng's early 1979 visit to the US, Occidental Petroleum became the favored foreign partner.

Ten locally run coal mines were already in operation at the Antaibao site, however. Provincial officials assumed the onerous responsibility of shutting the 10 mines at Antaibao, and

the central government compensated the local governments that had opened these mines. According to one Chinese official, "The central government found it harder to halt the exploration and development at Antaibao by local governments than Shanxi did." After all, the central government must rely on the provincial level to reach the counties and communes beneath them.

In return for the favor, the central government struck a deal with Shanxi. To compensate for the anticipated loss of provincial revenue that would result from central development of the Antaibao open-pit mine, the national government promised to provide funds to help develop those portions of the Pingshuo field under provincial control.

But loss of revenue was not the only reason for Shanxi's reservations about the massive Antaibao project. With roughly 75 percent of the rail transportation out of the province already committed to shipment of centrally controlled coal, the province feared that the additional Antaibao coal destined for export would utilize coal cars previously available for provincial coal. Several concessions had to be made to alleviate these concerns, including commitments by the national government to expand rail capacity in the province, to finance construction of the spur line to Antaibao, and to give local mines access to this spur line.

Shanxi also received financial sweeteners. The central government promised the province revenue from a land tax on Antaibao, while 10 percent of the profit tax paid by the joint venture between the China National Coal Import-Export Corporation and Occidental Petroleum would revert to pro-

vincial coffers. In recognition of the value of the land that Shanxi contributed, the province also acquired a 5 percent share of the Chinese equity position in the joint venture, thus giving the provincial government rights to 5 percent of the profits earned by the Chinese side in the joint venture.

Even as the Antaibao project got under way in 1984, Shanxi officials remained uncertain about its implications. Said one official as negotiations were still in progress, "The issue is how the coal from Pingshuo will be distributed, and that has not yet been fully decided. If the coal produced at Pingshuo for domestic consumption is transported to other provinces, the effect on provincial revenue is not yet clear. But if thermal plants are built at the mine and electricity is generated at the mine head, the effect will be to enhance the provincial revenue base." In this case ambiguity worked to the State's advantage since hopes of increased revenue gave the Shanxi official an incentive to support the project.

The official saw other benefits from the Antaibao project as well. For one, two thermal plants already under construction will use Pingshuo coal to increase the electricity supply to southern Shanxi, a potential boon to the region. He noted that production of Pingshuo coal, high in volatility and low in ash, sulfur, and phosphorous, will free up other coal the province now must deliver to coastal provinces. The Shanxi bureaucrat concluded, "What must be understood is that the management of economic development is like playing on a chess board. The calculation of the effect of a project upon a province is complicated."

basis of the exchanges, set off reverberations throughout the system, and require deals to be renegotiated. For example, changes in the management jurisdiction of some Shanxi coal mines and the introduction of a new profit tax on coal production required adjustment of the revenue-sharing arrangements between Shanxi Province and the central government. The basic impulse involved in these adjustments is the desire to compensate for shocks and restore the previous equilibrium. This is one reason that economic reforms proceed slowly—losers in the reform process seek to renegotiate arrangements to recoup the losses brought on by the reforms. The pressure is heavy on reformers in some way to give back with the left hand what they have taken with the right.

Thus, Chinese officials alter broad balances among divergent interests as conditions change over time. The entry of a foreign firm onto the scene qualifies as one such change, making new resources available and raising demands outside the balances struck among the Chinese parties to date. The weaving of a foreign firm into the fabric of existing deals usually requires adjustments in the previous bargains—a prolonged and difficult process.

No aspect of the bargaining system is more important than central-provincial relations. Provinces cannot simply ignore demands from Beijing. At the same time, central-level officials recognize that the cooperation of local officials is necessary for a project to proceed smoothly. Lacking provincial cooperation, the central government may be overwhelmed by the effort to coordinate the myriad local activities required to ensure major projects stay on schedule.

Put differently, most bargains are struck between unequals, but exchanges occur because each has resources the other wants. Therefore, in our view, two popular

The top 25 to 35 leaders ruling China set the political climate for negotiations and actually approve very large projects. They are the equivalent of the board of directors and the executive committee of an American corporation.

concepts of the Chinese system—that it is highly centralized (Beijing-in-command) or a cellular system with considerable local autonomy—are both inaccurate. Rather, the national, provincial, and local levels all command resources that other levels need, but the balance of power is generally in the central government's favor. The central government has more resources at its disposal than an individual province does—but it must elicit the cooperation of the province to achieve many of its goals.

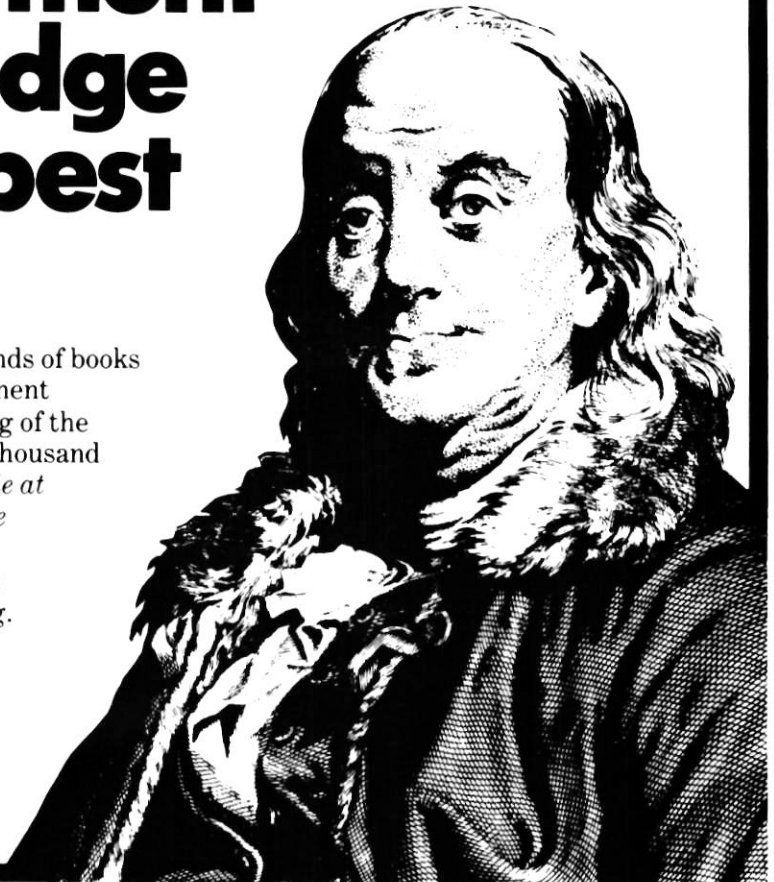
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The province acts as the central government's gate-keeper—providing access to lower levels and on occasion inhibiting this access. While the central government may try to ally itself with a city against the province (as it has done with Chongqing and Wuhan against their respective Sichuan and Hubei provincial governments on the issue of hydropower development), provincial officials can also often block the central government from reaching the lower-level units it wishes to affect.

All sides recognize, therefore, that compromises must be made among all the relevant parties if a major project is to succeed. One provincial official summarized it this way: "Provinces usually welcome a project that the center wishes to build and for which it provides the investment funds. Some issues do arise, of course. But when the center decides to locate a big project in a province, there is inevitably considerable negotiation between the center and province." Negotiations, bargains, and exchange, in short, are essential ingredients of the Chinese system. It is no wonder that many Chinese are tough and effective negotiators with foreigners. They have gained a lot of experience at home, dealing with one another.

4. Ambiguities in Domestic Deal-Making.

Typically, a development project is initiated before firm decisions have been made concerning the allocation of its benefits and costs. This can be seen in the case of Pingshuo coal development (*see* p. 26) as well as offshore oil development. Guangdong provincial officials know they will benefit from the production of South China Sea natural gas and oil, but the precise payoff remains ill-defined—even in the case of the possible joint venture with Arco to develop a huge natural gas field discovered in the Yinggehai Basin. The proponents of a project deliberately preserve this ambiguity so they can build a broad coalition and sustain support of potential beneficiaries behind the project.

Bargains among Chinese bureaucracies are wide ranging, flexible, and subject to constant adjustment. Based on this experience—and to the bafflement of legally minded Westerners—Chinese often feel comfortable with contracts that exhibit the same qualities of ambiguity and flexibility.

5. Professional Negotiators.

A Chinese corporation's chief negotiators are usually not important executives or decision makers. They are, instead, career negotiators—unlike their Western counterparts who are often corporate executives with limited time to devote to key negotiations.

Chinese negotiators are usually housed in the foreign affairs bureaus within each ministry, corporation, or province. While they accumulate considerable technical expertise, their formal training frequently focused on a foreign language. This situation has begun to change, however. In recent years, China has begun to train younger negotiators in law, and legal departments are beginning to play a role in negotiating contracts.

Chinese negotiators do not appear to earn plaudits for a job well done, but they are vulnerable to censure should the contract not adequately protect China's and their units' interests. They usually have little incentive to bring their discussions to an end, either in order to return to their job or to earn a bonus for completing a job. Once the current set of contracts is signed, they move to a new round of negotiating.

It is no wonder that many Chinese are tough and effective negotiators with foreigners. They have gained a lot of experience at home, dealing with one another.

BUREAUCRATIC STRATEGIES

These features of the Chinese political system, coupled with the political uncertainty and economic scarcity that exist in China, help determine the broad strategies that most bureaucracies pursue. Deals with foreign firms are struck when they serve Chinese bureaucratic objectives. The foreign firm can therefore enhance its prospects when its proposals reinforce the often unstated purposes of the Chinese partner. Here are the major (and not mutually exclusive) bureaucratic objectives identified by our research—and the role foreign firms frequently play in advancing them.

■ Strengthen one's own organization.

That is, foster the loyalty of the members of one's unit by providing housing, travel, consumer goods, health facilities, transportation, education, tickets to entertainment events, employment of relatives, and so on. Bureaucrats following this strategy value the creation of jobs—the ability to accumulate a large staff and to keep them employed—more than they value efficiency. This strategy also includes accumulating resources so as to reduce the vulnerability of one's unit to the uncertainty of the political world and the material supply system. A foreign connection provides opportunities for the Chinese enterprise to bestow additional benefits on its members: foreign trips and education, sometimes foreign consumer goods, additional employment opportunities, and so on.

■ Diversify the mission of one's unit.

Develop multiple goods and services within the unit, which can then be used to strike bargains externally. The China Nanhai Oil Joint Services Corporation (CNOJSC), for example, began by directing its efforts solely to providing services in support of the offshore oil effort. As that effort faltered during 1985, CNOJSC moved quickly to diversify into Guangdong real estate, hotel ventures, and other businesses that would reduce its dependence on the oil sector. The foreign connection can facilitate this objective. For example, national defense industries are now diversifying their product lines to include the manufacture of civilian goods, and such firms frequently seek foreign partners to assist them in their diversification efforts.

■ Generate revenue.

Units that earn money have much more clout with the higher levels than those that are a drain upon budgets. Units that are plagued by deficits may become advocates of price reform to change the situation. In the energy sector,

the revenue-earning Ministry of Petroleum enjoys more influence than the deficit-plagued Ministry of Coal—and not surprisingly the coal ministry is a stronger advocate of price reform, including coal price increases. In this context, the foreign connection is considered particularly desirable for the foreign exchange it might yield, a portion of which usually remains with the Chinese enterprise.

■ **Cultivate patrons at higher levels.**

Done to protect one's unit, this tactic is so pervasive that it would be difficult to identify an official who does not at least attempt to utilize it. The foreigner can play a very important role in this process, particularly during visits to China. When foreign business people call upon high-level officials in Beijing or provincial capitals, they enable the middle-ranking officials with whom they are negotiating to brief the higher-level officials before the meeting about the project. The hope is that during the meeting with the foreign businessmen, the high-level official will then endorse the project.

■ **Support policies superficially.**

The key to survival is to comply with policy guidelines in

form while covering all bases. Some officials even quietly support a subunit that implements the opposite of current policy. This gives the official the ability, in the event of a policy change, to demonstrate that he was not an enthusiastic supporter of the abandoned policy. This strategy is often adopted by nonactivist, cautious officials. Given the current emphasis upon foreign cooperation, negotiating with foreigners signals support of current policy, while care in negotiating the terms of cooperation signals an appropriate concern with protecting other interests.

■ **Turn one's unit into a model.**

A key strategy of eager-to-please officials who seek publicity is to make their unit one others will be encouraged to emulate. Past leaders of the Daqing oilfield followed this strategy in a way that catapulted them to national power in the 1960s and 1970s. Similarly, some officials who have spearheaded joint ventures have sought to attract attention to their successes.

KNOWLEDGE FOR FOREIGN FIRMS

The foreign firm inescapably becomes an actor in this

NEGOTIATING IN CHINA: FOREIGN PERCEPTIONS AND BUREAUCRATIC REALITY

Foreigners have acquired considerable familiarity in the past decade with Chinese negotiating behavior. The Rand Corporation has published two monographs on the topic, and our own interviews with experienced American, Japanese, French, British, and Norwegian petroleum executives reveal a rich folklore of how Chinese bargain over contracts.

To be sure, Chinese negotiating behavior is partly a deliberate tactical ploy and partly a manifestation of deeply ingrained cultural traits. But the bureaucratic structure also helps explain a great deal of Chinese behavior. Frequently, what the foreign business executive believes and what is actually going on behind the scenes are quite different. Our interviews with foreign businessmen and Chinese bureaucrats provided many examples of how foreign perceptions contrast with bureaucratic reality. Here are four such cases:

Example One: The foreigner perceives a desire to save face: "The Chinese negotiators would refuse to back down. They acted as if the issue was theirs to decide and if we did not yield, the negotiations were at an impasse. They would then ask their higher levels to intervene and overrule them. They therefore did not lose face by being the one to yield."

The bureaucratic reality involves the limited authority of the negotiator: The Chinese negotiators often have little authority. The structure of the negotiations, rather than concern

for face, explains Chinese behavior.

Example Two: The foreigner perceives patience: "The main advantage in the Chinese negotiating strategy is that they were never in a hurry. The Chinese behave as if they had all the time in the world. There is no efficiency in their negotiating approach and this is very frustrating."

The bureaucratic reality involves consensus building. The negotiators, who have little personal incentive to close the deal in any case, are probably trying to secure the necessary clearances and build a consensus for the project among the relevant bureaucracies. Once the clearances are obtained, the Chinese are frequently impatient to close the deal.

Example Three: The foreigner perceives persistence: "The foreign side would think that something was resolved. But the next time they came to the negotiating table, it would come up again, unresolved. It would be raised by the same individual or perhaps by a different individual. The Chinese would keep beating on it." "Many times you reach an agreement, and then the Chinese come back the next day and everything is different."

The bureaucratic reality involves obstruction at higher levels. There is a distinct possibility such situations reflect the inability of the person in charge of the negotiations to win approval from his superior for concessions he has authorized.

Example Four: The foreigner perceives disingenuousness: "The Chi-

nese conveniently forgot the regulations as they are listed in the contract. However, we complained about this and it has been taken care of." "The Chinese kept trying to trade the deal up, even though they were not supposed to attempt to do such a thing at that stage, after the contract was signed."

The bureaucratic reality involves ambiguity. In their own system, Chinese bureaucrats feel totally comfortable in seeking to renegotiate, refine, or reinterpret agreements as conditions change. Chinese counterparts may be ambiguous in the promises they make to domestic supporters about the distribution of benefits that would flow from a foreign project. Once the project gets under way, the internal demands push the counterpart to seek alterations in the contract from his foreign partner to meet the excessive commitments he has made.

These examples suggest that when foreigners encounter difficulties in negotiations, it is worth ascertaining why they occur. Problems should not immediately be attributed to cleverness, deviousness, cultural proclivities, or negotiating strategies. The Chinese partner may be reluctant to disclose his internal problems, and it may be in the foreigner's interest to help his partner out. In any case, by understanding the bureaucratic reality the foreigner gets a better sense of the obstacles he confronts and of the length of time it may take to bring the deal to fruition.

complex landscape, the more so as the scope of its activity or duration of its venture grows. At the very least, the foreign firm must usually fit itself into a bureaucratic iron triangle involving a manufacturing agency, an enduser, and an import-export agency. Foreign airplane vendors, for example, confront the Ministry of Aviation Industry (the manufacturer), the Civil Aviation Administration of China and its branches (the endusers), and to a varying degree the China National Machinery Import-Export Corporation of MOFERT. In the sale of some types of petroleum equipment, the iron triangle consists of the Ministry of Machine-Building Industry and its increasingly autonomous enterprises (the manufacturers), the oilfields (the

The foreign firm inescapably becomes an actor on this complex landscape, the more so as the scope of its activity or duration of its venture grows. At the very least, the foreign firm must usually fit itself into a bureaucratic iron triangle involving a manufacturing agency, an enduser, and an import-export agency.

consumers), and the Ministry of Petroleum Industry (the authorized import agency for certain petroleum equipment).

The foreign company must be sensitive to the needs of its chief Chinese ally and have a strategy to neutralize possible opposition from the other two corners. Typically, the enduser seeks foreign equipment, but the domestic manufacturer exhibits protectionist impulses that can be blunted when the foreign vendor pledges to transfer technology or otherwise assist the domestic industry.

When a foreign company maps out an informed strategy, it should try to identify the key bureaucratic players involved in the various stages of decisionmaking as well as the positions each is likely to adopt. To do this, the company must ask the right questions and know who to approach for answers.

No firm will be able to get satisfactory answers to all questions. Recognizing that knowledge yields power and influence, Chinese bureaucrats tend to hoard information unless its dissemination can serve a discernible purpose. Moreover, the system is in the midst of considerable reform, and many Chinese themselves do not know all the answers. But firms contemplating or already involved in business with the PRC should recognize that, for reasons explained in this article, attempts to answer the following questions are important to strategy and ultimate chances for success. When analyzed in light of the distinctive behavior of China's bureaucracy, this information may provide a concrete basis for optimism or, perhaps more likely, help company executives develop more realistic expectations of the duration of negotiations and the outcome of their activity.

What the foreign firm can ascertain:

Answers to the following four groups of questions are usually ascertainable through persistence and research:

1. Who at the top of the bureaucracy is in charge of the sector involved? If the proposed project is large enough to require top approval, when in the negotiating process will the leader become involved?

2. If the proposal originates with a Chinese agency, at what stage is the project within the Chinese approval process? Has it already been incorporated into the provincial or national annual plan, is it on the inventory of possible undertakings in the Seventh Five-Year Plan, or does the agency propose undertaking it outside the Plan? (The latter is possible, but requires obtaining supplies outside the State allocation system.)

3. What is the rank or level of the Chinese counterpart organization? With what other organizations must the project be coordinated, and what are the ranks of these organizations?

4. How does the project fit into the policy guidelines and organizational mission of the principal Chinese host? Will it be relatively easy for the host to reconcile the project with preexisting commitments, or will the new activity necessitate renegotiating previous deals? Here, of course, is one of the advantages of the small undertaking: it is less disruptive.

Chinese officials frequently will provide the answers to these questions, particularly at the stage in which they are attempting to cultivate foreign interest in the project. Some persistence may be necessary, however, and it pays to pose these questions to several officials to check for consistency in the response. The commercial section of the US Embassy in Beijing and the National Council for US-China Trade may also be able to shed light on these questions.

More difficult questions to answer:

These questions may be more difficult to answer, either due to secrecy or the murkiness of the system. But even partial answers gleaned from snippets of conversation can help the foreigner navigate uncharted bureaucratic terrain:

5. What are the views of the top officials, if any, concerning the proposed business activity? Most important, what is the view of the vice premier or State councillor in charge of this particular activity in the State Council? Does his influence extend beyond this portfolio, i.e., is he a leader with wide influence and staying power? Should support for the project be cultivated among other top leaders? Middle-ranking officials may not disclose such information, and while Beijing or Hong Kong gossip mills are often rife with speculation on such matters, reliable information is frequently unavailable.

Meetings with high-level officials, and a careful analysis of their remarks are the best (and yet not a totally satisfactory) way to probe these questions. Such probes are best made once negotiations have gotten underway and the sticking points begin to surface. Such meetings are not easily arranged, however, and they depend on the size of the project, the stature of the foreign businessman and his firm, and the ability of the Chinese host organization to arrange an appointment.

6. If the proposal originates with the foreign firm, which agencies within China must approve the project? The Chinese interlocutor tends, either as a tactic or due to his own misunderstanding, to understate the approval process

and neglect to identify some of the hidden partners in the negotiation. For large projects, the pertinent bureaus in the State Planning Commission, the Ministry of Finance, the Ministry of Foreign Economic Relations and Trade (MOFERT), and the State Science and Technology Commission are almost certainly involved. What are their predispositions toward projects of this sort?

Establishing contact with the relevant bureau is difficult but not impossible. Foreign firms with Beijing offices or representation in the capital can gradually accumulate a range of personal contacts within these agencies. Hosting Chinese delegations in the US is part of the process of cultivating these contacts. Efforts to develop this capability should begin as soon as a company decides to do business in China, with the realization that a protracted, sustained effort is required before results can be obtained.

7. Typically, a project that has reached the negotiation stage has a history—and the larger the project, the longer the history. Who in the past advocated/opposed the project and why? What is the present bureaucratic lay-of-the-land? What, from the Chinese perspective, are the alternatives to this project: the other ways to use the land involved, to secure the products, and so on? Chinese officials may shed some light on these issues, but if the project is a large one, a foreign firm is well advised to undertake or sponsor research using library materials in the US.

8. Is the host Chinese organization bureaucratically strong or weak? What stature and influence does its leader have and what patrons does the project have at higher levels? What objectives does the enterprise seek through cooperation with the foreigner? How do these objectives

fit into the bureaucratic strategy the organization is pursuing, as outlined above?

Finally, what are the personalities of the leaders of the enterprise? Do they appear to be sycophants or loyalists to their bureaucratic superior, in which case they will defer to his desires? Or are they resolute defenders of the enterprise, in which case they will see the foreign connection as a way of strengthening their organization and generating revenue? Are they cautious, hesitant bureaucrats, in which case they will proceed with the project only after building a firm consensus for it? Or are they eager and ambitious risk takers, in which case they will launch the project quickly only to face difficulties later on?

This last set of questions is among the most difficult to answer, particularly since the negotiators for an enterprise are usually not its leaders. Banquets, visits to the US, and observing the relevant officials at work in China are often the only way to form judgments about the qualities of a Chinese partner.

Even if a company can obtain answers to all of these questions and develop an appropriate strategy in response, success in China is not guaranteed. The high cost of doing business, problems in repatriating earnings, and inconsistencies in the business environment may thwart even the most intelligent strategy. But greater understanding of the Chinese system and information about the specific sector and project being contemplated definitely improve the chances of success. This knowledge helps foreign firms to coordinate high-level corporate visits with progress in the negotiations, and identify the most promising localities and enterprises in China on which to focus corporate time and energy. 完

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Despite strains and growing competition, Japan's position as China's number-one trading partner is not seriously threatened

Japan's China Trade

Deborah Diamond-Kim

Japan's unparalleled \$5.9 billion trade surplus with China last year may have given Japanese businessmen some momentary cause for elation. Yet the very success of Japan's export drive has turned into a major problem this year. Setbacks in bilateral trade are certain, with two-way trade expected to drop by several billion dollars from last year's all-time high of \$19 billion.

Don't expect Japan to be routed from the China market, however. Its China trade in 1986 should still exceed that of other leading trade partners by a wide margin. Moreover, Japan's number-one position in China is likely to remain unchallenged for many years to come. China's irritation with Japan on certain trade and political issues is not sufficient to unravel the intricate network of economic relations that binds both sides.

If economic motivations were not enough, both sides have compelling political reasons to keep trade relations sound. As powerful neighbors sharing a similar strategic outlook, China and Japan can be expected to carefully regulate the stresses and strains of what will continue to be a troublesome, but vital, economic partnership.

Trade imbalance disrupts harmony

Though not nearly as complementary as both sides claim, economic relations do provide a great deal of what each partner needs to sustain economic growth. In exchange for the machinery, steel, and chemicals that Japan can provide quickly, reliably, and at reasonable prices, China can supply Japan with raw materials and basic manufactures. And with Chinese technology and industrial levels some one to two

decades behind that of developed countries, Japan, in turn, believes it has found in China a large and enduring market on its doorstep.

Along with the benefits of China's trade with Japan comes the potential for an enormous trade deficit. To offset its high value-added imports and narrow the trade gap, China must export a large quantity of primary commodities and light manufactures. Yet a country in the throes of modernization draws heavily on its own primary product resources, making increased exports of these products difficult. What's more, market prices for primary commodities are notoriously unstable, and a sudden drop in the prices of just a few key commodities could create a trade deficit where none existed before.

Still, for three years—1981 to 1983—China actually registered a trade surplus with Japan, especially pronounced in 1982 when it reached \$1.8 billion. This was a period of "economic readjustment" for China, in which capital construction projects were sharply curtailed—leading to cuts in Japan's iron and steel exports in 1981, and reductions in Japan's machinery exports the following year.

1984 marked the beginning of a sharp turnaround in the balance of trade. Japanese machinery exports to China doubled and steel rose 20 percent. Enhanced consumer spending power helped Japanese television sales increase fivefold; sales of refrigerators and washing machines tripled. Most dramatic of all was the increase in automobile exports, up 11 times over the previous year. Not

Deborah Diamond-Kim, associate editor of The CBR, wishes to thank JETRO for its generous assistance in the research of this article.

even China's increased sales of crude oil (up 13 percent) and textiles (up 42 percent) could counteract the \$1 billion trade surplus Japan gained that year.

But the strain in relations was beginning to show. In an otherwise fairly optimistic assessment of Sino-Japanese trade prospects, the Chinese trade journal *Guoji Maoyi* declared bitterly in November 1984, "We will not be in the same position as South Korea, Taiwan, and some other regions whose cooperative relations with Japan are merely ones of one-sided reliance."

1985: Year of the deficit

Despite these admonitions, the following year brought the largest foreign trade deficit in China's history—mainly the result of huge increases in imports from Japan. The size of the trade gap seems to have caught both Chinese and Japanese trade experts by surprise. China's imports from Japan rose by 73 percent (against an average of 54 percent worldwide) while China's exports gained by only 9 percent.

Sales of Japanese consumer appliances (up 200 percent) and transport vehicles (notably trucks, which increased by 500 percent) did extremely well. But consumer goods purchases tell far from the whole story. Not to be overlooked are the surge in sales of industrial equipment such as rolling mills and machine tools, which increased in value by 1,364 percent and 359 percent respectively. Exports of steel also rose dramatically to an all-time high of 11 million tonnes, accounting for about 25 percent of Japan's export earnings in China last year.

Growing demand for imports within China are not enough to explain the enormous power of Japa-

nese exports in 1985. Compared to two-way trade of \$19 billion between Japan and China, Sino-US trade was less than half—just \$8.1 billion. And according to US trade statistics, the US even ran a small trade deficit for the second year in a row. The largest US export category, machinery and mechanical apparatuses, increased 105 percent to \$2.3 billion. But Japan's sales in the same category dwarfed the US total with earnings amounting to \$7.1 billion, up 139 percent from 1984. The US sold more low value-added products than Japan, of which lumber was the largest item, and imported more light industrial manufactures from China.

Japan's lead narrows in 1986

China appears to be doing more than just warning Japan about the trade problem in 1986. Japanese exports in the first half of this year have dropped 23.5 percent from the same period last year to \$4.59 billion. Japanese trade officials attribute the decline to appreciation of the Japanese yen, devaluation of the RMB (down 16 percent against major currencies, including the yen), China's shrinking foreign exchange reserves (down to \$10 billion this year from \$16 billion in 1984), and a slowdown in the Chinese economy.

What these officials don't mention are signs that China is not simply cutting back its purchases: Japan is losing out to its competitors in several major export categories this year. Chinese customs figures for the first half of 1986 support this, showing a relative decline in Chinese imports from Japan. In the major categories of purchases from developed countries: chemicals, manufactured goods, and machinery and transport equipment, Japan's market share rose only in chemicals.

Most dramatic was the decline in Japan's share of machinery and transport equipment sales. After capturing 53 percent of the market in 1985, Japan's share in the first half of 1986 dropped to 37 percent (see Table 1). In the competitive high-technology field, Japan's share of telecommunications sales dropped from 77 percent in 1985 to 58 percent in the first half of 1986. Its share of office machine and ADP imports slumped from 47 percent to 34 percent.

If Japan's share dropped in these areas, who gained? West Germany,

for one, whose sales of metalworking machinery and telecommunications equipment rose significantly. The US gained, too, replacing Japan as the leading supplier of office machines and ADP equipment with 53 percent of the Chinese market, up from 32 percent in 1985.

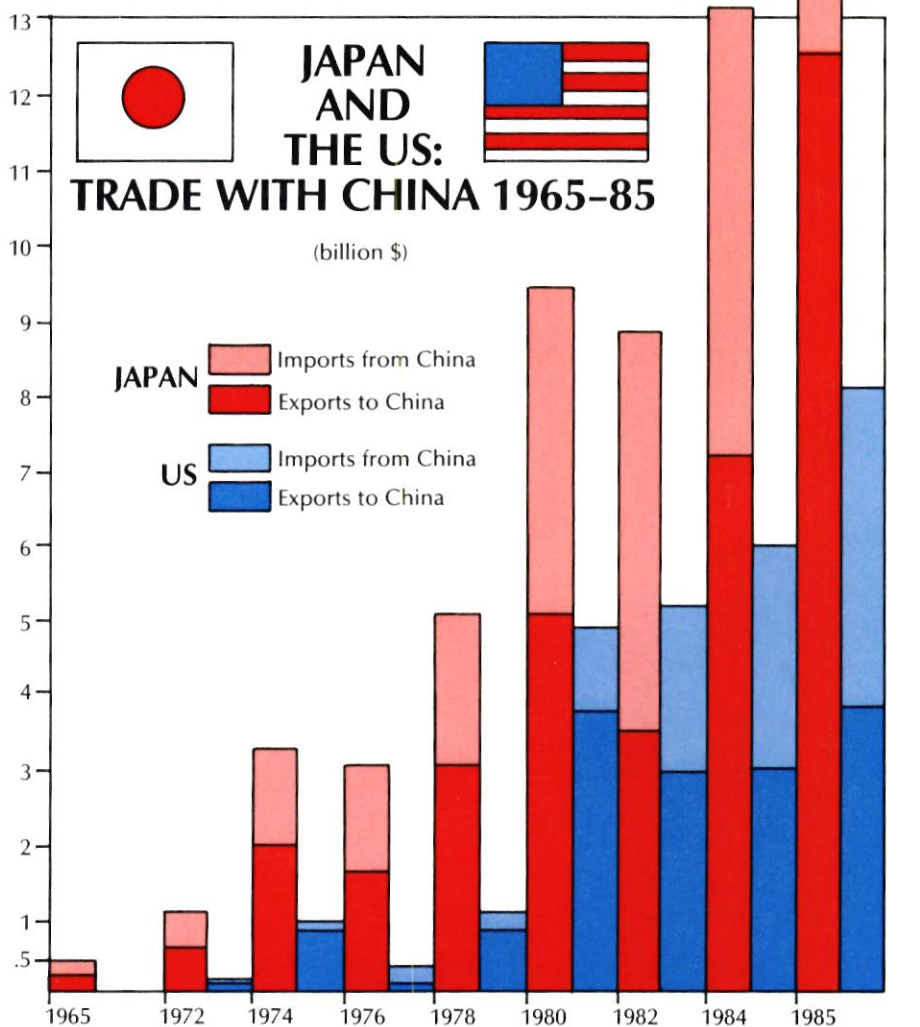
These figures suggest that Japan's trade surplus with China will decline substantially this year, barring any comparable decline in Japan's imports from China. Japanese trade officials report that their trade surplus with China fell to \$1.71 billion in the first half of this year from \$2.84 billion during the same period last year. The Japanese External Trade Organization (JETRO) expects Japan's trade surplus to drop to \$3.2 billion, just over half of the previous year's surplus.

... but dependence on Japan continues

Yet much as China is loath to depend on any one country, its trade remains heavily weighted toward Ja-

pan, even this year. Although Japanese exports are slipping, Japan is still China's leading trade partner, with two-way trade through the first half of this year totaling \$7.5 billion, according to Japanese figures. About half of China's steel, and 40 percent of its machinery, transport equipment, and other manufactured goods still come from Japan. Meanwhile, 50 percent of China's crude oil exports are bound for Japan this year, as well as about a fifth of its food and chemical exports (see Table 2).

By contrast, China accounts for just 6.2 percent of Japan's foreign trade. China's largest export commodity, crude oil, amounted to only 6.5 percent of Japan's oil imports worldwide. In general, Japan's raw materials come from a diverse collection of reliable suppliers around the world, and Japan remains reluctant to take too many chances with the un-



SOURCE: China: International Trade (CIA); Japan External Trade Organization (JETRO)

even quality and delivery of Chinese supplies.

The inequality of this relationship bothers China, although to some extent the pattern is reflected in all of China's trade relations with the developed world. But the sheer size of Japan's trade surplus with China, and the degree to which China depends upon Japanese supplies, place the job of resolving economic grievances against Japan high on China's list of foreign trade objectives.

TACKLING PROBLEMS IN TRADE AND INVESTMENT

Chinese grievances against Japan cut across a wide spectrum of economic issues, but two general concerns predominate—raising China's exports to Japan, and raising the level of Japanese investment in China. The following analysis of these two issues presents the problem, the Japanese response, and an evaluation of the prospects for resolving the issue.

• OPEN THE JAPANESE MAR-

KET.

China has sharply criticized Japanese import quotas and bans, discriminatory tariffs, and strict standards on imported goods.

Under quarantine are certain fruits, vegetables, and all live animal exports. This ban is annoying enough, but the Chinese are miffed when Japan shuns its products in favor of identical products from Taiwan. China is also highly sensitive to what it sees as Japanese tariff discrimination against its products. Carpets are taxed at a rate of 9.6 percent, against a rate of 4 percent for carpets from the United States. High levies have also been imposed on Chinese tea and shoes.

Raw silk is another heavily protected product. Imports are controlled by the Japan Silk Co., which negotiates quotas every year with its Chinese counterpart. From 1981 through 1984, imports of Chinese silk actually declined from 2,400 tonnes to 1,500 tonnes. Without the quotas, Chinese raw silk, at \$25 a kilogram, would fare well against domestic silk costing \$60 a kilogram.

Finally, Chinese exporters complain that nontariff barriers can be nearly as effective as outright quotas in restricting Chinese access to the Japanese market. Exporters of Chinese herbal medicine, for example, charge that import procedures are unnecessarily strict. And Chinese officials claim that standards are changed arbitrarily to protect domestic interests.

China also believes there are opportunities to increase its sales of crude oil, coal, cotton, grains, and nonferrous metals, and has asked the Japanese government to assist its efforts to promote these and other Chinese products with good market potential.

JAPANESE RESPONSE. Japanese officials do not deny the existence of protectionist measures but disagree that they are the main obstacle to expanding Chinese imports. These officials are adamant in their commitment to quotas, citing the political power of groups in protected industries and their concern for displaced workers who might have trouble finding other jobs.

TABLE 1
CHINA'S IMPORTS FROM SELECTED MAJOR TRADING PARTNERS
(million dollars)

	Japan				United States				West Germany			
	1985		1986*		1985		1986*		1985		1986*	
	Value	Import share	Value	Import share	Value	Import share	Value	Import share	Value	Import share	Value	Import share
Chemicals	\$839	19%	\$422	24%	\$1,069	24%	\$324	18%	\$385	9%	\$178	10%
Manufactured goods	4,544	38	1,963	38	429	4	120	3	642	5	342	7
Iron and steel	3,637	51	1,482	48	32	**	15	**	557	8	301	10
Machinery and transportation equipment	8,809	53	2,998	37	2,058	12	1,399	17	1,334	8	1,095	14
Power generating machinery and equipment	180	55	86	47	61	19	26	14	37	11	25	14
Machinery specialized for particular industries	2,017	38	1,127	32	807	15	416	12	790	15	749	21
Metalworking machinery	105	34	92	28	44	14	36	11	56	18	82	25
General industrial machinery and equipment	512	49	256	41	134	13	97	16	56	5	60	10
Electrical machinery and equipment	792	59	301	56	97	7	53	10	50	4	31	8
Road vehicles	2,367	72	564	55	61	2	47	5	111	3	33	3
Other transport	373	25	132	13	456	31	561	57	190	13	66	7
Telecommunications equipment	1,980	77	357	58	63	2	33	5	37	1	45	7
Office machines and ADP equipment	482	47	83	34	334	32	130	53	7	**	4	2

* = first half

** = less than 1 percent

SOURCE: *China's Customs Statistics*
Compiled by Deborah Diamond-Kim.

Currency conversion rates:
1985: ¥ 2.9367 = \$1.00
1986: ¥ 3.2041 = \$1.00

Japan, of course, faces demands for market opening measures from many countries with ambitions to boost sales there. Powerful countries like the US have made some inroads this year, and what progress other countries have made seems mainly the result of US pressure on Japan. But these countries will be hampered in their ability to tackle Japan as long as they lack effective means of retaliation. In this area of trade consultations with China, Japanese officials have demonstrated the least willingness to compromise. Resolution of this problem will depend on the balance of forces within Japan, some of whom support, and others who oppose the perpetuation of government protection for unprofitable basic industries.

A more promising avenue for China's efforts to promote exports is countertrade. This year China is pushing hard for more countertrade transactions with Japanese exporters as a means of selling more to Japan. Japan's general trading companies (*sogo shosha*) estimate that, by 1987, China will require them to accept Chinese goods as compensation for about 50-60 percent of their exports to China. Many of Japan's smaller exporting firms may be hard hit by the new insistence upon countertrade. But the *sogo shosha*, already powerful in Sino-Japanese trade, are likely to become even more so as smaller companies depend on them to manage their countertrade transactions. As the role of the *sogo shosha* declines in North America and Western Europe, where most trade is con-

ducted directly by manufacturers, China's new emphasis on countertrade is likely to intensify, rather than diminish, the stake the *sogo shosha* have in the China market.

In a related effort to respond to China's demands, last year Japanese Foreign Minister Shintaro Abe proposed establishing a joint trading company to boost Chinese exports. The Chinese agreed to this idea, leading to establishment of the Daya International Industry Co. in September 1986 by CITIC and three Japanese partners. Japanese firms will be able to go through this company to export industrial plants to China under compensation trade arrangements.

Other measures that promise to be more cosmetic than real in their impact are the export promotion fairs and "shopping" delegations that Japan has put on its agenda for 1986-87. Although welcomed by the Chinese, these are devices that Japan has resorted to before, with limited results, in its efforts to tackle trade problems elsewhere in the world.

Though willing to help promote Chinese exports, Japanese trade officials contend that most of the initiative must come from China. Chinese products will succeed or fail on the basis of quality, price, and reliability of supply. Quality is a chronic problem affecting Chinese exports from coal to textiles and involves shortcomings in production techniques, handling, and responsiveness to the needs of the Japanese market. Chinese suppliers are often reluctant to reduce prices to compete with rival

suppliers. And Chinese delivery times may be erratic due to domestic transportation problems. Japanese buyers also complain of difficulty obtaining relief from China for shoddy supplies and other breaches of contract.

OUTLOOK. China's optimistic assessment of its export potential in Japan is based in large part on greater price competitiveness in the wake of the RMB devaluation and steep appreciation of the yen. But this optimism may be misplaced. If Japanese competitiveness declines in overseas markets, there will be that much more competition among Japanese manufacturers for their domestic market, making foreign penetration even more difficult. (Where competition is less keen, such as in cotton and ramie production, Chinese exports should do well.) And Japan's 2 percent drop in exports worldwide during the first half of 1986 may lower its demand for imported raw materials and energy. China's exports to Japan are already down by 9 percent over last year—largely due to declining fuel prices. And JETRO projects a 9 percent decline for all of 1986, which would reduce Chinese export earnings to \$5.9 billion from \$6.5 billion in 1985. A look at several important categories of trade shows the difficulties China must surmount to increase its exports to Japan.

Oil and coal. Chinese oil and coal exports face a number of hurdles. Although the Japanese power industry is all in favor of cheap foreign coal, MITI has been urging power plants to make no drastic cuts in their

TABLE 2
CHINA'S EXPORTS TO SELECTED MAJOR TRADING PARTNERS

(million dollars)

	Japan				United States				West Germany			
	1985		1986*		1985		1986*		1985		1986*	
	Value	Export share	Value	Export share	Value	Export share	Value	Export share	Value	Export share	Value	Export share
Food and live animals	\$803	21%	\$427	22%	\$101	3%	\$51	3%	\$93	2%	\$70	4%
Crude materials	692	26	332	22	103	4	43	3	155	6	75	5
Mineral fuels	3,310	46	955	47	686	10	229	11	3	**	0.12	**
Petroleum	3,148	46	882	48	685	10	229	12	0.11	**	0.12	**
Chemicals	228	17	117	16	140	10	71	10	157	11	82	11
Manufactured goods	483	11	230	9	457	10	225	9	128	3	66	3
Textile yarn, fabric, and made-up articles	389	12	188	10	297	9	169	9	94	3	47	3
Machinery and transport	10	1	5	1	44	6	33	9	17	2	19	5

* = first half

** = less than 1 percent

SOURCE: China's Customs Statistics
Compiled by Deborah Diamond-Kim.

purchases of domestic steam coal. Thus, while Japan's coal mining industry plans to phase out production of coking coal by 1991, it may hang on as a domestic supplier of steam coal.

A more serious obstacle is China's poor competitive position. China's coal exports face stiff competition from Australian, South African, and Canadian suppliers. And the high paraffin content of its oil puts China at a disadvantage with Middle Eastern and Southeast Asian suppliers. As a result, while China was to export 47 million tonnes of oil from 1978 to 1982 under the terms of the Sino-Japanese Long-Term Trade Agreement (1978-90), it managed to export only 39 million tonnes. Exports of coking coal were to rise to 2 million tonnes by 1982 but rose to only about 1.3 million tonnes.

In the past China has sacrificed the benefits of using its energy resources domestically in return for foreign exchange. But this option is looking less attractive as commodity prices continue to decline. Moreover, Japanese demand for oil and coal is waning as many energy-intensive industries relocate to energy-rich Third World countries. Japan is turning away from high residual oils in favor of LNG and domestic nuclear and hydro power, a development that Japanese officials say is likely to reduce the relative importance of China's crude oil. China's promise to OPEC last September to reduce its oil exports should also cut into its export earnings.

Minerals and metals. China hopes to boost sales of nonferrous metals by doubling domestic output during the Seventh FYP. Yet China exported only \$400 million worth of all kinds of nonferrous metals worldwide in 1985, while importing \$800 million worth in return. Even Chinese officials admit that China will remain a net importer of aluminum, lead, and zinc for at least another five years—probably much longer according to outside observers. China's exports of tungsten, a moderate foreign exchange earner, will be cut to force prices up on the world market. And boosting other metal exports will be difficult in light of China's growing domestic demand, power shortages, and transportation bottlenecks. Even if China could substantially increase its nonferrous metals exports, it would still have to worry about qual-

ity, which has made Japanese importers reluctant to buy even small amounts of these metals. Chinese tin, for example, has considerable export potential, but cannot compete with the quality of supplies from elsewhere in Asia.

Strategic minerals may have greater potential. Although Japan has not yet imposed sanctions on imports of South African strategic minerals (upon which it is heavily dependent), and may resist pressures to do so for some time, it has closely examined the Chinese alternative in recent years. Next year Japan's Metal Mining Agency plans to send a team of experts to Guangdong and Heilongjiang to survey the potential for joint development of vanadium and molybdenum reserves. These resources are essential for Japan's electronic industries as is gallium, for which China is already Japan's most important supplier. And a consortium of 33 Japanese companies has agreed to joint development of uranium in Qinglong, near Beijing. Japan's demand for uranium is expected to double by the end of the century. This is good news for China in the long run, but with mining of Qinglong uranium nearly 10 years away, Chinese uranium exports will not have an immediate impact on China's balance of trade with Japan.

Grain. Japanese imports of Chinese cereals, especially corn, have grown rapidly in recent years and now account for about 20 percent of Japan's overall cereal imports. But pressure to buy more grain from the United States could constrain China's potential in this area. In addition, although Japanese importers find China's ability to fulfill small orders for grain a plus, they are concerned about China's reliability in meeting delivery schedules. At present, China exports corn from only one port—Dalian.

However, China and Japan have recently taken a constructive step forward in their efforts to boost China's corn exports. According to Japanese press reports, China granted a Japanese intermodal transport company permission to ship grain directly from the Chinese interior to Japan and other overseas markets. Japan already has a number of unique shipping arrangements with Chinese corporations, including direct-feeder service from China to Japan.

• INCREASE INVESTMENT AND TECHNOLOGY TRANSFER.

Although Chinese (and foreign) statistics on the level of foreign direct investment are highly uncertain, Japan's level of pledged foreign investment—about \$135 million through July 1986 according to tables compiled by JETRO—appears to be well under 10 percent of total foreign pledged investment in China. These tables also put the number of joint ventures at 125 through July 1986—but the actual number could be much lower since the tables do not identify which ventures have been cancelled or indefinitely postponed.

China would like the proportion of Japanese direct investment to match its share of trade with China. To meet this goal, Japan's share of total foreign investment in China would have to rise from under 10 percent today to about 29 percent—its share of China's foreign trade in the first half of 1986. China also complains that both the amount and nature of technology transfer from Japan lag behind that of West Germany and the United States.

JAPANESE RESPONSE. Japanese officials blame this seeming reluctance to invest on China's poor investment climate. Like other foreign investors, Japanese businessmen are unhappy about China's inadequate legal framework for foreign investment, restrictions on profit repatriation, exorbitant land-use fees, excessive documentation requirements, and the distressing Chinese tendency to abruptly cancel negotiations without explanation. They also argue that managerial and technological levels in most enterprises are so low that sophisticated technology can not be properly absorbed. Nor do they yet have confidence in the level of motivation among Chinese managers and employees, despite China's recent managerial reforms. These concerns are not confined to Japanese firms of course, but Japanese businessmen in particular have a reputation for avoiding risky investments.

OUTLOOK. Some observers believe that fear of enhancing Chinese competitiveness is the most important factor behind the Japanese reluctance to invest. But this theory would hardly explain Japan's preference for investing heavily in the newly industrialized countries of Asia: South Korea, Taiwan, Singapore and Hong Kong. These coun-

tries are already advancing into knowledge-intensive and high-technology areas that pose a far greater immediate threat to Japan's competitiveness in world markets than China does. While China's vast human and natural resources and vigorous technological progress may challenge Japan's economic position one day, that day is likely to be at least a century away.

In fact, the most important factor limiting Japanese investments in China does indeed appear to be—as the Japanese say—China's relatively unfavorable investment climate. One has only to look at Japan's stake in ASEAN to understand the importance of this factor. Japanese direct (pledged) investment in ASEAN stood at over \$12 billion through the end of 1985, compared to slightly more than \$100 million invested in China during the same period. ASEAN investment incentives are far more attractive, on balance, than those offered by China. These countries allow freer repatriation of profits, provide cheaper labor, and (with the exception of the Philippines) enjoy a reputation among Japanese firms as politically stable—more so, in Japanese eyes, than China today.

Hard and soft tactics

Despite some new initiatives this year, no dramatic resolution of outstanding problems in Sino-Japanese relations appears imminent.

None of the recent high-level delegations that have met this year have made any breakthroughs. In April Chinese Foreign Minister Wu Xueqian paid a week-long working visit to Japan. In his talks with Prime Minister Nakasone and Japanese Foreign Minister Abe, Wu noted that Sino-Japanese trade problems could be resolved if each side showed respect for the other's "national sentiments." In other words, economic problems can be resolved through initiatives at the highest levels, if the political will exists to resolve them. But no documents were signed at the end of the visit, an indication that the two sides failed to make significant progress.

Although Chinese officials have been sharply critical of Japan this year, they have also proved themselves adept at mollifying the Japanese when necessary. Late last year Deng Xiaoping warned Japan that China's trade deficit could be toler-

ated for one or two years "but it won't do for long." This admonition had its desired effect of stirring up the Japanese business community. By September 1986, Deng was once again stressing the positive, pointing to the long-term potential for even closer economic cooperation. This carrot-and-stick policy, or "hard and soft tactics" as they are called in Chinese, has long been a favorite tool of Chinese diplomacy.

The year of Europe

While such hard and soft tactics are nothing new, Chinese leaders appear to be using them more openly on Japan this year. On the political front, the most noteworthy developments were the separate tours covering nearly every country in Western and Eastern Europe by Foreign Minister Wu Xueqian, General Secretary Hu Yaobang, and Prime Minister Zhao Ziyang earlier this year. Although the *raison d'être* for this massive descent on Europe was mainly political, Chinese headlines hailing the potential for increased Sino-European trade could not have failed to make an impression upon Japanese businessmen. And Chinese leaders and commentators have repeatedly praised Western Europe for its efforts to transfer technology to China, promising rewards for such behavior.

Will anything come of China's European campaign? On the positive side, the yen appreciation appears to have given Western European firms a wedge into the China market. Their opportunities are especially good in public telecommunications and some categories of industrial equipment. The willingness of some Western European governments to compete with Japan in offering concessionary loans is another plus.

But trade with Western Europe has its limitations, as China is well aware. West Germany aside, Western Europe has been slow to take a serious interest in the China market, with trade and investment concentrated in the developed countries, in resource-rich countries in the Middle East and Africa, and to a lesser extent in Eastern Europe. Second, as the Chinese themselves acknowledge, albeit reluctantly, European firms have generally found it harder to adjust to changing market conditions in China and to offer competitive prices. Third, although the Chinese have

been more conciliatory in their approach to European protectionist measures—when compared to the tough stance they have adopted in trade negotiations with Japan and the US—obstacles to expanding exports to EEC countries appear no less thorny.

Finally, China's trade deficit with Western Europe, while small compared to the deficit with Japan, is still sizable. In 1985 West Germany, which regularly accounts for about half of all EEC trade with China, (\$3.1 billion in 1985) racked up a trade surplus of over \$1 billion in its trade with China. As it turns out, the ratio of West Germany's trade surplus to two-way trade is virtually identical to the level of Japan's trade surplus as a share of two-way trade with China. Put another way, both countries exported twice as much as they imported from China last year. Although China's exports to EEC countries are growing faster than its imports from them, it would be premature to identify this as an enduring trend.

Thus, China's upbeat prognosis for the future of Sino-European trade and cooperation should be read carefully. The emphasis is on expanding Sino-European ties, but not on lifting them above China's relations with Japan.

Trade between China and Eastern Europe faces its own set of obstacles. First, Eastern Europe is not capable of offering the kind of technological inputs that China needs to modernize rapidly. Second, although Eastern Europe may be able to absorb an increasing percentage of Chinese exports, it will have to pay for these through barter arrangements that do little to help China earn more foreign exchange.

The political dimension of China's relations with Eastern and Western Europe should not be overlooked. China has courted the EEC ever since 1964, when it stopped viewing the economic body as a bastion of international capitalism, and began to see it as an independent force eager to resist US hegemonistic designs. China hopes to encourage a more united and independent Europe—a continent it describes as the "cockpit of US-Soviet contention"—as a means of lessening the influence of both superpowers.

Since Chinese strategic thinkers have long equated economic power

with political influence in world affairs, it stands to reason that China would consider growing European economic strength in its strategic interest. As a recent issue of *Xiandai Guoji Guanxi* puts it, "It will be both economically and strategically significant for Western Europe to capture a 'fair and reasonable' share of the China market." The question is, how far is China prepared to go to support these strategic objectives? China is not likely to favor European firms over their Japanese rivals if the latter offers better terms. But if all else is relatively equal, some analysts say, the European firm may have the advantage. And if the yen appreciation brings European prices more in line with those quoted for Japan, European companies may indeed gain new opportunities. But as Table 1 shows, even West Germany's share of the China market looks rather small when compared to Japan's. The inroads it has made this year in no way challenge Japan's overall dominance of exports to China.

From China's perspective, an effective campaign to diversify trade may force Japan into making more concessions. Even if diversified trade does not reduce the overall level of China's foreign trade deficit, China will be more content with a deficit dispersed more evenly among many partners.

One non-European country having the potential to become a strong rival to Japan in the China market is South Korea. Like Japan, its government and businessmen have an almost feverish commitment to strengthening economic relations with China. Its pattern of trade with China is much the same as that of Japan's and it often rivals Japan in the price of its manufactured goods. And China's inhibitions against trading with South Korea (with which it has no diplomatic relations) are steadily abating. Two-way trade was estimated at \$1.4 billion last year.

A closer look at the pattern of Sino-Japanese economic relations, and the tremendous efforts of Japanese firms in China suggests, however, that all of China's leading trading partners have a long road to travel before they can challenge Japan's role as China's number-one trading partner.

The future

Japanese companies generally ex-

pect trade with China to temporarily level off at about \$15 billion in 1986 and 1987. They realize that China is likely to meet a greater percentage of its import requirements through European and US suppliers as long as Japan's trade surplus remains high.

The upward climb of the yen that began last September has not made matters easier. China has responded by demanding hefty discounts on some Japanese exports. Granting these discounts, which range from 3–30 percent, has already hurt Japanese exporters, especially small traders.

The way US businessmen see it, however, the yen appreciation has not had a sizable impact as yet on Japanese competitiveness in the China market—at least in areas where the Japanese stake is greatest. Most US firms competing with the Japanese for high technology sales, for example, say they have yet to see Japanese products lose their price competitiveness this year. Japanese companies who can afford to do so appear willing to accept razor-thin profit margins, or no profit at all, to keep prices attractive in the short term. And the *sogo shosha* have the added options of exporting more from their bases overseas and linking up with foreign firms doing business with China. The yen appreciation has made the "international strategic venturing" approach increasingly attractive this year, says A. E. Klausner of Mitsui & Co. USA. But, as Table 1 shows, something is affecting Japanese competitiveness in the first half of this year. The yen appreciation, combined with greater Chinese responsiveness to alternative suppliers, seems the logical explanation.

Despite the obstacles Japanese traders see to increased trade and investment in China over the next two years, most remain optimistic over the long-term. This optimism is based in part on a widely held belief in the cyclical expansion and contraction of China's import volumes. Writing in the July 1985 issue of the *Journal of Japanese Trade & Industry*, Tamio Shimakura, director of the Institute of Developing Economies' current affairs department, noted the tendency of Chinese imports to surge in the two years preceding the start of a new five-year plan. Basing their forecasts on this assumption, many Japanese China analysts believe that bilat-

eral trade levels should begin to recover in 1988.

The notion of Chinese import cycles may have merit. But as Japanese businessmen themselves admit, Japan's export prospects rest on more than Chinese economic cycles. Still unclear to Japanese analysts is how China will be able to close its massive trade gap with Japan over the next few years. Changes in China's pattern of exports to Japan—now heavily concentrated in primary commodities and basic manufactures—will take decades, not a few years, to accomplish. Raising the quality of these exports is also a long-term challenge. And major increases in Japanese investment will probably occur only after substantial improvements are made in the quality of China's infrastructure and labor force.

Thus, although Japanese exports to China are likely to revive in 1988, continuing strains over the bilateral trade imbalance may affect the degree to which Japanese firms can capitalize on future surges of Chinese imports. Japanese businessmen will fare better if the trade imbalance, now half that of 1985, can be cut in half again in 1987.

But even if Japan's trade surplus stays constant over the next few years, bilateral frictions will likely be tempered by the generally solid foundation upon which the Sino-Japanese economic relationship is built. China and Japan share a strong economic interest in close ties, reinforced by a political commitment to closer cooperation on strategic issues in the Asian Pacific region. Though disappointments mar relations over specific issues, both sides share a belief in the overarching importance of the Sino-Japanese relationship.

Japanese competitiveness in the China market will also continue to benefit from the pattern of cooperation that binds Japanese firms and government agencies, the intimate personal relationships formed between Chinese and Japanese executives and officials, and most important, from the persistence of Japanese businessmen involved in the China trade. The article that follows examines the issue of Japanese business practices in China, and how they strengthen Japan's already strong position in the market. 完

Well-cultivated in China



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The Power of Commitment

Deborah Diamond-Kim

Always, the pace of Sino-Japanese economic relations has been set by the governments of the two countries. And on trade issues, the governments of Japan and China have cooperated like no one else.

Without question, government support is an important element of Japan's success in the China market. Japanese corporate efforts are made that much more effective by a pattern of cooperation between the Japanese government and the private sector—and within the private sector—that can give Japanese firms an advantage over their competitors. This marshaling of forces helps Japanese firms to 1) react quickly to changing market conditions within China, 2) benefit from the favorable and extensive soft loans Tokyo extends to China, 3) cover losses suffered in one area with profits earned from another activity, and 4) exert pressure on Chinese importers by linking negotiations on one project to others also under consideration or already under way.

But the most distinctive characteristic of Japanese efforts—among large and small traders alike—remains Japan's commitment to boosting exports, on the world market in general and the China market in particular. As firms from the United States know all too well, Japan's unique combination of government-private sector cooperation and determination to export are hard to beat.

Personal relations provide the glue

Since Deng's first visit to Japan in 1978, Chinese and Japanese leaders have frequently exchanged high-level visits marked by extraordinary warmth and fanfare to demonstrate the value each side ascribes to relations with the other. Deng Xiaoping

has visited Japan twice in fact—once before and once after his January 1979 trip to the US following establishment of Sino-US diplomatic relations. Former chairman Hua Guofeng had his day in Tokyo in 1980, Prime Minister Zhao Ziyang in 1982, and General Secretary Hu Yaobang in November 1983. Japanese Prime Minister Ohira visited Beijing in 1979, Prime Minister Senko Suzuki in 1982, Prime Minister Yasuhiro Nakasone in March 1984 and again this November.

In recent years the flurry of high-level visits has given way to less dramatic, but important regular contacts such as the yearly conferences between Japanese and Chinese ministers of trade, as provided under the Long-Term Trade Agreement. These consultations were extended to the vice-ministerial level this year.

This personal dimension is more prominent in Sino-Japanese trade relations than in China's relations with any other capitalist country. Among some of the older generation of political leaders and businessmen, personal ties with the Chinese have been developed over a period of three decades. Some even date from the 1930s. Among the members of the Japan-China Economic Association (JCEA), for example, is Yoshihiro Inayama, former president of Nippon Steel, who concluded a five-year steel agreement with China in 1958 and went on to play an integral part in major trade negotiations in the following decades. Another member, Kaheita Okazaki, began his career as a foreign service officer in Beijing immediately after World War II. Yaeji Watanabe, former JCEA director general, was active in China trade in the early 1960s as a MITI official.

Men such as these, with their intimate ties to both government and

business, also illustrate how blurred the lines between government and business really are, and how, therefore, even ostensibly private trading activities have an official aura to them—one that readily appeals to the protocol-conscious Chinese.

Not only have the Japanese sent more business delegations to China than any other country, but each delegation represents scores or even hundreds of business interests in Japan. The privileged access of these delegations to China's top leaders is legendary. Nongovernmental organizations (which have a quasi-official cast to them nonetheless) such as the Japan-China Economic Association, Japan-China Society for the Exchange of Economic Information, Keidanren (the Japanese federation of trade unions), and countless other business and regional organizations constantly shuttle across the East China Sea to explore a host of prospects for economic cooperation. The comprehensive links between economic groups in Japan and their counterparts in China is also apparent in the number of "sister relations" Japan has developed with Chinese cities, counties, and provinces: more than 80 in 1985, nearly twice the US-China total.

On the corporate level, too, the Japanese are keenly aware of the importance of cultivating good relations with the Chinese. Their efforts have ranged from inviting Chinese officials to lavish banquets, and offering gifts and travel benefits, to less glamorous but highly effective strategies such as persistent calls on officials and prospective customers. These personal ties are developed not only by well-staffed offices in China (consisting largely of men who uncomplainingly endure the hardships of a long stay in China) but also by high-ranking executives from Japan. The general manager of Mitsui's China Department has reportedly made more than 60 business development trips to China over a period of 20 years.

Ask a Japanese businessman in China what the key elements of success in the market are, and he is likely to tell you: fluency in Chinese and close personal ties with bureaucrats and potential customers. Large Japanese companies do not consider language training a luxury, as some Western firms do. The majority of Japanese representatives in China

were posted there only after extensive language training at Chinese institutes and universities. Mitsui reportedly has 120 employees fluent in Chinese; C. Itoh boasts 150.

The importance of language is underlined in the comments of a Chinese chemical factory manager in Beijing. Pointing to a shortage of English-language speakers in the average Chinese factory, the manager notes that many Chinese enterprises simply find it more convenient to seek out the numerous Japanese representative offices in Beijing—where they can always count on finding professionals fluent in Chinese. But, the manager adds, seeking out Japanese firms is more a matter of convenience than of general preference.

The role of cheap money

One of the most telling signs of Japan's stake in China is the level of free aid the government has been willing to provide. In 1982 China replaced Indonesia as the largest recipient of Japan's overseas development assistance, with \$389 million, or 14 percent of the total. By 1984 China's share of development assistance had soared to half, or more than \$2 billion.

More central to the Sino-Japanese relationship has been Japan's ability to offer low-interest loans. According to the Japanese Ministry of International Trade and Industry (MITI), Japan accounts for about half of all foreign government loans to China. China has welcomed these Japanese government loans to finance a variety of development projects. From 1979 to 1986, the Japanese government has pledged \$10 billion in loans to China at rates of 3–6.25 percent to finance Japanese plant exports and a variety of construction, transportation, and natural resource development projects. Japan's Eximbank credits have amounted to 419.4 billion yen (about \$1.8 billion) compared to \$112.5 million extended by its US counterpart through mid-1986. Following the government lead, a consortium of Japanese private banks headed by the Bank of Tokyo has extended \$10 billion from 1979–85.

Financing has not only helped Japanese exports, but has proven indispensable in fulfilling the terms of the Long-Term Trade Agreement, under which China was to purchase \$7–\$8 billion worth of Japanese industrial

plants by 1985. Although actual plant sales fell short of this mark, Japanese earnings were nothing less than spectacular. JETRO trade statistics show that from 1979 to March 1985 Japan exported \$6.3 billion worth of plants, including more than \$1 billion outside the framework of the LTTA. This amounted to 54 percent of China's total plant imports during the period. By comparison, the US and West German shares were 7 percent and 21 percent, respectively. Japan is still leading all other trading partners in sales of complete plants this year although the Chinese have reportedly stepped up purchases from Western Europe. Japanese sales in 1986 (through July) amounted to \$617 million.

Financing was the key to reviving major Japanese projects in the steel and petrochemical industries in 1981–82, which China could not have otherwise afforded. Low-interest loans were not only vital to sustaining the pace of China's modernization, they were—and remain—central to Japan's strategy of developing China's natural resources and transportation and communications infrastructure to suit Japanese import needs.

Just as Japan is China's single largest source of soft loans, it is by far the most important source of bond financing. From 1982, when China floated its first bond issue, to September 1986, China has raised \$1.5 billion in Japan. And most of the underwriting for China's latest Euro-dollar issue, raised last October, came from Japanese banks. Coming in a poor second is the Deutsche Bank of West Germany, which managed a note issue worth \$103 million in 1985 and a \$200 million Euro-dollar note issue in June 1986.

Up to now, Japanese financial institutions, which vie intensely for opportunities to lend to China, have proven willing and able to offer interest rates lower than their European and US competitors. Unfortunately for Japan, however, the yen's appreciation from ¥240:\$1.00 in September 1985 to ¥155:\$1.00 a year later has made loan repayments more expensive for the Chinese.

Some analysts see the bond issues raised through Deutsche Bank over the last two years as the beginning of a shift to Europe. And some US observers believe that, with the US bond market now open to China (*see*

The CBR, Sept–Oct 1986, p. 40.), China may turn more to the US. But as late as August 1986, the director of the Tokyo branch of the Bank of China claimed that Japan's role as China's number one lender would continue. "During the Seventh Five-Year Plan, China will raise a significantly greater amount of funds than the \$15 billion it raised during the Sixth. Japan will remain the main target in raising funds."

Market intelligence means more business

Another area where the Japanese clearly excel is knowing the Chinese market. In China, this means familiarity with government regulations as well as specific market demands. It also means constantly gauging developments and policy changes, since China's economy is anything but static.

In these areas, the role of the *sogo shosha* cannot be underestimated. The *sogo shosha*, with their extensive international trading activities, have an unrivaled ability to gather market intelligence, finance major undertakings, and conduct countertrade for their own purposes or on behalf of smaller companies.

In an informal survey of Chinese managers conducted by the National Council for US–China Trade, the managers unanimously agreed: Japanese companies are more familiar with both Chinese government regulations and the specific needs of Chinese enterprises. And, when a Chinese enterprise solicits foreign cooperation, Japanese firms are usually the first to arrive.

One key to Japan's outstanding ability to gather information on the China market lies in the sheer number of Japanese representative offices and staff in China. By the end of 1985, nearly one-third of China's 1,440 foreign offices were Japanese. The proportion of Japanese offices to the foreign total is even higher outside Beijing: Japan accounts for about half of the foreign office total in Shanghai and three-quarters of the total in Dalian. Statistics from China's State Administration for Industry and Commerce show Japan maintaining its large lead in the number of new offices established. In 1985, for example, Japanese companies set up 360 new offices in China, compared to 230 for Hong Kong and Macao, and 120 for US firms.

Japanese offices in China rate market intelligence gathering as one of their most important functions. Japanese bank representatives, in particular, view their role as "listening posts" as even more important than their financial role at present.

The emphasis on gathering information has encouraged Japanese firms to establish cooperative arrangements with Chinese government organizations that help them obtain an inside track on economic developments in China. Since last year, for example, Japan's Science Industry Stems Consulting Inc. (SISCO), a Tokyo-based consulting firm, has jointly conducted technical and market studies with the Institute of Scientific and Technical Information under the China State Science and Technology Commission. This effort gives SISCO access to information gathered by its Chinese counterpart on provincial institutes and companies in China. Another agreement concluded in September 1986 between *Japan Economic News* and the China Statistical Information and Consultancy Service Center, provides the Japanese newspaper with statistical information on the bud-

gets, management, and output of 2,000 Chinese companies.

Only after a company has done a thorough job of assessing market conditions can it adapt its product to local needs. Managers responding to the National Council survey were nearly unanimous in their belief that Japanese firms are more willing than US firms to adapt their product to the needs of the customer.

First in feasibility studies

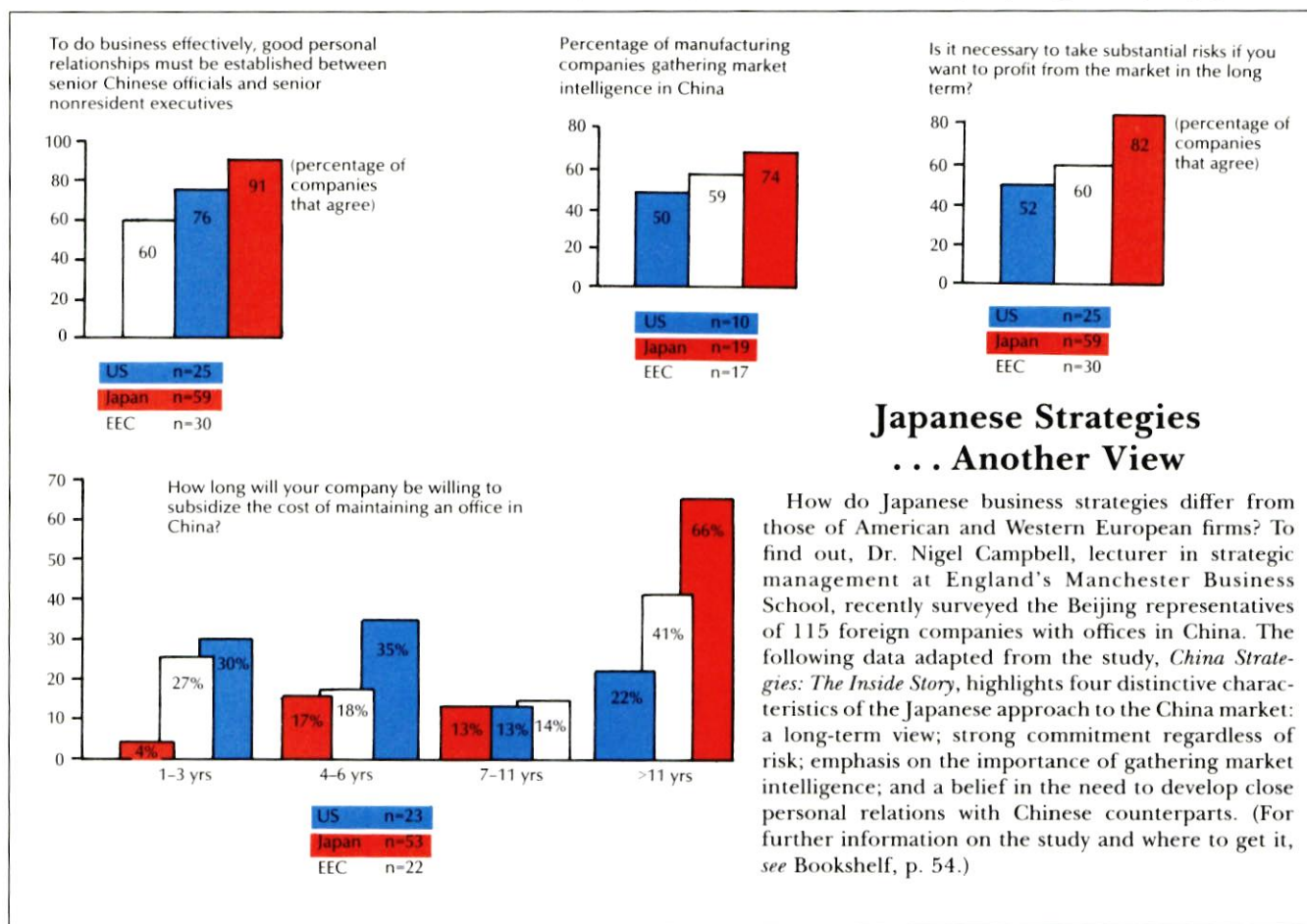
Much of the information Japanese firms acquire is based on firsthand investigation. Especially noteworthy is the Japanese reputation for conducting thorough feasibility studies. Says James Chiang of Digital Equipment Corporation, "The Japanese tend to define the bigger picture first. Often they end up understanding the area they are asked to study better than the Chinese customer. When the customer asks questions outside the specific scope of the study, the Japanese agent already has the information at hand. A US company's focus tends to be more narrow."

The comprehensive approach to conducting feasibility studies serves a

dual purpose. First, it helps win contracts. Second, the broader the scope of the feasibility study, the more likely it is that the study will provide valuable insights into other projects that may require the firm's assistance. And, as James Chiang points out, the Japanese have no qualms about sharing this information, unlike US firms. "Even Japanese firms who would be called 'competitors' in the US exchange information about the China market."

Such in-depth feasibility studies often take more than a year to complete. Examples include the study of Shenzhen's industrial potential prepared by the Hokkaido Takushoku bank last year and the joint Chinese-Japanese survey of China's automobile industry financed by Toyota, which is scheduled for completion by the end of next year.

The US government's Trade and Development Program, which finances feasibility studies to promote US exports and help American firms get in on the ground floor of project development, has also begun to consider this type of broad-based study. But US efforts in this area still have a long way to go to equal Japan's.



Japanese Strategies ... Another View

How do Japanese business strategies differ from those of American and Western European firms? To find out, Dr. Nigel Campbell, lecturer in strategic management at England's Manchester Business School, recently surveyed the Beijing representatives of 115 foreign companies with offices in China. The following data adapted from the study, *China Strategies: The Inside Story*, highlights four distinctive characteristics of the Japanese approach to the China market: a long-term view; strong commitment regardless of risk; emphasis on the importance of gathering market intelligence; and a belief in the need to develop close personal relations with Chinese counterparts. (For further information on the study and where to get it, see Bookshelf, p. 54.)

Consulting services and training leave a lasting impression

The Japanese offer their consulting services gratis to a variety of Chinese organizations. Japanese firms became the first to offer these services in 1981, and since that time, some 651 Japanese experts have reportedly provided free consulting services to more than 130 factories.

The various Japanese government agencies and economic associations providing these services gain direct access to China's State Economic Commission as well as such valuable organizations as the China International Engineering Consulting Corporation (CIECC), which evaluates foreign and domestic feasibility studies. Making an impression on CIECC is useful for a foreign company seeking to enhance its reputation among potential domestic clients. And the most direct benefit, openly acknowledged by SEC officials, is the preference given to companies providing consultancy services when contracts are awarded—as long as their prices are competitive.

The extent to which private Japanese companies can establish cooperative relations with Chinese officialdom is nothing short of remarkable. This is particularly the case in north-east China where the Japanese presence is strongest. Here one finds some of the most well-developed organizations for Sino-Japanese cooperation, such as the Dalian Economic Development Association, the Dalian Port Development Association, and the Japan-China Northeast Development Association. An article appearing last year in *The Oriental Economist* describes the personal nature of these relations. Reporting on what is described as close relations between Isao Masamune, senior adviser to the Industrial Bank of Japan, and Chinese State Councilor Gu Mu, the article also notes that Masamune, "having been instrumental in the formation of a Sino-Japanese trading firm, . . . has close ties with high officials in the [Liaoning] provincial government."

Another way in which large Japanese companies like Mitsui and Nomura Securities make important contacts in China is through training programs in Japan. These programs emphasize training for mid-level Chinese government officials to a much greater degree than is common in the

West. When the Chinese trainees return to their country, they often retain a sense of loyalty to the company that trained them. And when these returning trainees are employees of a high-level ministry or commission, that counts.

Commenting on the training program established by Nomura Securities for Chinese trade officials, one former employee there notes: "The Chinese spend six months to a year at Nomura. After attending special classes on banking and international finance, the trainees are rotated throughout the company." But, from the look of things, the program's emphasis is mainly on cultivating good personal ties. "I'm not sure how much trainees actually learn at Nomura," says the employee. "Mostly they just sit there and watch, since the office staff doesn't have much time to train them. But Nomura does treat them well. They live in the most comfortable company dorm, go on trips, and receive a stipend."

The same emphasis on cultivating personal relations can be seen in the work of Nomura's "China office." Staffed with over a dozen high-level executives, its main duties are greeting the frequent Chinese delegations that pass through, and acting as go betweens for smaller companies eager to do business with China.

Culture, geography, and history: how important?

Anyone who has done business in China is aware that a successful approach involves style as well as substance. More difficult to judge is the degree to which cultural similarities give Japanese businessmen an edge over their Western counterparts.

Although Japanese and Chinese cultures are markedly different in many respects, both cultures share a similar emphasis on Confucian social etiquette. For this reason, Japanese businessmen have an advantage in knowing when and how to raise difficult issues, when to be formal, and how to read unspoken gestures and signals. On largely ceremonial occasions, for example, Westerners have been known to raise unseemly, troublesome questions that Chinese would prefer kept to a private, businesslike meeting. But Japanese, aware of the importance of "face-saving" (their own and that of the Chinese official involved), know when to avoid contentiousness. On one re-

cent occasion, when a newly appointed senior Chinese official invited questions from a group of foreign businessmen, Westerners took the opportunity to raise a host of grievances. When it was a Japanese businessman's turn to speak he delighted his host by asking, "If Japanese businessmen go all out to develop business with China, do you think this will further improve friendly relations between our two countries?"

But not all cultural advantages belong to the Japanese. Among the older generation of Chinese are a number of graduates from American schools whose fond college memories contrast sharply with the memories of those who stayed at home to face invasion by Japan. And many Chinese students prefer to study in the West, especially in the United States. More than 15,000 Chinese students were enrolled in American universities in 1985, compared to only 2,730 Chinese studying in Japan.

Chinese who have had personal experience with Westerners say that they often develop *better* rapport with their Western partners, whose demeanor is frequently described as less "aloof" than that of the Japanese. But until Westerners devote the same effort to cultivating business relationships as the Japanese, and devote as much attention to achieving fluency in Chinese, the actual extent to which culture influences business may never be known.

The other bugaboo of Western businessmen, Japan's geographic proximity to China, is real enough. Japanese businessmen spend one-sixth the time that US businessmen do traveling to China, and less than half the money. But geography has had its greatest impact on the psychological makeup of Sino-Japanese relations. Ever since Japan opened its doors to trade in the 19th century, it has viewed China as key to its economic survival.

Japan's tenacious belief in the link between trade with China and its long-term economic prospects is just as evident today. The commitment to an enduring economic relationship—exemplified in the 1984 establishment of the 21st Century Committee for China-Japan Friendship by Prime Minister Nakasone and General Secretary Hu Yaobang—is the driving force behind bilateral relations. 完

China's Computer Strategy

The goal of a strong, dynamic computer industry requires foreign help but technology will take precedence over equipment purchases

Denis Fred Simon

China's leaders see computerization as a prerequisite for advances in scientific research, industrial productivity, communications, and defense. They also see a strong domestic computer industry as the key to achieving this goal. State investment in the computer industry during the Sixth Five-Year Plan (1981–1985), which totaled ¥5 billion, is expected to double during the Seventh FYP. China will concentrate on developing four computer and electronics bases in Beijing, Shanghai, and Jiangsu and Guangdong provinces.

Striving for a balanced approach

A major issue for China's computer industry is determining the optimal balance between indigenous development and imports of equipment and technology. Going it alone would make it nearly impossible for China to rapidly raise the levels of computerization or manufacture computers comparable to—and compatible with—foreign equipment purchased in the past. Reliance on imports would place an intolerable burden on China's foreign exchange reserves. Although China intends to steer clear of both extremes, finding the right mix will not be easy.

If China's planners differ on the degree to which domestic development should be stressed in the current FYP, they do not differ in objectives. In early 1982, the leadership articulated a blueprint for computer development aimed at advancing China by 1990 to the technological levels achieved in the West in the early 1980s—an ambitious target given China's poor communications infrastructure and the fact that computer design and manufacturing capabilities lag far behind those of the

US and Japan. This strategy was further developed in 1983 and 1984 at major nationwide conferences on computer development.

Officials in China's computer industry believe development alternatives lie somewhere between the approach of Brazil and India, and the strategy of South Korea and Taiwan. In the cases of Brazil and India, strong protectionist policies were imposed to limit foreign competition and induce foreign firms to provide technology in return for greater market access. In South Korea and Taiwan, foreign models have been imitated or copied; firms in these two countries saw imports as the quickest way to meet their computerization needs. China's emphasis on technology transfer, combined with elements of "protectionism" in its approach to computer imports suggest that it may be leaning more toward the India/Brazil approach, particularly in the microcomputer area.

The role of foreign technology

Despite the stress on indigenous development, foreign technology will continue to play a role in the drive to build up China's computer industry.

In the 1950s China relied on Soviet technical specifications to launch its domestic development program. In the 1970s China used foreign designs to initiate the DJS-100 and DJS-200 series, respectively. Foreign technical materials have continued to flow into China throughout the last two decades—even during the Cultural Revolution. And visits to Chinese industrial and research facilities

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reveal some US-made and other foreign computers clandestinely brought into the country via Hong Kong, some prior to the relaxation of US and COCOM export controls.

During the Sixth FYP, the Ministry of Electronics Industry (MEI) reports that China imported more than \$1 billion worth of foreign computer technology, much of it from the United States. US sales of automated data processing equipment to China exceeded \$150 million in 1985.

To encourage technology acquisition rather than straight equipment sales, a license is now required to import computers, and duties have been raised. Import controls will be less strict for more sophisticated equipment such as minicomputers and mainframes. Key technologies for components such as microchips will remain another import priority.

One project consistent with Chinese objectives involves the import of a disk drive production line from France in mid-1984 by the Jiannan Electronic Equipment Factory in Hunan. Another involves the proposed 10-year, \$12 million licensing agreement between Gould Corp. and the Tianjin Automation & Instrumentation Factory concluded in late 1984 for assembly and manufacture of dedicated industrial computers. Under this agreement-in-principle, Gould will provide instruction in manufacturing techniques, testing operations, quality control processes, and equipment maintenance.

The import problem

The decision to stress technology over equipment was strengthened by China's skyrocketing purchases of microcomputers through last year. One Hong Kong estimate suggests that such imports may have grown from 4,500 items in 1983 to more

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than 70,000 in 1984! Many organizations, taking advantage of their newly won powers to import equipment, found the allure of foreign computers too great to resist. Only later did they consider the need for personnel to operate and maintain the equipment. One US computer expert suggests that China will waste between \$20-\$85 million from 1985 to 1988 due to improper use and maintenance of imported computers.

From 1981 to 1985, China's microcomputer "development efforts" were largely limited to assembly of imported kits. While these brought in large amounts of revenue to those doing the assembly operations, they did little to stimulate indigenous technological progress. Some of these imports were simply a form of profiteering. Purchasers in Guangdong and Fujian, for example, had abundant foreign exchange and did not require special licenses to import computers in 1981-84, so they acted as computer brokers. Machines were bought in Hong Kong, disassembled to qualify for lower duties, brought into China for reassembly, and subsequently sold on the domestic market at prices up to ¥45,000 (approximately \$15,000).

Imports have since been cut back to curb excessive foreign exchange expenditures and the growing dependence on foreign equipment. Most affected by the cutbacks are 8-bit ma-

chines and many types of 16-bit computers, which the Chinese increasingly produce on their own. By 1990 MEI officials hope that about 80 percent of China's microcomputer needs will be met by domestic suppliers. As one Chinese author recently stated in addressing China's penchant for buying equipment and ignoring technology, "Let us change as soon as possible the formula of the first machine being imported, the second machine being imported, and the third machine also being imported" into one of "the first machine being imported, the second machine being made by China, and the third machine being exported."

The appeal of joint ventures

As China shifts emphasis from imports to technology transfer, the role of Sino-foreign computer joint ventures can be expected to grow. Joint ventures conserve expenditures, while introducing foreign technology and management techniques. The foreign partner, in addition to contributing capital, can ensure that components and other elements needed for production are available, a problem that frequently plagues domestic manufacturers. The foreign partner is also expected to introduce better quality control. This should boost domestic sales, since many Chinese endusers have little confidence in the quality of computers made by

Chinese manufacturers.

Thus China expects its method of cooperation with foreign firms to evolve away from mere assembly to joint manufacturing of computers and related components. Foreign firms may find themselves with little alternative but to establish joint manufacturing facilities or license their technology in China if they want to sell microcomputers (16-bit) on the Chinese market. Yet joint venture agreements already signed or planned with such firms as IBM, Wang, Burroughs, and Hewlett-Packard have proven difficult to implement, and their contribution to China's computer industry is likely to be realized only gradually.

Strengthening manufacturing

The goal of an advanced computer industry is supported by efforts to improve the quality of China's semiconductor and microelectronic components. Efforts include programs to improve large-scale integrated circuits in both the memory and logic areas. Yet low yields and poor reliability remain major problems.

At present, almost all the major manufacturers of computers in China rely extensively on imported chips. Even China's much heralded Galaxy (Xinhe) supercomputer relied primarily on imported components.

China's manufacturers must develop the capability to produce both standard and custom components. They will also have to find ways to cut costs. For example, a 64K DRAM costs \$1.50 in the international market and close to \$5.00 to produce in China. In part this is due to the industry's past military orientation, in which cost factors were subordinate to the need to meet special requirements.

Peripherals such as disk drives, printers, and monitors are another problem area. Taiwan and South Korea have been able to push forward on monitor development because of their achievements in television technology, but China has no comparable technological foundation.

Finally, techniques for mass production of final products are severely lacking. Even though advanced components are being developed in the laboratory, factories lack the equipment and managerial know-how to mass-produce

**US COMPUTER & RELATED EQUIPMENT SALES TO CHINA
(IN THOUSANDS OF DOLLARS)**

Item	1983	1984	1985
Analog & Hybrid Computers	1,715	2,082	6,767
Digital Computers	11,324	25,288	80,436
Digital Central Processing Units	11,115	32,494	35,419
Random Access Auxiliary Storage	2,358	1,550	7,976
Serial Access Auxiliary Storage	725	1,995	5,204
Terminals	2,809	2,275	4,318
Printers	1,160	1,900	3,497
Communications & Peripherals	2,301	8,006	9,682
Parts, etc.	11,959	20,812	32,174
Microprocessor Integrated Circuits	4	50	47
Printed Circuit Boards	557	1,407	2,245
Cathode Ray Tubes	22	179	417

Source: US Department of Commerce

high-quality items. But current problems should be viewed against the backdrop of China's pre-1978 experience. The Chinese produced their first electron-tube computer in 1958 and their first transistorized computers in the mid-1960s. The Cultural Revolution dealt a severe setback to computer development at a time when the West was just starting to catapult ahead. Nonetheless, by the early 1970s the first computers with integrated circuit technology appeared in China. These achievements were attained by a small, select group of specialists working, in many cases, without the benefit of a strong and well-coordinated R&D support network.

A milestone in China's computer development occurred in 1973 with the introduction of the first serialized machines, the DJS-100 and 200 series. The DJS-200 series was modeled after various members of the IBM-360 series, based on foreign technical literature and, perhaps, illegal access to equipment in Hong Kong. The machines never attained the levels of performance associated with the IBM due to architecture and software problems. While some were tailored to meet the needs of special endusers, such as the defense sector, they never entered large-scale serial production. Due to political pressures at the time, the DJS-200 series was also 'sinicized,' leading to compatibility problems with IBM machines. Today this sinicization strategy, which constrains software sharing, is no longer in vogue.

The DJS-100 series has been the more successful, and is compatible with a limited range of Western software. Modeled after the NOVA computer developed in the US, the DJS-100 series now includes a number of different models. But these machines are still slower than their Western counterparts and lack much of the software to support widespread use. In the future, China may scrap even this relatively successful series and focus on developing computers more compatible with foreign models.

Mainframe computer development, which experienced serious problems in the past, is now entering a recovery stage exemplified by the 757 computer (10 mips) designed and produced by the Chinese Academy of Sciences, and the Galaxy (100 mips) designed and produced by the National Defense S&T University in

Hunan. In late 1985 Beijing was designated a special site for mainframe computer development, to include an R&D and production complex centered around several key institutes overseen by MEI and the State Council Leading Group for Invigoration of the Electronics Industry. The emphasis, dictated by considerations of standardization, software compatibility, and networking needs, will be on equipment compatible with models produced by such firms as DEC, IBM, and Control Data. This will ensure that domestically built machines can interface with many of the computers China has imported.

The microcomputer, better suited to China's prevailing production capabilities, and possessing a more favorable cost-performance ratio, will probably receive the most attention throughout this decade. Minicomputers will also gain in importance for computer networking both within and between organizations.

Large-scale production of microcomputers is top priority. In 1985 China produced some 35,700 microcomputers in scattered facilities throughout the country according to MEI. Although this was up from 27,000 the year before, it still does

not come near to meeting the demand, which is particularly high in the industrial and service sectors. Thus, there is currently strong interest in forming a joint venture with IBM to produce the powerful 5055 microcomputer.

China's stock of microcomputers has been growing rapidly with the help of imports. Between 1983 and 1985, the number of microcomputers, including single-board machines, rose from about 40,000 to over 250,000. Some 60 percent were used in research and engineering. But in contrast, there were well over 2 million microcomputers in use in the US by early 1984.

China's computer specialists hope that the appearance of the Great Wall 0520 microcomputer represents the first step in building a more credible domestic computer industry. The 0520 series, which uses an Intel 8088 16-bit microprocessor, includes three models designed to meet specialized user needs in engineering design, scientific research, and factory management. Similar to the IBM-PC/XT—though not an exact copy—the 0520's main board has two serial ports and one parallel port plus built-in Chinese-character pro-

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Weak links: Training and software

Improving computer manufacturing will do little good if the new computers are not efficiently used. Officials estimate that more than 18,000 microcomputers were gathering dust in warehouses by the end of 1985. The utilization rate of installed microcomputers in Beijing, for example, is reportedly only 26 percent, while the national average is an even lower 15–20 percent.

This problem has its roots in personnel shortages, which in turn are partly responsible for poor maintenance and post-sales service. Training is thus a key aspect of China's computerization drive. Estimates are that China will need some 600,000 computer operators by 1990—a difficult target, since there are only about 100,000 now.

Computer science departments have sprung up throughout China's higher education system, and a \$200 million World Bank education loan in 1982 spearheaded equipment purchases and the introduction of higher-level computer courses. These programs are complemented by a broad-based effort to introduce China's elementary and high school students to the role of computers. Although China has gone farther than the USSR in trying to popularize computers, they still have far to go.

Some manufacturers are also beginning to play a role in enhancing computer literacy. The Shaoguan Radio Factory in Guangdong, for example, a leading manufacturer of 8-bit and 16-bit microcomputers, has assigned a number of its engineers and skilled workers to outreach and sales teams in the province.

Software is another weak link. Much of the groundbreaking research in this area is being conducted by universities in east China. A national university computer software center was established in Beijing by the Ministry of Education in early 1984 to offer technical services. A few months later a software industry association was established to share information on research projects. In early 1986 China's first comprehensive software package was introduced by Xi'an's Jiaotong University and five other institutes. The package has 42 programs ranging from measurement statistics to modern spectral

analysis. Shanghai also has ambitions to become a national leader in software development. Pioneering work in this area is now being done at Shanghai's Jiaotong University.

However, as in the past, much of the software being developed tends to be machine-specific. The introduction of central government standards for software development as well as the appearance of software organizations with numerous branches throughout the country may help remedy some of these problems.

Applications multiply

In contrast to the earlier focus on scientific calculations, computers are being used today in bookkeeping, inventory control, product design, medical diagnosis, and traffic management. Most of China's ministries are being encouraged to create a computer applications office to pinpoint areas where computers could raise overall productivity.

Computers have an especially important role to play in efforts to modernize existing industrial facilities during the current period of technical transformation of industry. At a national conference on computer applications in June 1986, Lu Dong, minister of the State Economic Commission and vice chairman of the State Council's leading group on electronics, stressed that all enterprises in the machine-building and electronics industries should experiment with computers during the Seventh FYP. The Ministry of Machine-Building Industry's work on industrial automation has proceeded rapidly in the last two years. One MMBI research center focuses on introducing CAD/CAM technologies—although efforts are being held back by the lack of specialized components.

Examples of effective application of computers include a computer-based flood warning system; social science data storage and analysis in the Chinese Academy of Social Sciences; a computer center at the Daqing Oilfield to handle prospecting information and research; and a system for exterior car body design produced through the efforts of the Shanghai Tractor and Automobile Research Institute and Fudan University. Significantly, the Communist Party has also gotten caught up in the computer revolution: the provincial Party office in Shaanxi, with help from the Lishan

Microelectronics Company, has introduced a computer system for general management.

Foreign firms have also taken the opportunity to help China in this area. Fujitsu has agreed to develop a prototype network teller system for the Agricultural Bank of China and is bidding for a project to computerize and connect the bank's 28,000 branches. Burroughs Asia Ltd. is supplying the Bank of China with a microcomputer network worth \$1.1 million. Honeywell outfitted four Chinese hotels with computer-based building management systems. And Prime Computer has sold computer systems for industrial management and research. Some firms have helped China develop software for specific applications to facilitate subsequent sales of the hardware to run these programs.

China is attempting to establish several nationwide information networks for such fields as posts and telecommunications, finance, energy, transportation, weather forecasting, and national defense during the Seventh FYP. There are attempts to draw upon Western data bases in addition to creating their own data retrieval systems. Progress, however, has been impeded by China's poor communications infrastructure.

Quality is job 1

With the computer industry in the spotlight during the current FYP, computer industry planners, technicians, and manufacturers can be expected to work hard at increasing output. But in the race to catch up with the advanced computer industries of the world, quality will be perhaps the most critical factor ensuring the success of its efforts.

Already there is tension between Chinese endusers who want high quality (meaning foreign) computers and planners who want China to rely on its own computers to the extent possible. For the two groups to reach a consensus, the quality of Chinese computers will have to be raised.

Foreign expertise can make a big difference in this area. Whether by supplying component technology to raise the standard of the finished product, or by offering management and technical advice through joint ventures, foreign firms have the potential to play a crucial role in helping China meet its long-term goals for the computer industry. 完

Liberalizing Controls on Exports to China

Barbara D. Ranagan

The most important factor determining a firm's ability to export to the People's Republic of China is the level of demand for its product. The prospective exporter, however, must also consider factors affecting the ability to supply the type of product or level of technology that will satisfy Chinese demand. For the manufacturers and exporters of computers and other high-technology goods, not the least of these factors is the US Export Administration Act and implementing regulations.

Guidelines governing many high-technology exports to China are gradually but significantly loosening. The most important recent policy breakthrough came in November 1983, when China was transferred to country group "V"—one of the "free world" country groups used for the purposes of the US Export Administration Act (*see box*). The Department of Commerce also created "green zones" in 1983 for seven key high-technology categories of exports to China. This system provides exporters with guidance on the level of technology eligible for expedited license review in these seven product areas, which make up the bulk of high-technology exports to China.

The next major step came in the fall of 1985, when representatives from COCOM countries agreed on a list of exports to China that could be approved without prior COCOM scrutiny. This in effect created a COCOM "green zone" for 27 product areas, including the original seven categories liberalized in 1983.

Exporters trying to comply with these changing regulations, and government officials attempting to monitor their impact, often differ in their assessment of the practical effect of policy changes. Computers illustrate

well the problems involved in interpreting and complying with export control regulations. Computers constitute the largest single category of China license applications—and compared with other "green zone" items—their technical parameters are relatively straightforward. Even with computers, however, the dividing line between technology that falls into the green zone (requiring only Department of Commerce review) and that which surpasses green zone levels (thus requiring Department of Defense concurrence) is sometimes less than clear.

Computer networks: green zone gray area

Following the announcement of the green zone system for China in 1983, some exporters discovered that applications to export computers approved under green zone guidelines were still not receiving expedited review. Export license applications involving computer "networks," for example, were automatically referred to the Defense Department for review, although the exporter often believed that both the technology and the configuration of the individual computers fell within the green zone.

It took some time to iron out differences between the Defense and Commerce departments, on the one hand, and between Commerce and the exporting community on the other—first, as to the technical meaning of a computer "network," and second, as to whether all com-

puter exports involving networks would require Defense Department review.

Gradually the guidelines on networks were clarified for exporters. Generally speaking, the green zone permits the export of computer systems that constitute a "local area network"—meaning a network with well-defined and limited geographical area, such as a university campus—whereas computer systems for a "wide area network" (although they may involve the same type of computer) must be referred to the Defense Department because of potential strategic applications. It is not always easy to distinguish between a local area network and a wide area network, however. As one Defense Department official explains it, evaluating the computer software involved is critical. If the combination of hardware and software allows the local area network under review to communicate with another local area network, the system will be considered a wide area network.

A glimpse at "yellow zone" policy

Time and time again, officials in both the Commerce and Defense departments emphasize that the green zone is simply a positive list of technology likely to be approved for export to China. It by no means represents the upper limit of technology that the US government is willing to approve for export to China. But technology exceeding the green zone thresholds is always carefully reviewed on a case-by-case basis.

The US government is showing increasing flexibility on the types of computers it will approve for export to China. As one official in the Department of Commerce has noted, almost anything short of a supercomputer can go to China sub-

Barbara D. Ranagan is an attorney in Washington, DC, and a December 1986 candidate for a masters degree in China Studies from the Johns Hopkins University School of Advanced International Studies.

ject to specific and sometimes strict conditions. The Commerce Department, for example, approved the shipment of large mainframe computers—such as the IBM 3081 and IBM 3083—although the license was approved subject to the conditions that the computers be leased and not sold, that they be monitored round-the-clock by Western observers, and that the Chinese will not actually operate the computers. Computers that come close to the supercomputer category are subject to this type of extensive oversight to ensure that they

are not diverted to such sensitive military applications as weapons design, antisubmarine warfare, or cryptanalysis.

Mid-size computers pose less of a problem. Says a Defense Department official: "The US is prepared to approve for export to China what would be roughly characterized by Western standards as mid-sized general purpose business computers," provided the end use does not raise strategic concerns. The official points out that the United States has approved mid-sized systems for license to China (again for seismic

applications) conditioned only upon quarterly or semi-annual visitation reporting. Although a processing data rate (PDR) above 155 exceeds the green zone guidelines, the Defense Department has been approving computers with a PDR of up to 250 for innocuous applications like banking since earlier this year with no special or onerous conditions imposed upon the exporter or the Chinese purchaser.

The Department of Commerce official noted the same trend. "Most of the general purpose business machines for sale in the US, the kind used by business in ordinary applications, and which are not major computer systems, can be sold to China without any problem." In processing data rate terms, he adds, "Computers with a PDR of 300 to 500 can be approved fairly routinely to China."

Both Commerce and Defense department officials agree, however, that computers with a PDR of 1,000 probably represent the upper limit of what can be exported to China, and Chinese access to those with a PDR of between 500 and 1,000 will be strictly controlled. The Defense Department cautions that other technical specifications, including peripheral devices, disk drives, and main memory capacity, are important factors determining whether an export license can be approved. The configuration of the entire system is another important consideration. For example, whereas the sale of a computer with a PDR of 250 possessing ordinary peripherals might be approved fairly easily, the same computer could face stringent controls if combined with an array transform processor. In this example, the array transform processor has its own PDR which, when combined with the computer, could add up to a configuration with a significantly higher total PDR.

Working within the system

Some computer exporters have tried to anticipate and address these concerns when selling computer systems to China. At least one leading computer firm has attempted to identify in advance which of its products are green zone and which are yellow zone technologies. When it negotiates the sale of a computer system including an item that makes the system exceed green zone levels, it can advise the Chinese buyer and al-

THE BASIC FRAMEWORK

The US Export Administration Act authorizes the president to impose controls on the export of goods and technical data originating in the United States to protect national security, further US foreign policy objectives, and safeguard key commodities that are in short supply. The **Department of Commerce** implements the requirements of the Export Administration Act through its **Office of Export Administration**.

Although the Department of Commerce is the primary regulatory agency in the export control process, it is by no means the only agency that reviews license applications. A license application may also be referred for review to the departments of Defense, State, and Energy, as well as the intelligence agencies. The **Department of Defense** plays a particularly active role. It is authorized by statute to review license applications of exports affecting the nation's security as well as to assist the Department of Commerce in the development of the **Commodity Control List (CCL)**. The CCL, a list of commodities whose export is controlled for national security or other reasons, is part of the implementing regulations of the Export Administration Act.

The principal device for controlling exports from the United States is the **export license**, granted or denied on the basis of essentially two criteria: the nature of the good to be exported, and the relationship between the United States and the country of destination. Export destinations are organized by **country groups** according to their relationship with the United States. The Commodity Control List is linked to the country groups: alongside each commodity listed in the CCL is a statement specifying the country groups for which the exporter must obtain a validated license to export the commodity, and indicating whether a

quantitative limit is imposed on the amount of a particular commodity to be exported under a general license.

The "**green zone**" is the shorthand name given to guidelines added to the CCL in 1983 that specify levels of technology considered favorably for export to China. The green zone reflects, in essence, a consensus between the departments of Defense and Commerce on the technical levels exempted from review by the Defense Department. First implemented in 1983, the original green zone covered semiconductor production equipment (CCL no. 1355A), electronic instruments (1529A), microcircuits (1564A), computers (1565A), recording equipment (1572A), oscilloscopes (1584A), and computerized test equipment (4529B). Thus, for example, if an item fell within the published technical levels, it was likely to be approved for export to China. Items with technical specifications exceeding green zone thresholds might still be approved on a more stringent case-by-case basis pursuant to unpublished guidelines known as the "**yellow zone**." There is also an unspecified "**red zone**" for items whose level of technology pose a threat to national security and that, accordingly, will not be granted an export license.

On top of this national review process is an international license review mechanism known as **COCOM**. Headquartered in Paris, COCOM was organized in 1949 by the US and several of its allies to coordinate export control policies toward communist countries. Today the organization is composed largely of NATO countries and Japan. Because China remains a controlled destination, license applications that exceed certain minimal levels are still sent to COCOM.

—BDR
(For more background on export control policy toward China, see *The CBR*, May-June 1984, p. 58.)

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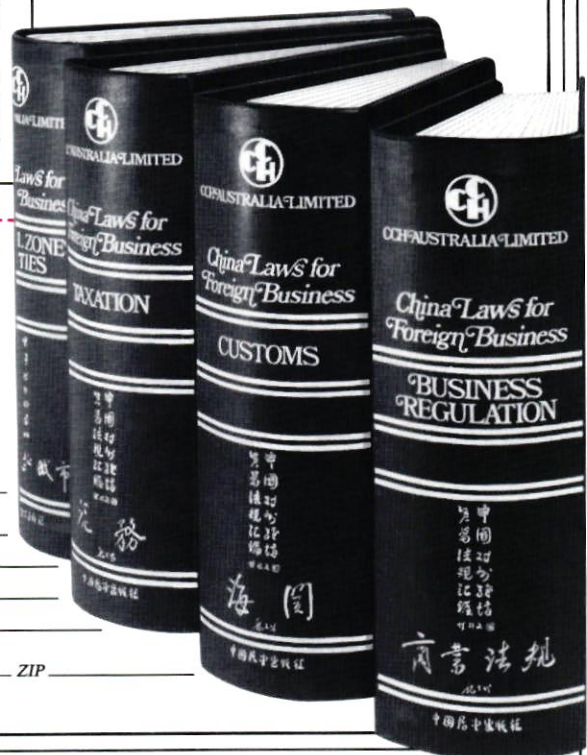
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low the buyer to decide whether that item is essential to his needs.

Although the Defense Department tries to work with manufacturers to understand their products, one Defense Department official admits that they are not always successful in arriving at solutions that satisfy both national security concerns and the manufacturer's need to offer a viable product for sale in China. For instance, the Defense Department has expressed reservations about 32-bit desktop workstations that have special graphics capabilities or that can do real-time simulation work. The concern here is that such computers, when combined with computer-aided design (CAD) or computer-aided engineering (CAE) software, could be used to design very large-scale integrated circuits. Moreover, workstations cannot be monitored as easily as large, stationary mainframe computers.

Thus, while it appears that US government controls on computer exports bound for China are becoming more flexible, the prospective exporter should not develop unrealistic expectations. If the underlying technology exceeds green zone thresholds, the license application will be referred to the Department of Defense and probably to COCOM for review. Such license approvals will take longer—a fact that all the parties to such a transaction should take into consideration.

Although there are still delays and confusion about the regulations, the establishment of a system of technical guidelines at least puts the exporter on notice that technology above green zone thresholds has only been given the "yellow light"—and its sale may be denied or subject to stringent conditions pending the outcome of the review.

The expanding role of DOD

Another encouraging trend for computer and other high-tech manufacturers is the declining percentage of China cases being referred by the Commerce Department to other governmental agencies for review. For example, in 1984 more than a third of all China license applications received by the Department of Commerce were referred to the departments of State, Energy, Defense, and the Central Intelligence Agency. In the first six months of 1986, that number dropped to less than a quar-

ter. And as a proportion of all US license applications to all country destinations referred for inter-agency review, the number of China cases dropped from 23 percent in 1984 to 9 percent in the first half of 1986.

As for the China cases still referred outside the Commerce Department, however, the Defense Department plays the dominant role. Whereas in 1984 the Defense Department reviewed less than half of all such China cases, in the first half of this year it reviewed nearly three-fourths of the China license cases sent outside of the Commerce Department. This trend, however, is not China-specific: the Department of Defense has increased its review of license applications for exports to other country destinations, too.

For the most part, where China is concerned, the Department of Defense reviews only the intermediate technologies that exceed green zone technical levels. However, it continues to review green zone computers with PDRs of between 90 and 155 under what it calls a "quick look" procedure. The purpose of this procedure, explains a Defense Department official, is to make sure that the computer will not be used in a manner contrary to US strategic interests. A "quick look" review is conducted in less than 10 days, in contrast to customary review procedure that by law may take up to 40 days. And, says the Defense Department official, the staff in the Defense Department's Division of Strategic Trade spend considerably more time reviewing license applications of the more sophisticated computer exports to China

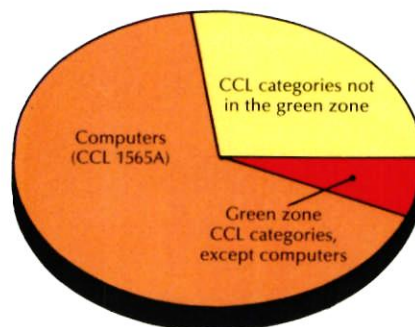
than they spend on green zone computers.

In recent years, the Department of Defense has broadened its role in the multilateral review process as well. It not only helped finance efforts to upgrade the administrative capabilities of the COCOM Secretariat in Paris, but also played a strong role in determining how the money was spent. Among other things, it paid for a management study and the cost of implementing an automated system at COCOM—both intended to bring COCOM into the modern era of office procedures. Moreover, the Defense Department has greatly increased bilateral consultations with representatives of the defense ministries of other COCOM member countries.

Although COCOM controls are strategic in nature, their application in the past has been primarily determined by commercial and political factors. As one Defense Department official explains, the United States is usually the lone voice expressing strategic concerns because it is the only country whose defense department plays an active role in controlling exports. The present goal is to bring the other defense ministries into the export control process to balance the commercial and foreign policy interests of other COCOM members. In a similar vein, the official indicated that the Defense Department, as part of a broader US government and COCOM effort, wants to work with the countries in the Pacific Basin to develop stronger export controls.

The reaction of US exporters to the growing political role of the Department of Defense is likely to be one of concern. In recent years, some US firms have alleged that many of the high-technology goods they are prohibited from selling to China are freely available either from the newly industrializing Pacific Basin countries or even from other COCOM member countries. Accordingly, they argue that export controls only hurt US industry without stemming the flow of high technology. For its part, the Department of Defense, while not unsympathetic, apparently believes the solution lies not in relaxing controls within the United States, but in strengthening export controls among COCOM members and other principal competitors of US companies. 完

Applications for Export to China Received by DOC in 1985



Total value of applications: \$8.058 billion

SOURCE: US Department of Commerce

Will it break the bottleneck?

New COCOM Policy

Barbara D. Ranagan

Both the number and dollar value of applications for licenses to export to China surged after the late 1983 US regulatory changes. This rise in US license applications for China in turn produced a dramatic increase in the number of China cases referred by the US to COCOM by 1985. As a result, even when China case processing worked smoothly and quickly in the US, applications could languish for months at COCOM. Although the consequences of such delays are often difficult to prove, some exporters claimed they were losing deals because of the long export license processing times in the US government and COCOM.

In the fall of 1985 the US and its COCOM partners responded to the problem by agreeing to raise the minimum technical levels that trigger COCOM review for 27 commodity categories. Technology within the new limits can be shipped to China at national discretion, without pre-export COCOM scrutiny. In effect, the agreement creates a "COCOM green zone" for 27 CCL categories, including the original CCL categories liberalized under US law.

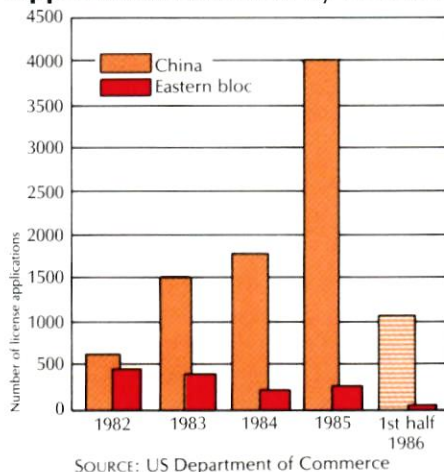
Although touted as another big liberalization, the new guidelines fell short of the expectations of some exporters. For the CCL categories for which a green zone previously existed under US law, the COCOM agreement added very little. In the computer area, for example, COCOM agreed that it need not review license applications for machines with a processing data rate (PDR) of 155 or less (providing all other green zone specifications are met)—a level identical to the US green zone threshold in effect since 1983.

As for the remaining 21 categories liberalized, one senior Defense De-

partment official speculated that these CCL categories would expedite processing for only an additional 2 or 3 percent of all US export license applications to China. A Commerce Department official noted that some of the newly liberalized CCL categories reflect the commercial interests of other COCOM members. But, familiar with the difficulty of extracting compromises from the other COCOM members, they believe the final agreement represents a genuine easing of COCOM restrictions. And COCOM members agreed to meet every six months to determine whether China cases approved on an ad hoc basis during the interim provide the necessary precedent for further liberalization of the guidelines.

Although the regulatory changes announced in December 1985 were intended to reduce the COCOM case load, data for the first half of 1986 indicate that China cases still constitute about 93 percent of all US cases sent to COCOM. Since, by definition, green zone cases in 27 CCL categories no longer go to COCOM, the evidence at first blush suggests that the

Number of US Export License Applications Reviewed by COCOM



COCOM regulatory changes do not sufficiently address the growing volume of China applications.

However, as a Defense Department official points out, the number of China cases referred to COCOM has been substantially reduced, but other factors distort the 1986 numbers. He cites, for example, the fact that the number of license applications sent to COCOM for exports to Eastern bloc countries has dropped—largely because the ailing economies of Eastern Europe cannot afford as many high-priced Western goods. Meanwhile, China license applications remain at high levels, making China cases as a share of total cases in COCOM appear larger than they would have had the applications for Eastern Europe remained constant or grown.

An executive with a leading US computer manufacturer that exports to China concurs, and notes that the 1986 half-year data do not accurately reflect changes between the first and second quarters. Exporters were not required to comply with the December 1985 regulations until the end of February 1986. A significant downward trend in the volume of China cases might therefore not become evident until at least the second quarter of the year or perhaps later.

Equally important, the executive said, is the change in the time it takes to process a China case, which is not captured by data on the volume of applications. In the past, it was not uncommon for processing of China-bound computer export applications to take six to nine months—largely due to COCOM delays. With the implementation of the December 1985 rules, his company has noted a dramatic reduction in processing times for its green zone cases—in some instances, to as little as two weeks for microcomputer products with a PDR of less than 28. From the date of license submission to the date of validation, the company's microcomputers were being approved in under 20 days on average, and their larger computer systems in 20 to 30 days. Although some green zone license applications still take up to 60 days for approval, the executive believes that if the exporter properly labels the green zone license application as such, and has built up credibility with the license reviewers, the green zone license application ought to go through like "greased lightning." 完



China Strategies: The Inside Story, by Nigel Campbell. Manchester: University of Manchester/University of Hong Kong, 1986. 161 pp. \$175, including postage.

Available from the Department of China Research, Manchester Business School, Booth Street West, Manchester M15 6PB, United Kingdom.

China Strategies is a timely and ambitious study of the goals and attitudes of foreign businesses in China. The author, a lecturer at the Manchester Business School, surveyed 115 foreign firms with Beijing offices for their views on current business conditions in China. Two features of this book distinguish it from earlier survey investigations. First, unlike previous studies, the sample includes US, European, and Japanese firms. The information on Japanese business activities is particularly welcome, given the vital role they have played in China's foreign trade. Second, the survey covers not just trading firms, but those with direct investments in China as well.

The survey results make fascinating reading. They reveal widespread dissatisfaction with China's treatment of foreign firms. Foreign businessmen were particularly critical of high office rents and price gouging, with the majority of American and European companies expressing the belief that such practices would eventually force some foreign firms to leave China altogether. Also interesting is the finding that equity joint ventures were not seen by most of those surveyed as the key to a secure long-term strategy in China. While American, European, and Japanese respondents tended to agree on many questions, they also differed significantly in their approach to the China market. The differences identified in the survey are at least as illuminating as the similarities.

To his credit, the author goes beyond merely reporting the survey results, and uses case studies and statis-

tical analysis to suggest ways in which those entering the China market can succeed. He notes that success in achieving different objectives often requires flexible operating practices, and that firms entering the China market should spend as much time clarifying their goals as adjusting their work styles.

Foreign firms interested in mapping out their own China strategies should begin by reading this book. Survey results this comprehensive and up-to-date are simply unavailable elsewhere.

—Jeffrey Taylor



China Market Atlas: The Complete Graphic Guide to the World's Potentially Largest Market, by Marcel Toussaint. Hong Kong: Business International Asia/Pacific Ltd.

(11/F, Mount Parker House, Cityplaza), 1986. 222 pp. \$345 plus airmail postage. Orders also accepted from Business International, One Dag Hammarskjold Plaza, New York, NY 10017.

The most colorful statistical guide to China's economy to date, *China Market Atlas* contains more than 800 tables, charts, and maps based primarily on official Chinese sources. The illustrations are accompanied by brief descriptions and include such topics as: location of natural resource deposits, national accounts, population and labor, foreign trade at a national level, exchange rates, income and spending, transportation and shipping, and provincial profiles. Information is easily accessible through an index at the beginning of the book. A large portion of the book consists of agricultural and industrial output charts.

Although attractive in format, the book does not provide information unavailable elsewhere; in fact, more up-to-date statistics can be found in a variety of other English-language reference works. Some figures for 1985 are provided, but the most recent commonly cited statistics are for

1983 and 1984.

—JL

Equity Joint Ventures in the People's Republic of China: A Specially Commissioned Report, by Stephen Hood, Karl P. Herbst, and Grace M. C. Lau. Hong Kong: Longman Group (Far East) Ltd. (18/F Cornwall House, Tong Chong St., Quarry Bay), 1985. 50 pp. \$125. Orders also accepted from Longman Group USA, 500 N. Dearborn St., Chicago, IL 60610.

This report describes the legal framework for foreign firms interested in establishing an equity joint venture in China. The authors not only analyze the joint venture regulations promulgated through the end of 1984, but offer their views on what is still lacking in these laws.

This report describes in detail the procedures for joint venture establishment and registration, its form and registered capital, site use and land fees, accounting and profit sharing, sales, exchange control, staffing, termination, dispute settlement, and taxation. The report closes with a brief discussion of the retroactivity of these joint venture laws on previously existing and approved joint ventures.

Like other publications on the subject, this report faces the problem of rapid obsolescence. New Chinese laws and provisions seem to be emerging about as fast as authors can write commentaries on them. Thus the reader should carefully supplement what he reads in this report with more recent information available in Chinese and foreign periodicals.

—JL

Corporate and Individual Taxation in the People's Republic of China: A Specially Commissioned Report, by Timothy A. Gelatt and Ta-kuang Chang. Hong Kong: Longman Group (Far East) Ltd., 1985. 57 pp. \$125. See entry above for ordering information.

Summarizing the situation as it stood in mid-1985, this report provides the most detailed examination

and analysis of China's tax law to date. The report evaluates the effects of the Chinese tax law on a complete range of foreign business activity—straight sales, technology transfer, leasing, processing and assembly, service centers and consignment sales, countertrade, and foreign investment. Different forms of taxation are discussed in depth: individual, corporate, and customs duties. Also described at length are laws applying only to the special economic zones and open coastal cities. —JL



China, by Robert Delfs, Thomas D. Gorman, and Owen D. Nee, Jr. London: Euromoney (Nestor House, Playhouse Yard, London EC4V 5EX), 1986. 192

pp. \$60.

Although it has the appearance of a book destined merely for the coffee table, this handsome volume is also serious in content. It is an excellent general reference for readers interested in China's history, economy, politics, and foreign trade system. Included are chapters on China's foreign investment laws and regulations, and case histories of several foreign companies currently active in China. Descriptions of the banks and the accounting and law firms that sponsored the book are also included. One serious omission in this otherwise well-conceived publication is the lack of an index. —JL

China Facts & Figures Annual, Vol. 8, 1985, edited by John L. Scherer. Gulf Breeze, FL: Academic International Press, 1985. 399 pp. Available by standing order or as a single volume at \$69.50.

This book compiles a variety of tables and descriptive material covering Chinese events, statistics, and major documents for 1984 and sometimes 1983. The sources for this data are primarily Chinese news releases although the foreign press is also cited. Topics covered include China's government leadership, economy, agriculture, foreign trade, transportation, science, and culture. A useful chronology lists the major events of 1984. —JL

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Betsy Saik
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The following tables contain recent press reports of business contracts and negotiations exclusive of those listed in previous issues. Joint ventures, licensing arrangements, and other forms of business arrangements are included if classified as such in Chinese and foreign media reports. For the most part, the accuracy of these reports is not independently confirmed by *The CBR*.

National Council members can contact the library to obtain a copy of news sources and other available background information concerning the business arrangements appearing below. Moreover, member firms whose sales and other business arrangements with China do not normally appear in press reports may have them published in *The CBR* by sending the information to the attention of Betsy Saik.

<div style="border: 1px solid black; padding: 2px; display: inline-block;"> 中外 貿易 </div>	CHINA'S IMPORTS THROUGH SEPTEMBER 30
Foreign Party/ Chinese Party	Product/Value/ Date Reported

Agricultural Commodities

Sapporo Breweries (Japan)/Xinjiang Shanshan Grape Development Corp.	Will assist in cultivating hops. 7/86.
Brentwood Farms Inc. (US)	Will supply 350 head of Angus cattle. \$455,000. 8/86.
Department of Agriculture (US)/CEROILS	Will supply 145,850 tonnes of sugar. \$15.3 million. 8/86.

Chemicals and Chemical and Petrochemical Plants and Equipment

Socsil (Switzerland)/Beijing Oxygen Factory	Supplied equipment to produce 150 TPY of nitrogen monoxide. 4/86.
ERF Plastics Ltd., subs. of ERF (Holdings) Plc	LIC: Signed contract to provide technology to manufacture plastic-based products and equipment. \$1.1 million (£750,000). 5/86.
Sino Fluor Engineers (US-Sino JV)/SINOPEC	Awarded contract to supply four pressurized storage tanks at Daqing industrial complex ethylene plant in Heilongjiang. \$3 million. 5/86.
ERF (Holdings) Plc (UK) and Morton Machines (Scotland)/Dongfang Insulation (Sichuan), Harbin Insulation, and State Bureau of Supplies	Will supply two machines to mix plastics. \$75,465 (£50,000). 6/86.
PPG Industries (US)/NA (Nanchang, Jiangxi)	LIC: Signed agreement to provide technology and equipment for 10,000 TPY silica plant. 6/86.
Sulzer-Escher Wyss Inc. (Switzerland)/Yumen Chemical Plant, Gansu	Awarded contract to construct 50,000 TPY plant to convert salt into sodium sulphate. \$2.6 million (\$F4.5 million). 6/86.
(Hungary)/Nanning Organic Chemical Works, Guangxi	Sold technology and equipment to produce 10,000 TPY of sorbitol. 7/86.
(Japan)/Hongyan Paperboard Box Factory in Chongqing, Sichuan	Commissioned plastic production line. 7/86.

NA = Not available.

NOTES: Contracts denominated in foreign currencies are converted into US dollars at the most recent monthly average rate quoted in *International Financial Statistics (IMF)*. Contracts concluded over two months ago are also included if they were not reported in the last issue of *The CBR*. Leasing (LEAS), Licensing (LIC), Compensation (CT), and Assembling (ASSEM) deals are now included in the "China's Imports" section.

NA (US)/Fularji No. 1 Heavy Duty Machine Building Plant, Heilongjiang	Will supply coal gasifying equipment. 7/86.
Bayer AG (FRG) and Mobay Corp. (Bayer US Division)	Supplied herbicide for weed control in soybean crops. 7/86.
Cincinnati Milacron Inc. (US)/Wuhan Plastics Machinery	LIC: Will manufacture double screw extrusion machinery. 7/86.
East China Ltd. (HK)	Awarded contract to supply 6,000 liters of calixin EC for World Bank-supported China Rubber Development Project. \$54,338 (DM117,000). 7/86.
Flakt Danmark A/S, subs. of ASEA AB (Sweden) and Niro Atomizer A/S, subs. of De Danske Sukkerfabrikker A/S (Denmark)	Received order for desulphurization plant. \$3.7 million (DK30 million). 7/86.
Lurgi SA (France), subs. of Metallgesellschaft AG (FRG)/Shanghai	Signed contract to supply benzene ring steam cracker for petrochemical plant. \$260 million (FF1.8 billion). 7/86.
Marubeni Corp. and Toyo Engineering Corp. (Japan)/CNTIC, Tianjin	Awarded contract to supply 20,000 TPY propylene oxide plant for World Bank-supported Petrochemical Plant Project. \$9.5 million (¥1.5 billion). 7/86.
Mitsui & Co. Ltd. (Japan)/Heilongjiang	Concluded agreement for trade and technological cooperation in petrochemicals, heavy industry, and finance. 7/86.
Slaghekke Engineering (Holland)/No. 5 Chemical Factory in Changchun, Jilin	Awarded contract to build two factories to process cyanide powder into yellow and red salts. \$50 million. 7/86.
Soken Chemical and Engineering Co. (Japan)/Guangzhou Dongfeng Chemical Co.	Awarded contract to supply 1,000 TPY acrylate emulsion plant. \$1.9 million (¥300 million). 7/86.
Suzuka Toroyo Co. (Japan)	Reached agreement to supply know-how for 11 acrylate emulsion spray paints for building industry and to construct 5,000 TPY paint plant. \$1.1 million (¥180 million). 7/86.
Tabacos de Filipinas and Tecnicas Reunidas (Spain)	LIC: Will build chemical plants in Fushun, Liaoning and Suxian, Anhui. \$200 million and \$50 million respectively. 7/86.
NA (Italy)/Luoyang No. 6 Plastics Factory, Henan	Sold second-hand plastic production lines and other related equipment. \$700,000. 8/86.
Atochem SA, subs. of Nationale Elf Aquitaine, Ste (France)/Oriental Scientific Instruments Import/Export Corp.	Signed contract to provide know-how to produce thermofusible glues. 8/86.

BP Chemicals International Ltd. (UK)/SINOPEC and Lanzhou Petrochemical Industrial Corp., Gansu

Signed contract to install 60,000 TPY linear density polyethylene plant. 8/86.

Hochst Gosei KK (Japan)/Shenyang

LIC: Will supply technology to produce emulsion for textile-printing binders. 8/86.

Reichhold Chemicals Inc. (US)/CNCCC, Beijing Organic Chemical Co., and Huanqiu Chemical Engineering Corp.

LIC: Will build 15,000 TPY plant to manufacture vinyl acetate ethylene emulsion polymers. 8/86.

Sino Fluor Engineers (US-Sino JV)/CNTIC and Qilu Petrochemical Complex, Shandong

Awarded contract to provide engineering, procurement, and technical assistance services to build 70,000 TPY polypropylene plant. 8/86.

Triad Engineering Services Ltd. (Canada)/Shaanxi

Will supply 10,000 barrel/day oil refinery. \$20 million. 8/86.

Chemicals (Agricultural)

Kemira Engineering (Finland)

Awarded contract to supply fertilizer. \$7.9 million (FM40 million). 5/86.

Kemira Engineering (Finland) and Jacobs Engineering Group Inc. (US)

Awarded contract for feasibility study to determine if Chinese phosphate deposits are suitable for fertilizer production. 5/86.

Chilean Chemical and Mining Co. (Chile)

Signed agreement to sell 60,000 tonnes of sodium nitrate. \$7 million. 6/86.

Dragados y Construcciones SA (Spain)

Will build fertilizer plant. 7/86.

Uhde GmbH (FRG) and Snam Progetti Co. (Italy)/Zhongyuan Chemical Fertilizer Plant, Henan

Signed contract to supply 300,000 TPY synthetic ammonia and 520,000 TPY urea production line. 7/86.

Humphreys & Glasgow Ltd. (UK)/CNCCC and Luzhou Natural Gas Chemical Co., Sichuan

Awarded contract to increase ammonia plant output to 450 TPD. \$10 million. 8/86.

Philippine Phosphate Fertilizer Corp. (Philippines)/SINOCEM

Awarded contract to provide 80,000 tonnes of finished fertilizers. \$14 million. 9/86.

Construction Materials and Equipment

C. Itoh & Co. Ltd. (Japan)/Anhui Provincial Water Resources Bureau

Awarded contract to supply round steel bar for World Bank-supported Pishihang-Chaohu Area Development Project. \$2.9 million. 5/86.

The Summa Group Ltd. (US)/CNTIC

Awarded contract to supply steel wire rods for World Bank-supported Lubuge Hydroelectric Power Project. \$1.1 million. 5/86.

Hitachi Kenka (Japan)/Jiangnan Hydroelectric Power Bureau, Guizhou

Received order for 2 oil pressure shovels for Tianshengqiao dam. \$1.9 million (¥300 million). 6/86.

Marubeni Co. (Japan)/Anhui Provincial Water Resources Bureau

Awarded contract to supply deformed bar for World Bank-supported Pishihang-Chaohu Area Development Project. \$1.9 million. 6/86.

NA (Austria)/Xiamen Plastic Special Materials Co. Ltd. (Sino-foreign JV)

Will supply software to produce plastic doors and windows. 7/86.

Atlas Copco (Sweden)

Received order for drilling, tunnelling, and loading machinery to be used in constructing two-track Beijing-Guangzhou railway. \$4.5 million (SK32 million). 7/86.

Fives-Cail Babcock SA (France)/Yunfu, Guangdong

Signed contract to build cement works. \$30 million. 7/86.

Hellmuth, Obata & Kassabaum Inc. (HK)/Guangzhou

Awarded contract to build Guangzhou Convention and Exhibition Center. \$135 million. 7/86.

Paduana (Spain)

Will build acrylic sheet manufacturing plant. \$7-\$8 million. 7/86.

GEC Hong Kong Ltd. and Express Lift Co. (UK)/Bank of China, Zhuhai Branch

Awarded two contracts to supply and install lifts, escalators, and generator sets. \$3 million (HK\$23 million). 8/86.

Deutsche Nichimen GmbH (FRG), subs. of Nichimen Corp. (Japan)/CNTIC

Signed contract to supply particle board manufacturing plant. \$10.1 million (¥1.6 billion). 9/86.

Consumer Goods

(Italy)/Guangzhou Leather Industry Co.

Will supply three shoe leather manufacturing lines. 7/86.

Indesit-Industria Elettrodomestici Italiana (Italy)

Signed contract to build vacuum cleaner and electric motor factory. \$3.5 million. 7/86.

British United Shoe Machinery Co. Ltd./Beijing and Zhejiang

Will install shoe-making machinery equipment. 8/86.

Cryodynamics Co. (US)

LIC: Signed letter of intent to supply household refrigerator manufacturing technology. \$10 million. 8/86.

Matsushita Greatwall Corp. (Singapore)/Shangri-La Hotel in Beijing and Xiamen Holiday Inn

Received order for spring mattresses. \$503,340 (\$51.1 million). 9/86.

Electronics and Electrical Equipment

Eskofot (Denmark)

Signed contract to supply graphic reproduction cameras. 3/86.

Hartman & Braun AG, subs. of Mannesmann AG (FRG)/Yongsheng Electric Meter Plant, unit of Guiyang Industrial Corp., Jiangxi

Signed contract to transfer electric meter manufacturing technology. 4/86.

Sumitomo Corp. (Japan)/Ministry of Communications

Awarded contract to supply computers for World Bank-supported Three Ports Project. \$3.7 million. 4/86.

China Hewlett-Packard Co. (US-PRC joint venture)/MOFERT

Awarded contract to supply 60 minicomputers. \$10 million. 6/86.

Disco Abrasive Systems Ltd., Kaijo Electric, and Kanematsu-Gosho Ltd. (Japan)/No. 6 Semiconductor Plant, Beijing

Will supply semiconductor manufacturing equipment including dicing machines and wire bonders. 6/86.

Asahi Chemical Industry Co. Ltd. (Japan)/Economic Daily (*Jingji Ribao*) Publishing Co.

Will supply photoengraving system. 7/86.

Intellemetrics Ltd. (Scotland)

Shipped semiconductor instrumentation as part of 8-year sales and technology transfer contract. \$1 million. 7/86.

Novel Technology Development Ltd. (HK)

Awarded contract to supply 9 teletypewriters and electric typewriters for World Bank-supported China Rubber Development Project. \$44,120. 7/86.

Burroughs (Asia) Ltd. (US)/BOC, Guangzhou Branch and Guangdong Provincial head office

Will provide two mainframes and peripherals. \$1 million. 8/86.

Calma Co., subs. of General Electric Co. (US)/INSTRIMPEX, MMI, and China National Nonferrous Metal Industry Corp.

Received order for 22 CAE/CAD systems. \$5 million. 8/86.

Control Data Corp. (US)/National Nuclear Safety Administration

Will supply computer for regulatory safety analysis; partly financed by UN Development Planning Office. \$900,000. 8/86.

ISC Systems Corp. (US)/Industrial and Commercial Bank of China, Tianjin Branch and Tianjin New Technology Development Co.

Signed agreement to supply video display terminals for banking computerization. 8/86.

Japanese International Cooperation Agency/Chinese Patent Office

Signed agreement to provide computer system. 8/86.

Longines Watch Co. (Switzerland)/Beijing

Will supply time-keeping and data-processing equipment for Artistic Gymnastics World Cup Finals. 8/86.

Toshiba Corp. (Japan)/MEI Will supply assembly lines to produce personal computers. 8/86.

GEC Hong Kong Ltd./Tianhe Coliseum, Guangzhou Awarded contract to supply two giant color-matrix TV display systems. \$2 million. 9/86.

Electronics (Consumer)

Fuji Electric (Japan)/Rugao Radio Factory in Nantong, Jiangsu Signed agreement to supply technology, equipment, and materials to manufacture color TV high-voltage silicon diodes. 6/86.

Harris Broadcast Group (US)/Hunan Received order for television-program distribution system. \$1 million. 8/86.

Matsushita Electronics Corp. (Japan)/Shandong Foreign Trade Corp. Received order for color TV linear integrated circuit (IC) plant. \$4.4 million (¥700 million). 9/86.

Engineering and Construction

Everbright-Kumagai Development Co. (HK-Japan JV)/Guangdong Awarded contract to build bridge across Xi River in Jiangmen. \$23 million. 8/86.

Finance

Bank of Montreal (Canada)/Agricultural Bank of China Signed agreement to cooperate on promoting joint ventures, exchanging technology, and acting as agents. 8/86.

Food Processing and Food Service

Liebherr GmgH (FRG)/Wuhan Freezing Cabinet Factory, Hubei Signed agreement to provide freezer production line to make 200,000 units annually. \$5 million. 6/86.

Interimpex Enterprise of Skopje (Yugoslavia)/MACHIMPEX Barter: Signed contract to supply refrigeration, poultry farm, and fruit and vegetable processing equipment; bottling machinery; and sausage-filling machines in exchange for ballbearings, spices, rice, cocoa, and consumer goods. \$40 million. 7/86.

Machine Tools and Machinery

Brown Boveri Kent (Singapore)/Shenzhen Engineered computer-based telemetry control system at water treatment plant. 5/86.

Ahlstrom Machinery Inc. (US), subs. of A. Ahlstrom Osakeyhtio (Finland) Will supply lime kiln. 7/86.

Numeritronix, Inc. (US)/China United Shipbuilding Ltd., Shanghai Negotiated contract to supply CNC machines. 7/86.

Cincinnati Milacron Inc. (US)/Wuxi Machine Tool Plant LIC: Signed agreement to manufacture internal grinding machines. 8/86.

Thorn EMI Protech (UK)/MACHIMPEX and Beijing No. 2 Automation Instruments Factory Signed technology transfer agreement to produce fire protection equipment. 8/86.

Medical Equipment and Supplies

Instrumentation Laboratory SpA (Italy), subs. of Allied Corp. (US)/Nanjing Analytical Instrument Factory Signed agreement to supply pH/blood gas analyzers, sodium analyzers, and related equipment. 7/86.

Metals, Minerals, and Processing Technology

(USSR)/Ministry of Coal Industry and Shanxi Will provide plans to construct 800,000 TPY coal-preparation works. 4/86.

(Australia) Signed agreement to provide 30,000 TPY of aluminum. 5/86.

GEC Transmission and Distribution Projects Ltd. (UK)/Guangdong Received order for electricity conditioning systems for steelworks. \$603,720 (£400,000). 5/86.

Duval Marble Co. (US) Agreed to exchange information for exclusive foreign marketing rights for cultured marble products made in China. 6/86.

Hazemag Dr. E. Andreas GmbH & Co. (FRG) Received order for limestone crushing plant. \$1.1 million (DM2.4 million). 6/86.

Kobe Steel Ltd. and Shinsei Koeki Co. Ltd. (Japan)/Anshan Iron and Steel Co., Hebei Signed agreement to supply slab casting equipment. 7/86.

Sumitomo Metal Industries Ltd. (Japan)/MMI Will study iron manufacturing methods that use oxygen. 7/86.

Fried, Krupp GmbH (FRG)/Shanghai Iron and Steel Works Will supply rolled steel plant. 8/86.

Ipasco Ltd. (UK)/China International Steel and Fujian Will supply 125,000 TPY Swedish steel works. 8/86.

Kockums Jarnverk, subs. of Volvo (Sweden)/Fujian Sold steelworks. \$4.2 million (SK30 million). 8/86.

Mining Equipment

Kaiser Engineers and Constructors, Inc. and Consolidation Coal Co. (US)/Ministry of Coal Industry Awarded contract to analyze feasibility of using US-made underground continuous mining equipment and developing a mining plant for new underground coal mine in Shaanxi. 7/86.

Varpalota Factory of Veszprem Mining Enterprise (Hungary) Received order for 80 coal mine roof support shields. 7/86.

NA (GDR)/Ministry of Coal Industry Signed agreement to supply wax-extracting technology. 8/86.

Hunter Petroleum Corp. (US)/MMI Received order for Caterpillar mining and road building equipment. \$500,000. 8/86.

Saarland Federal State (FRG)/Shanxi Signed coal and iron cooperation treaty. 8/86.

Packaging

NA (FRG)/Hefei No. 1 Plastic Factory, Anhui Will supply computer-controlled equipment to produce polypropylene membrane packaging material. 8/86.

Petroleum, Natural Gas, and Related Equipment

Industrial Pipe Systems (Australia)/China North Industries Corp. Will supply nylon pipes, tubes, and pipe fittings to develop natural gas supply network in Tianjin. 5/86.

Jardine Engineering Corp. and Mather & Platt (HK)/Shenyang Pump Factory Signed agreement to transfer technology for manufacturing injection pumps. 5/86.

ITM and Rolls-Royce Ltd. (UK) Awarded contract to fabricate 3 power generation modules for oil industry. \$1.8 million (£1.2 million). 6/86.

Drexel Equipment UK Ltd./MACHIMPEX Signed contract to supply oilfield subsurface pressure recorders and accessories. 7/86.

Geograph Pioneer Inc. (US)/Ministry of Petroleum Negotiating 5-year contract to manufacture solids control drilling equipment. \$50 million. 7/86.

Eason Oil Co., subs. of ITT and Eason subs. C&C Enterprises (US)/Lanzhou Petroleum and Chemical Manufacturing Works, Gansu Signed three agreements; to provide operational support and drilling assistance, to identify US companies interested in submitting proposals for services and equipment, and to purchase oilfield pumping units and related products. 8/86.

Ports

PWH Co. (FRG)/CNTIC Awarded contract to supply equipment for third-phase construction of Qinhuangdao Coal Port. \$50.4 million. 7/86.

Power Plants and Equipment

Dulmison Co. Lt. (Australia) Signed contract to supply 14,000 four-wire spacer bars for transmission lines. 6/86.

Ansaldo, subs. of IRI-Finmeccanica and Gruppo Industrie Elettromeccaniche (Italy) Signed two contracts to construct three electric power stations. 8/86. \$338.2 million (L500 billion). 8/86.

Tokyo Electric Power Co. (Japan)/Ministry of Water Resources and Electric Power Signed memorandum calling for exchanges in utility service and power generation management expertise, regular meetings of experts and technicians, and vocational training. 8/86.

Japan Atomic Energy Research Institute/Qinghua University, Beijing Will collaborate in developing high temperature gas-cooled reactors. 9/86.

Printing Equipment, Publishing & Broadcasting

BBC (UK)/CCTV Will provide TV programs in return for sponsorship and advertising revenues. 8/86.

Consolidated-Bathurst (Canada)
Signed contract to supply newsprint mill. \$72.4 million (C\$100 million). 8/86.

Property Development

Holiday Inns Inc. (US)
Reached agreement to manage Holiday Inn-Canton/City Center Hotel to open in late 1988. 7/86.

Pacific Consultants International and International Development Center (Japan)
Received order for plan to develop Hainan Island. \$2.5 million (¥400 million). 7/86.

Misawa Homes Co. (Japan)/Tianjin International Golf Club
Received order to construct clubhouse. \$1.3 million (¥200 million). 9/86.

Tian An Investment Co. (HK)/Beijing Diaoyutai Economic Development Co., Beijing
Signed contract to build Diaoyutai Hotel. \$42 million. 9/86.

Scientific Instruments

Pacific Consultants International and Japan International Cooperation Agency (Japan)/Shanghai
Will conduct study on atmospheric pollution. \$1.3 million (¥200 million). 7/86.

Shipping

NA (Japan)/Dalian Marine Transport Authority
Barter: Will export two second-hand freighters in exchange for \$844,000 worth of processing-grade fish. 5/86.

Glamox (Norway)/Shanghai
Awarded contract to supply lighting for five dry bulk carriers. 7/86.

Jeuco Container Transport Co. (Japan)/SINOTRANS
Signed provisional agreement to transport soybeans and other crops from inland China to Japan and other destinations. 8/86.

TNT Skypak (US)/SINOTRANS
Began "Premier" desk-to-desk document and small parcel courier service. 8/86.

Telecommunications

NEC and Marubeni Corp. (Japan)/Zhuhai Post Office Bureau and Guangdong Provincial Machinery Import/Export Corp.
Signed two contracts to supply digital communication systems. 5/86.

Swedish Space Corp.
Will supply airborne maritime surveillance system. 5/86.

GTE Telecomunicazioni SpA (Italy), subs. of GTE Corp. (US)/CNTIC
Awarded contract to supply digital microwave communication system for World Bank-supported Lubuge Hydroelectric Power Project. \$1.3 million. 7/86.

Telefonica (Spain)/Beijing
Will sell telephone exchange technology and equipment. \$20 million. 7/86.

NA (Canada)/Guangzhou City Telecommunications Bureau
Signed 10-year agreement to set up 300 telephone booths for local and long-distance calls. Canada: \$1.2 million. 8/86.

Western Union (US)/Great Wall Industrial Corp.
Signed letter of intent to launch communications satellite on China's Long March rocket. 9/86.

Textiles and Textile Plants and Equipment

NA (Belgium) and NA (Italy)/Yiyang, Hunan
Sold two computer-controlled carpet weaving lines. 4/86.

Instron (UK)
Received order for materials testing machines. \$2.1 million (£1.4 million). 6/86.

NA (FRG)/Chongqing Shirt Factory
Will supply 3 shirt production lines. 7/86.

NA (Italy)/Tianjin Industrial Sewing Machine Factory
CT: Signed contract to supply know-how to produce single-needle lockstitch sewing machines. 8/86.

NA (Japan)/Shanghai Industrial Sewing Machine Factory
Signed contract to supply equipment to produce 96,000 single-needle lockstitch sewing machines annually. 8/86.

Mitsubishi Electric Corp. (Japan)/China Standard Sewing Machines Corp.
Signed contract to supply technology to manufacture 35,000 sewing machines and parts to assemble 40,000 machines. 8/86.

Transportation and Transportation Equipment

Wako Koeki Co. Ltd. (Japan)/CNTIC
Awarded contract to supply signal cable for World Bank-supported Railway 1 Project. \$2.7 million. 1/86.

Alsthom-Atlantique SA, subs. of Generale de Electricite SA, Cie (France)
Will provide 61 engines for Shenmu, Shaanxi coalfield rail link. 7/86.

Ballast Nedam Group NV, Philips BV, Netherlands Airport Consultants, and Airport Management Services, part of Luchthaven Schiphol (Netherlands)
Negotiating contract to expand and modernize Hongqiao Airport, Shanghai. \$82.4 million (DG200 million). 7/86.

Dengyo (Japan)
Received order for cars to test railway track. 7/86.

French Railway Authority
Will build 250 km of 800 km Shenmu coalfield rail link. 7/86.

Societe Generale (France)
Signed financing agreement to build rail link to Shenmu coalfield. \$577 million (FF4 billion). 7/86.

Toko Bussan Co. Ltd. (Japan)
Awarded contract to supply 70 passenger-cargo buses and 8 sets of electronic scales for World Bank-supported China Rubber Development Project. \$523,329 (¥83 million). 7/86.

General Electric Co. (US)/Civil Aviation Supply Corp., div. of CAAC, and CAAC, Shanghai Branch
Signed contract to supply 5 turbofan aircraft engines. \$40 million. 8/86.

Gottlob Auwaerter GmbH & Co. and Neoplan (FRG)/NORINCO, Beijing
LIC: Reached 10-year agreement to supply 10,000 kits for transit and inter-city buses. 8/86.

Nissan Diesel Motor Co. (Japan)/No. 2 Automobile Works in Xiangfan, Hubei
Agreed to sell labor management and quality control expertise to produce heavy-duty trucks. 8/86.

Miscellaneous

International Trade Expositions Inc. (US)/Guangdong Province
Signed contract to act as agent for province. 6/86.

International Trade Expositions Inc. (US)/Tianjin
Signed formal contract for trade exposition and "sister co." contract to act as agent for bringing in business. 6/86.

Omni Films International (US)
Sold 15 180-degree theaters. 7/86.

Mitsubishi Corp. (Japan)/China Science Technology Exchange Center
Will become sole agent to introduce Chinese technology to Japan in areas of agricultural chemicals, medicines, and tellurium and lithium processing. 8/86.

中外
贸易

JOINT VENTURES AND DIRECT INVESTMENT THROUGH SEPTEMBER 30

Foreign Party/
Chinese Party

Arrangement/Value/
Date Reported

Agricultural Commodities

NA (US)/CEROILS, Guizhou Miao and Dong Autonomous Prefecture Branch
Signed 10-year joint venture to explore oil-bearing crop resources in southeast Guizhou. \$7 million. (50-50). 4/86.

Agricultural Technology

Aeration Industries, Inc. (US)/Chongqing Technique Equipment Co.
Signed letter of intent to form joint venture to manufacture and market aspirator aerators. 8/86.

Aeration Industries, Inc. (US)/Design and Research Institute of Aquatic Products, Yunnan
Signed letter of intent to form joint venture to research and promote use of aspirator aerators. 8/86.

Rice Bran Industry Co. (US)/Miaotong Grain and Edible Oil Co., Guizhou
 Signed 10-year agreement to provide oil crop-processing equipment. \$7 million. 8/86.

Wattie Industries (New Zealand) and Prima (Singapore)/Yantai Feeds Corp., Shandong
 Signed 22-year agreement establishing Xinzhongxin Feeds Corp. to set up animal feed plant. \$2.4 million. (NZ:25%-S:25%-PRC:50%). 9/86.

Chemicals and Chemical and Petrochemical Plants and Equipment

NA (Canada)
 Established 15-year joint venture to produce 3,000 TPY butadiene styrene latex and to develop four other products. (50-50). 4/86.

Asian-Pacific Investment Corp. (Australia)/Hangzhou Dongnan Chemical Plant
 Signed 16-year contract establishing Asian-Pacific Soap Co. Ltd. to coproduce solid and liquid soaps. \$4 million. (A:49%-PRC:51%). 7/86.

Zimmer AG (FRG) and Lagood Co. Ltd./Zhongshan Polyester Fiber Plant, Guangdong
 Commissioned to build 10,000 TPY joint venture polyester yarn plant. \$18.6 million (DM40 million). 7/86.

Pfizer (US)/Haicheng Talc Mine
 Established joint venture to construct 100,000 TPY flotation plant to produce talc for coating plastics. 8/86.

Consumer Goods

Sino-French Industrial and Commercial Investment Co./Tianjin No. 1 Leather Goods Factory
 Signed agreement establishing Tianjin Global Leather Goods Co. Ltd. to produce gloves, fur coats, and other leather products. 6/86.

NA (HK)/Nanchang Watch Factory, Jiangxi
 Reached 10-year agreement to produce electronic quartz watches. \$1 million. 7/86.

Everbright Group and NA (HK)/Wanli Leather Co. of Guangzhou Leather Industry Co.
 Established Guangsheng Leather Co. Ltd. to produce shoes. \$1.5 million. (EG:35%-NA:5%-PRC:60%). 7/86.

Iwaya Corp. (Japan)/China Light Industrial Products Import/Export Corp., Beijing Branch
 Negotiating toy-making joint venture. 7/86.

Electronics and Electrical Equipment

Fujitsu Ltd. (Japan)/Agricultural Bank of China and North China Computation Technology Laboratory
 Agreed to jointly develop software for teller terminals. 8/86.

Finance

Bank of Credit and Commerce International and Abu Dhabi Investment Authority (United Arab Emirates)/CITIC
 Will establish joint venture finance co. \$30 million. (33.3-33.3-33.3). 8/86.

Food Processing and Food Service

NA (Singapore) and Hong Kong Gulf Industrial Co. Ltd./Mouping Marine Products Co., Shandong
 Signed contract establishing Dayang Co. Ltd. to produce fish products. \$1 million. (50-50). 5/86.

Baskin-Robbins (US)/Shanghai Poultry & Egg Corp.
 Signed letter of intent for joint venture to manufacture ice cream. 7/86.

Nisshin International (Japan)/Qingdao Food Factory
 Established Qingdao Nisshin International Food Development Corp. \$1.6 million (¥5.7 million). 7/86.

Abay Engineer Group (Belgium)/CNTIC and Changsha, Hunan
 Signed contract establishing Changsha Fructose Factory. \$2.7 million (¥10 million). (B:30%-PRC:70%). 8/86.

Heinz Co. (US)/CITIC and Guangdong Joint Foods Enterprise
 Signed letter of intent for joint venture to produce ketchup. \$10 million. (US:60%-PRC:40%). 9/86.

Medical Equipment and Supplies

Bausch & Lomb Inc. (US)/Beijing No. 609 Factory
 Signed 3-year contract establishing Beijing Contact Lens Ltd. 8/86.

Bayer AG (FRG)/Shanghai Dental Materials Factory
 Established Bayer Shanghai Dental Co. to produce false teeth and other dental products. \$1.9 million (DM4 million). (UK:55%-PRC:45%). 8/86.

Metals, Minerals and Processing Technology

Davy McKee Ltd., General Electric Co. Plc, British Oxygen Co. Ltd., and Northern Engineering Industries (UK), and Babcock and Wilcox, subs. of McDermott International Inc. (US) and Ferrostaal GmbH (FRG)/MMI and Ningbo
 Negotiating joint venture to build 3 million TPY steel mill. \$4.1 billion (£2.7 billion). 7/86.

Packaging

Canmakers Australia/Guangdong Foodstuffs Corp. and Guangzhou Economic and Technical Development District Industrial Development Corp.
 Signed agreement establishing joint venture factory to produce 7.5 million cans and 200 million bottle seals annually. \$2.8 million (A\$4.5 million). 7/86.

Petroleum, Natural Gas, and Related Equipment

NA (Canada)/Shanghai Jiaotong University
 Will develop remote-controlled undersea scuba device for use in offshore petroleum exploration and underwater salvaging work. 8/86.

British Petroleum Development Ltd. (UK)/CNOOC
 Signed contract to explore in South Yellow Sea. 8/86.

Cluff Oil PLC (UK) and Den Norske Stales Oljeselskap AS (Stalolil) (Norway)/South Yellow Sea Corp., subs. of CNOOC
 Signed agreement on joint excavation of first exploratory well in northern region of South Yellow Sea. 8/86.

J.P. Kenney (UK)/China Offshore Oil Development & Engineering Corp., subs. of CNOOC
 Signed agreement to conduct joint feasibility and conceptual design study of Qiong Zhou Strait crossing (south of Hainan Island) for 620 miles gas pipeline linking Yacheng field in South China Sea with mainland. 8/86.

Amoco Orient Petroleum Co., unit of Amoco Corp. (US)/CNOOC
 Signed third contract for cooperative oil exploration in 19 blocks of Pearl River Mouth Basin in South China Sea. 9/86.

Power Plants and Equipment

Fluor Daniel International Corp. and Fluor Engineers and Constructors Ltd., subs. of Fluor Corp. (US) and British Electricity International, Ltd.
 Awarded contract to provide operation, training, and maintenance services for new power station. 7/86.

Property Development

Scan Dev A/S (Norway)/Beijing Huayuan Economic Development Co.
 Signed 20-year contract to jointly build and manage Huawei Center in Beijing. \$45 million. 5/86.

Axiom International Development Corp. (Canada) and OFFA International (agent) (US)/Tian Lun Service Corp. and Beijing ITIC
 Signed contract establishing Beijing Tian Lun Hotel Co. to construct Tian Lun Hotel, Axiom Beijing. \$48 million. (AIDC:40%-TISC:50%-BITIC:10%). 7/86.

C. Itoh & Co. Ltd. (Japan)/China State Physical Culture and Sports Committee
 Established Beijing International Tennis Center Co. to build rental condominiums and tennis courts for 1990 Asian Games in Beijing. \$9.5 million (¥1.5 billion). (Japan:49%-PRC:51%). 8/86.

Tokyu Corp. (Japan)/Wuxi City Travel Co. and CITIC
 Established 15-year joint venture to construct and manage Wuxi Hotel. \$10 million (¥32.5 million and ¥175 million). (TC:49%-WCTC:36%-CITIC:15%). 8/86.

Nitchukaihatsu Co. (Japan)/Economic Development Service Corp. Eastern Country Region, Tianjin
 Established Tianjin Golf Club joint venture. 9/86.

Seibu Department Store Ltd., Kijima Corp., Tokyo Mutual Life Insurance Co., and Mitsui Loan Co., Ltd. (Japan)/Wanshou Hotel
 Signed agreement to jointly build new hotel. 9/86.

Printing Equipment, Publishing, and Broadcasting

Filmline International (Canada)/China Film Co-production Corp. Will coproduce mini-series based on life of Norman Bethune. 8/86.

Jardine Printing, div. of Jardine Marketing Services Ltd. (HK)/Cultural Relics Printing and Publishing House of China and China Economic and Trade Consultants Corp. Established Wenwu and Jardine Printing Co. in Beijing to provide commercial printing services for Chinese and foreign companies and hotels. 8/86.

Robert Chua Production House Co. (HK)/Guangdong TV Service Center Signed agreement establishing joint venture TV production unit to produce commercials, documentaries, and educational programs. \$1.2 million (HK\$9 million). (50-50). 9/86.

Scientific Instruments

Ametek (US)/Shanghai Instruments and Meters Corp. and Shanghai No. 4 Automated Instruments Factory Negotiating joint venture to produce 1.1 million pressure gauges. 8/86.

Telecommunications

(Brazil) Signed agreement to manufacture and launch satellite for gathering meteorological and agricultural information. \$6 million. (50-50). 8/86.

Furukawa Electric Co. Ltd. (Japan)/Xi'an Electric Cable Factory Signed agreement establishing Shianfu Optic Fiber and Cable Co. Ltd. to produce 10,000 km of optical fibers and 2,400 km of cable annually. 8/86.

Textiles and Textile Plants and Equipment

NA (HK)/CHINATEX, Yunnan Branch and NA (local garment factory) Established E.H.C. Yunnan Garment Co. Ltd. to manufacture blouses and cotton jackets. \$750,000. (HK:25%-CHINATEX:30%-NA:45%). 1/86.

Brother Industries (Japan)/Fujian Investment Corp. Established knitting machine service center in Fuzhou. 7/86.

MacQuarie Worsteds (Australia)/Beijing No. 1 Cotton Mill Signed contract establishing Jing-Ao Wool Co. to produce 400-600 TPY of wool yarn. 7/86.

Transportation and Transportation Equipment

NA (US)/Foshan Motorcycle Plant of Guangdong Provincial Motorcycle Industrial United Corp. Signed 18-year coproduction contract to build motorcycle plant in Foshan, Guangdong. \$40 million. (US:75%-PRC:25%). 5/86.

General Motors (US)/China National Automotive Industry Corp., Beijing Internal Combustion Engine Plant, Wanyuan Corp., North China Industrial Corp., and CITIC Negotiating joint venture to produce vans, heavy-duty trucks, passenger cars, engines, and casting and stamping parts and components. 7/86.

Grumman Corp. (US)/Shanghai Fire Protection General Plant

O'Phee China Trade Co. Ltd. (HK)/Zhuhai

Pratt & Whitney, div. of United Technologies and Elliott Co. (US)/CATIC and Chengdu Engine Co.

Shaw Tegee Co. Ltd. (HK)/Ma'anshan Steel and Iron Corp. and CITIC

United Tires Industry Canada Ltd. and Hong Kong Sam Yed Co. Ltd./Tianjin Rubber Industry Co.

General Signal Corp. (US)/China Railway Signal and Communications Corp.

Messerschmitt-Bölkow-Blohm GmbH (FRG) and McDonnell Douglas Corp. (US)/Ministry of Aviation Industries

Transworld Group (US)/Great Wall Industry Corp., Beijing Wanyuan Industry Corp., China Leasing Co., and China Capital Engineering Works

Miscellaneous

NA (France)/Nantong

Superkleen USA Inc. (US)/Tianjin Economic Development Corp.

Melewar Corp. (Malaysia) and Asia Eagle Co. (HK)/Guangdong Foreign Economic Corp.

Matsushita Greatwall Corp. (Singapore)/Tianjin Economic and Technological Development Area Corp. and Tianjin Furniture Industry Co.

Negotiating joint venture to manufacture fire trucks. 8/86.

Signed 25-year contract to build and operate O'Phee (Zhuhai) Trailer Co. Ltd. to produce tractors and trailers. \$10 million. 8/86.

Will develop and coproduce industrial gas turbine engines. \$150 million. 8/86.

Signed letter of intent on establishing Ma'anshan Axle Plant 18-year joint venture to produce axles. \$22 million (¥80 million). 8/86.

Signed joint venture contract to produce engineering tires. \$30.6 million. 8/86.

Signed contract establishing Casco Signal Co. in Shanghai to produce rail traffic control systems. 9/86.

Will develop 100-seat jet aircraft. 9/86.

Established Global Aviation Modernization Association Corp. to modify and retrofit Boeing fleet. \$40 million. (50-50). 9/86.

Established Susang Leather Co. Ltd. to process sheepskin into leather. 7/86.

Established joint venture automatic dry-cleaning store. \$285,000. (US:35%-PRC:65%). 7/86.

Signed agreement establishing Melewar Guangdong Trade & Development Corp. to promote trade and investment between Malaysia and China. (MC:51%-AEC:16%-GFEC:33%). 8/86.

Signed agreement establishing joint venture factory to manufacture mattresses for hotels. \$3 million (\$\$6.5 million). (50-50). 9/86.

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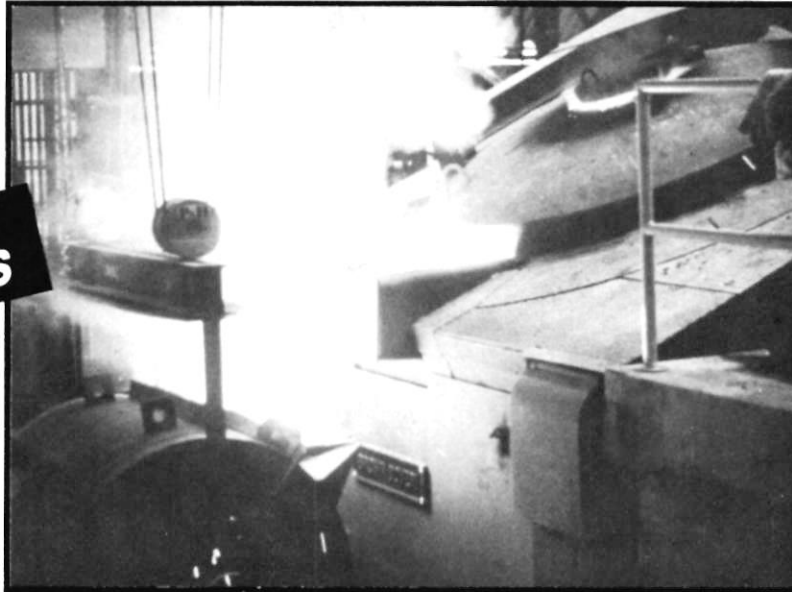
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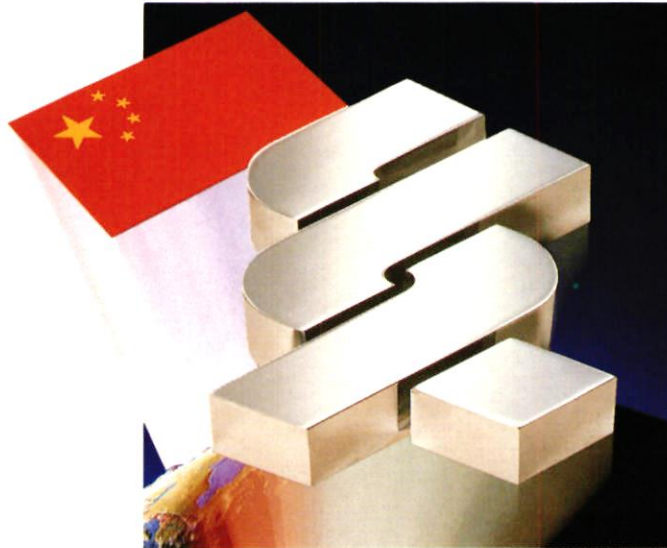
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