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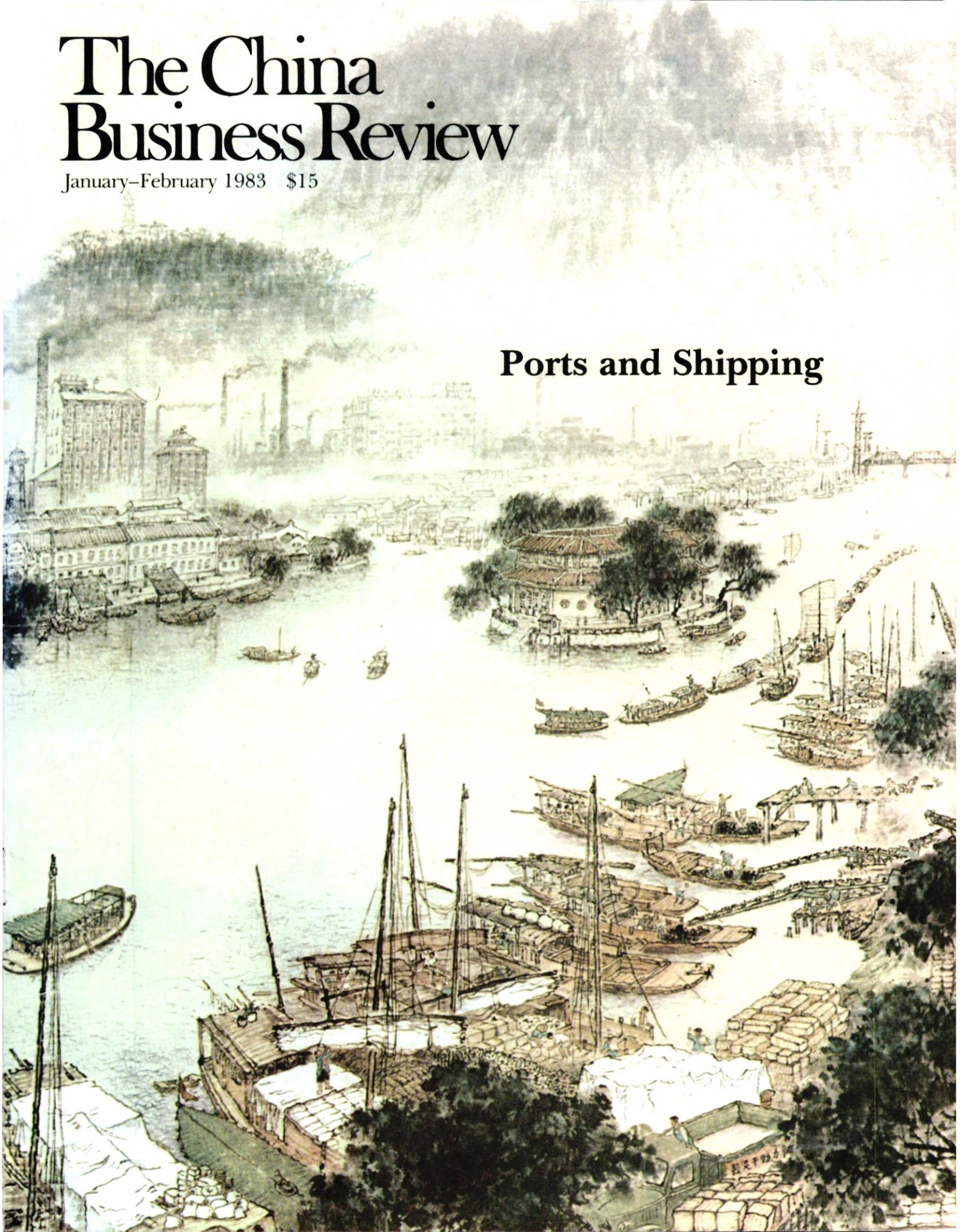

Ports and Shipping

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Hacks and drays crowded Pacific Mail Steamship Company's wharf at First and Brannan Streets in 1867 to await the arrival of the large wooden side-wheelers inbound from the Far East. That year the first regular steamship service across the Pacific Ocean was established providing monthly service between San Francisco and Shanghai. Besides mail and passengers, the steamers carried up to 2,800 tons of cargo – primarily rice, silk and tea, inbound, and flour and "treasures" on the outbound voyage.

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The China Business Review

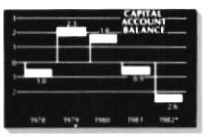
The magazine of the National Council for US–China Trade

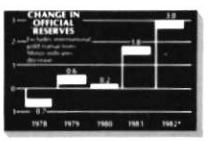
January–February 1983 Volume 10, Number 1

Cover: China has embarked on a campaign to modernize several major ports. Nonetheless, congestion problems are likely to plague its major international ports for the remainder of this decade. *1958 Wuxi waterfront by Qian Songyan.* **Page 14.**

Eastern Etiquette: ***"Is it possible to ask if their 'maybe' really means 'maybe'? Or does it mean 'no,' or 'probably yes,'. . . "*** **Page 9**

Financial Conservatism: From billion-dollar deficits three years ago, China has scored two consecutive surpluses and record foreign exchange reserves, while managing to make a dent in its foreign debt. **Page 48.**





Departments

摘要

HELLO? ANYONE HOME?

"I wish you could see the stack of unanswered telexes I've sent to China," exclaimed one China trader. "The Chinese keep telling us to import more, but when we contact them for prices or samples we seldom get an answer."

Communicating with China is not for the impatient. There is the oft-told story of the person who not so long ago received the reply, "Re your telex of 1978." A more typical case is that of the US importer who wanted to promote Chinese bed sheets. "It would have done fabulously," a trader claims. "The importer was well known, had good contacts, and could have helped the Chinese promote their exports. But getting information was like pulling teeth. The client finally had to turn to other Asian suppliers." Comments the vice-president of a West Coast company: "Before we had our own people in China we never expected to get a reply."

"Inland provinces pose the greatest difficulty," says the executive of a New York pharmaceuticals company. "In the botanical business, for example, they have the best products, best prices, and really want to do business, but they just don't communicate."

"Communication has been a constant problem through the years," says Carolyn Brehm, director of Business Advisory Services at the National Council. "I recommend to companies that are seriously involved in trade with China to post a representative there, or at least obtain the services of a Beijing office through a trading company or the National Council. An on-the-scene representative is the best way to communicate directly with Chinese organizations."

One trader is looking hopefully to China United Trading in New York City. "They will be worth their weight in gold," she notes, "if they do the follow-up work to find out why requests go unanswered." China United Trading is scheduled to open in February at 1 Penn Plaza. Directly under China's powerful Ministry of Foreign Economic Relations and Trade, it was established to improve the service offered by PRC trading corporations based in the US.

7th RANKED POWER

"In 1981 China's merchant marine ranked seventh in the world in terms of the number of ships," Irwin M. Heine said. "The US was eleventh."

Heine, the author of more than 40 books, monographs, and articles on the American, Soviet, and Chinese maritime industries, commented on recent PRC shipping development during an exclusive *CBR* interview.

"Even during the Great Leap Forward and Cultural Revolution," Heine continued, "the growth of China's fleet never diminished. It was Zhou Enlai who understood the realities of international politics. He realized that if China was to develop, she needed a merchant fleet.

"Between 1975 and 1981, China's fleet grew by a spectacular 93.4 percent. That is the fastest rate of increase in the world after Greece. Between now and 1985, they will be adding another 2½-3 million tons."

"China has skilled workers, and very, very low wages. In fact, they are offering export credits to build ships in Chinese yards. They even undercut South Korea, which is cheaper than Japan. As of April 1982, the PRC ranked 18th among the world's largest merchant ship builders. That is remarkable for a relative newcomer." He predicted: "Future PRC ship purchases probably will be limited to modern, specific-purpose vessels sold at bargain prices.

"Their goals are certainly in the realm of the possible," Heine said, referring to China's December 4 announcement that the nation's fleet in 1982 of 10.6 million deadweight tons would increase to 20 million by 1990, and 30 million by the year 2000. "Regarding the 30 million target, however, I will have to say 'maybe'."

And what do these developments mean for the beleaguered US shipping industry? "The traditional maritime countries face a major headache," Heine noted. "More and more, Russia and China will be entering regular service routes as well as the cross trades. These government-owned and -controlled fleets can and do offer cut rates. Their crew costs are just a fraction of world costs.

"The Chinese have stated that they carry about 70 percent of their ocean-borne foreign trade. But PRC flag ships do not have the tonnage yet to carry 70 percent. I believe the percentage may be closer to 55 percent, the difference being cargoes carried in Panamanian and Hong Kong flag ships wholly owned and controlled by the PRC, as well as ships chartered from the Greeks and other national fleets."

Turning to the industry's problem areas, Heine pointed to the example of the 50,000-ton tanker launched three years ago—then the largest ever built in China. "I suspect the reason it disappeared and was never heard from again is because it lacked powerful enough engines, among other design deficiencies. Now China is obtaining foreign licenses to build engines, pumps, and generators. Of course, they are also terribly short of managers.

"One must never forget," Heine remarked, "that what drives the Chinese is old-fashioned mercantilism. Ingrained in their philosophy is the idea that China must carry its own cargo."

THE LEAN MACHINE

Deng and his followers are quietly doing to the military what has been done to the government—slowly easing out old comrades in favor of younger, better-trained administrators. The result could be a leaner, more technically sophisticated military machine.

The reorganization began in September with the appointment of 43 top military leaders, including 6 of the 11 regional commanders, to the Party's Central Advisory Commission. Growing evidence supports the widespread belief that the commission provides a face-saving means of forcing retirements. Within weeks, leaders of three regions had been changed, along with at least 170 senior officers.

The Chinese also appointed a new minister of defense, General Zhang Aiping, in November to carry out Deng's plan to significantly reduce the size of China's armed forces, keep the PLA under a very tight budget, and make better use of available resources for military modernization.

Zhang has perhaps the most impressive professional credentials of any senior PLA leader, serving as commander of China's first combined forces operations in the mid-1950s and as vice-chairman of the National Defense Science and Technology Commission in the 1960s. He played a major role in the development of China's nuclear capability. By 1975, he was chairman of the NDSTC and supervised China's satellite, ICBM, and submarine-launched missile programs. In 1977, Zhang became a PLA deputy chief of staff and in 1980 a vice-premier. Zhang recently characterized modern warfare (and by implication, China's military deficiencies) by its high degrees of automation, speed, flexibility, and complexity, brought about by mechanization and computerization.

Getting the PLA officers and men to accept Deng's military line is the responsibility of the PLA General Political Department. GPD director Wei Guoqing recently lost his job for his failure to stem criticism of Deng's reform program in the PLA's newspaper. His replacement is Yu Qiuli, one of the chief figures in the "energy clique." Although certainly not a strong supporter of Deng, Yu is known as a strict Party man who demands results rather than rhetoric. He is fully committed to China's modernization, and his pre-Liberation military record commands the respect of senior PLA officials.

At about the same time, the aged and infirm navy chief, Ye Fei, stepped down. He was replaced by Liu Huaqing, the deputy chief of staff apparently in charge of procurement, a former NDSTC vice-chairman and an old comrade-in-arms of Deng Xiaoping. It was Liu Huaqing's visit to the US in 1981 that was postponed indefinitely due to the Taiwan arms controversy.

So far, only one somber note for Deng. His handpicked military representative on the crucial Party Secretariat, Yang Yong, died in January. Finding a replacement acceptable to both Deng and the PLA leadership will not be easy.

CHINESE GASOLINE

China's single largest export to the US—refined petroleum—could decline sharply this year. Gasoline imports from the PRC rose from negligible levels in 1980 to over $250 million in 1981, and probably peaked in 1982 at around $340 million.

Major West Coast importers are reporting reduced purchases in 1983, due to EPA's reduction of the permissible levels of lead added to gasoline (from 1.5 to 1.1 grams per gallon). This will add to the cost of non-lead octane enhancers for low-power Chinese gas. SINOCHEM has refused to reduce its prices to adjust to this differential, preferring instead to unload the excess not taken by its US customers on the world spot market.

Even more serious are California's state regulations that will reduce lead levels in gas sold there to only .8 grams per gallon in November 1984. Unless the Chinese can produce a higher octane unleaded product by that time, these rules may effectively close off the California market, which currently represents about 80 percent of all Chinese gas sold in the US.

WHEN IT RAINS IT POURS

The outpouring of economic statistics from China in the last three years, and particularly during the last few months, is one of the most startling aspects of China's increased international "openness."

"By comparison, the USSR has accommodated the West rather grudgingly," comments Jack Brougher, a Soviet desk officer at Commerce. "Occasionally Soviet officials will cite Western statistics on gold reserves or their debt to the West, declining to provide their own figures. China appears more enthusiastic about adapting to international customs."

But that was not always the case. China's statistical blackout began in 1959 and did not really end until 1979. On June 21 of that year, China's former finance minister, Zhang Jingfu, released the government's budget for 1977–79. Then on June 27, China's newly resurrected State Statistical Bureau released comprehensive production statistics for 1977 and 1978. All were the first such releases in 20 years.

Monetary statistics were released on July 20, 1981, in the Chinese-language quarterly *Banking in China*. In October 1982, China's customs authorities began issuing detailed trade statistics on a quarterly basis. The PRC's Sixth Five Year Plan was released in its entirety on December 19, 1982, followed a few days later by the government's 1983 plan targets. Also in late 1982, the voluminous (1,144 page) *Almanac of China's Economy* appeared in English (*see* Bookshelf). The last time China released anything comparable to the current wealth of material was in the SSB's slender volume *Ten Great Years*, published in 1959.

The reaction of China watchers has been largely one of astonishment. Self-congratulations may also be in order, especially for US government and academic analysts, as it quickly became clear from the SSB data that the figures they laboriously developed over the years—gathered from sketchy and often contradictory PRC media reports—were fairly close to the figures used by China's policy makers.

Now that US analysts have had a chance to talk with their Chinese statistical colleagues, it has become even clearer that the hunches many held about China's statistical system were also fairly accurate. First of all, there hardly was a Chinese statistical system to speak of during the Great Leap Forward and Cultural Revolution. Secondly, the PRC's statistical network was weak and understaffed, even when allowed to function. "They didn't have the personnel to keep one set of books to fool foreigners, and another for internal use," says Dr. Nai-Ruenn Chen, a senior international economist at Com-

merce. Chen noted that when the numbers were erroneous, "in most cases" it was because someone was trying to mislead the upper echelons of the Chinese government.

"Fooling the foreigners was incidental," Professor Tom Rawski agrees. "The information blackout may have had more to do with the difficult economic situation in the 1960s after the Great Leap. I cannot see them stopping their publishing apparatus just for foreigners."

Why the decision to open up in 1979? "They crippled themselves with excessive secrecy," Rawski maintains. "Besides, who were they fooling? Foreigners knew such things as China's grain harvest anyway."

One US official tells the story of a Chinese researcher who, upon visiting Washington as part of a government-to-government exchange, headed straight for the Library of Congress. "Why? He wanted to get a copy of his own article that had been destroyed during the Cultural Revolution." Comments Professor Rawski: "The Chinese are starved for data."

"The upsurge in statistics is an aspect of modernization," says Leo Orleans, senior researcher at the Library of Congress. "They feel they have a real need for statistics. The Chinese, after all, are very statistical," he added. "Look at the large number of statistical almanacs and references put out by Taiwan. The norm for the Chinese is to produce abundant statistics. The statistical blackout of the 1960s and 70s was unnatural."

Though much has changed, the old question still remains: How much trust should be put in Beijing's statistics? Deliberate falsification is still impractical for the same reasons it was back in the 1960s, many observers believe. "I have always felt the numbers may be tricky to interpret, but they mean something if you understand the definitions," Rawski says. Dr. Chen points out that Beijing uses the media to relay decisions down to the grass roots. If the statistics, goals, and policies in the newspapers are put there to deceive foreigners, they would also deceive local cadres, he feels. Furthermore, with only one telephone for every 300 Chinese (the US ratio is 1:1, and 1:13 for the USSR), the press and radio are about the only way the Chinese can communicate.

But knowing what the numbers mean is another matter. "They still have a problem with definitions," Orleans said. "For example, China's recent urban population of 207 million is completely contrary to anything realistic. Before issuing that figure, they said China's urban population was about 139 million. Obviously, they decided to include rural communes under the jurisdiction of cities."

Significant gaps in the data still exist, of course. Business people, especially those who have put equity into China, are desperate for local price lists. They wonder: What is the price of glass, cement, and other basic materials in China? Moreover, the Chinese Customs Authority, and China's Ministry of Foreign Economic Relations and Trade, use different foreign trade figures—a real problem for traders. But, at least the days are gone when China watchers were reduced to "examining Mao's quotations," in the words of one veteran Pekingologist.

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(Signed) James B. Stepanek, Editor

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(Signed) James B. Stepanek, Editor

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书刊介绍

Three excellent new reference books from China are now available. Two have been published in English-language editions; the third is a bilingual Chinese–English edition.

Statistical Yearbook of China 1981, compiled by the State Statistical Bureau, PRC. Hong Kong: Economic Information and Agency (342 Hennessy Road), 1982. 524 pp. US$21 surface; US$25 airmail.

The yearbook's statistical tables provide an indispensable research aid covering the 31-year period up to and including 1981. The figures, some of which have been revised due to changes in units of measurement or statistical coverage, are authoritative, issued by China's State Statistical Bureau. The book begins with a general survey of the main economic indicators, production statistics, national income, and economic data on key cities. Subsequent sections are on population and labor force; agriculture; industry; transportation, posts, and telecommunications; capital construction; domestic trade; foreign trade and tourism; public finance; prices; people's livelihood; education, science, and culture; and sports and public health. Appendices include economic indicators for Taiwan; international comparative statistics, explanatory notes, and tables of weights and measures. There is no index, but the table of contents lists all tables.

Almanac of China's Economy 1981 with Economic Statistics for 1949–1980, English edition. Compiled by the Economic Research Centre, The State Council of the People's Republic of China, and the State Statistical Bureau. Hong Kong: Modern Cultural Company, Ltd., 1982. Distributed in the US by Ballinger Publishing Co., 54 Church St., Cambridge MA 02138. 1144 pp. $155.

This first economic almanac published by the People's Republic of China is a major compendium of economic information. The volume focuses on the year 1980, but because this almanac is a first, it also contains a general introduction to China's economy since 1949. A "General Survey" section provides background material on history, geography, and political bodies. "Major Economic Documents, Works on Economic Policy, Laws and Decrees," contains material from December 1978 through 1980; and "Monographic Studies on Current Economic Policy" presents papers by prominent PRC economists on problems of the economy. The most extensive section of the work, "Survey of China's Economy," contains articles on each province and the main sectors of the economy. A brief section concerns "Chinese Economic Theory," while another on "Economic Statistics" provides 30 pages of statistical tables for selected years through 1979, updated by the State Statistical Bureau Communique for 1980, and China's 1980 monetary statistics. A "Chronology of Major Economic Events in China" covers the period of December 1978 through 1980. The appendix contains a directory of foreign trading corporations; lists of economics research institutes, colleges, societies, and publications; and RMB exchange rates.

Directory of Chinese Libraries, edited by Wang Enguang, Wu Renyong, and Xie Wanruo. Beijing: China Academic Publishers, 1982. Distributed in the US by Gale Research Co., Penobscot Building, Detroit, MI 48226. 426 pp. $45.

Another first is this impressive Chinese–English bilingual directory of Chinese libraries. Over 600 libraries with holdings of both Chinese and foreign language materials are listed, with detailed entries providing the library name, address, cable, and telephone numbers; volumes of Chinese and foreign holdings; special collections; services offered; exchanges and publications available for exchange; number of seats; the librarian's name; and staff size. A second list provides name and address only for another 2,887 libraries. Both lists include public, special, and university libraries. There is an alphabetical index to the entries, but there is no access by subject or by location. This directory will be especially useful to publishers and libraries.

Current Economic Problems in China, by Xue Muqiao. Edited, translated and with an introduction by K.K. Fung. Boulder, CO: Westview Press, 1982. 159 pp. $17.

Current Economic Problems in China, by Xue Muqiao, one of China's leading economists, was first published by the People's Publishing Co., Beijing, in December, 1979. The original Chinese edition contained 17 papers, reports, and speeches written and delivered in 1979 and 1980. This collection contains 11 full texts or selected portions of those papers. The articles deal with proportional imbalances among and within industries and between capital accumulation and consumption; commune and brigade enterprises; labor employment and wages; price reform; problems in economic reforms; and proposals for future reform. K.K. Fung, who selected and translated the papers, provides a useful summary of the volume and editor's notes.

Books and business guides submitted for possible review in The China Business Review *should be sent to the National Council's book editor, Marianna Graham.*

A Shirtsleeves Guide to Chinese Corporate Etiquette

Scott D. Seligman

How a Western Barbarian Can Learn to do as the Chinese

The Chinese themselves are generally the first to point out how underdeveloped and backward their nation is when compared with the West. But while the Chinese may acknowledge inferiority in science and technology, as the world's longest continuous civilization they do not feel the need for instruction from anyone in the areas of manners and courtesy. Being broadminded, they hold relatively few expectations that their Western counterparts can measure up to acceptable standards of behavior in most social situations. They are genuinely appreciative in the few cases when one does, however.

The norms and rules for behavior to which the Chinese subscribe among themselves and to which they adhere fairly rigidly are substantially different from our own. The "shoot-from-the-hip," or the "lay-all-your-cards-on-the-table" approach which is often the favorite of American and other Western business executives stands in marked contrast to their subtle, indirect, and quintessentially oriental way of getting business done.

Foreigners need not forget their own cultural values when doing business in China, or attempt to play completely by Chinese rules. But it is often useful to understand Chinese protocol if only to learn to read their signals more effectively. And attempts to follow their customs in social and business situations are welcomed by the Chinese as the most sincere of compliments.

Many Westerners are uncomfortable around Chinese officials precisely because they are uncertain as to the proper protocol for dealing with them. What follows are some guidelines which attempt to shed light on Chinese expectations in situations such as business meetings and banquets, and customs such as gift-giving and dress.

ARRIVALS AND DEPARTURES

The Obligatory Welcoming Party

When foreign business representatives or delegations arrive in China as guests of Chinese corporations or government ministries, a welcoming party is generally sent to the airport. Depending upon the rank of the principal guest, the Chinese side can be counted on to send an official of approximately equivalent stature—to do less would be to risk delivering an insult. The welcoming party also generally includes an interpreter and whichever individual is to serve as the group's escort while in that city.

Chinese airports are equipped with special lounges which are rented by host organizations and used to receive arriving guests. Ceremonies are mercifully kept to a minimum, especially when the guests are arriving from distant locations and have been in flight for many hours. They are greeted, pleasantries are exchanged and luggage collected, and then they are shipped off to their hotels or guest houses.

Similarly, the Chinese attach great importance to seeing off their guests when it is time for them to leave. One measure of how highly the Chinese host organization regards the visiting guest is the status of the official who is selected to see him or her off.

Chinese groups visiting foreign countries have learned not to expect similar treatment, as the demands on the time of executives in the industrialized world seldom allow for lengthy trips to and from airports for strictly ceremonial purposes. But this is a gesture which is very much appreciated by the Chinese when it is made.

BUSINESS MEETINGS

No surprises, please

Whether one visits a factory, a nursery school, a commune, or the Beijing headquarters of a nationwide corporation, one finds a striking similarity in the way the Chinese conduct their meetings. When they enter rooms, for example, it is generally in protocol order, with the highest-ranking cadre marching in first. The only exception to this rule is the interpreter, who is positioned next to the delegation leader—not necessarily in appropriate rank order—in order to provide the leader with a

voice. Conversely, Chinese generally assume that the first member of a foreign entourage who enters a room is also the head of the group. One can avoid the embarrassment of having a staff assistant taken for a CEO by taking note of this and filing in accordingly.

Chinese hosts will show their guests to their seats, whether they are around conference tables or overstuffed chairs lining the walls of a room. Generally the head of the guest group is seated to the right of the main Chinese host, though in formal negotiations they may sit across the table from one another. Others fill in seats as directed, with more senior members of the group sitting nearer to the heads. Interpreters position themselves in convenient locations.

The more advance information you can give your Chinese hosts about what you hope to accomplish and discuss at a particular meeting, the likelier you are to be pleased with the results. The Chinese don't like surprises in their dealings with Westerners; they prefer to know exactly what will be raised and have their responses fully planned ahead of time. Important meetings with foreign exchange at stake are no time for spontaneity. Early information also allows them to line up the most appropriate participants on their side, so that you are more likely to talk to the proper counterpart officials.

Meetings generally begin with some small talk—Chinese seldom launch directly into substance, feeling this a bit impolite, and so they are a bit jarred when their American friends come in swinging. Safe subjects include the weather, how long one has been in China, how many previous visits one has made, and one's itinerary. The Chinese seem to have a never-ending and inexplicable fascination with hearing which other Chinese cities their guests have visited. It does tend to break the ice.

Meetings with Chinese officials are not free-for-all exchanges. They are generally public dialogues involving the principal host and guest, to which others in the room contribute only by invitation. Chinese cadres seldom meet foreigners alone; there is usually at least one staff member in the room, and often there are many. Don't be surprised or uncomfortable if the other individuals are never introduced. They may simply be there to take notes or to observe, and telling you who they are may not strike the host as particularly relevant or important.

If the meeting is held at your request, the host will make a short welcoming speech and then turn the floor over to you to state your business. The Chinese normally prefer others to make presentations to which they may then react. If you have a lot of unrelated points to make, stop after each and give the host a chance to respond; if not, summarize your business in your opening remarks and let the conversation flow from there. It isn't considered polite to interrupt, though you may interject a comment if it seems relevant as long as you remember who holds the floor.

A word about talking through interpreters is in order. Mandarin being the esoteric language that it is, the Chinese do not expect their foreign friends to come prepared with their own interpreters, unless the negotiations are extremely formal. In such circumstances the foreigner speaks through his or her interpreter, and the host through the Chinese interpreter. Normally, however, the Chinese will provide a translator who may be used for two-way exchange.

As a foreigner you should remember to pause frequently during your remarks, breaking them up into bite-size chunks so that the interpreter can digest them and translate them. Speak slowly, and don't pepper your remarks with too many idioms or slang expressions, unless you are prepared to explain them. Even if you don't speak any Chinese, try to get a feel for whether you are dealing with a novice or a crackerjack. The quality of interpreters varies tremendously, and speed and content of one's speech should be tailored to their competence.

If your Chinese host seems to sidestep direct questions, it is probably for a good reason. He or she may, on the one hand, not know the answer you are seeking. Or the answer may be no—it may be an effort to help you "save face." Negative replies are considered impolite in many oriental cultures, and you could well get a "maybe" when the answer is really no. If you are in doubt, you can always ask your escort or interpreter informally later. If you get an indication that the host needs to check on something before giving an answer, ask him to designate a contact person with whom you may follow up later.

Either side can end a meeting. The ranking guest may observe how much of the host's time he or she has already taken up, or the host may point out that the lunch hour is near, or that the guests may be tired, in a hurry, or busy. In either case, all rise, shake hands, and the guests are escorted by a representative of the Chinese side to their car or at least to the door.

"Is it possible to ask if their 'maybe' really means 'maybe'? Or does it mean 'no,' or 'probably yes,' or 'probably no,' or 'possibly,' or 'definitely not' . . . ?"

BANQUETS

Hold the Sea Slug

Business representatives are forever being banqueted by the Chinese, and are occasionally in the position of hosting return affairs. The Chinese, for their part, are quick to

offer to host their guests over lunch or dinner, not only because it is a polite gesture, but in no small part because it generally means a sumptuous meal at the state's expense.

The Chinese hosts are expected to arrive before the guests, and they usually greet the foreigners in a separate room or in a corner of the banquet room where there are comfortable chairs. As with formal meetings, guests are directed to seats, with the principal guest seated to the right of the main Chinese host; the others fill in afterwards. Tea is served, and small talk is attempted. After a short period which may last between 5 and 15 minutes, the host suggests adjourning to the table, and the guests are ushered to seats.

Banquet seating is fairly rigid. Most of the time, especially when groups are large, place cards will announce who is to sit where. The guest of honor sits to the right of the principal host, usually at a round table, and generally facing the door to the room. The second-highest ranking foreign guest will sit to the right of the number-two Chinese host as well. This may be directly opposite the principal host and guest, or it may be in corresponding positions at another table. If more than one Chinese organization is represented at the banquet, the highest-ranking individuals from each unit will also be afforded places of honor, either to the immediate left of the principal host or else somewhere else at the head table. Interpreters are the only people who are permitted to break rank—they are seated where needed, without regard to status.

A cold platter will usually be in place in the center of the table before guests are seated, or else it will be served immediately thereafter. It is the responsibility of the principal Chinese host to serve the guest of honor from the platter first. He normally does not use his own pair of chopsticks, but employs a second set which is laid out above his place setting for this purpose. Lacking these, he may reverse his own chopsticks and serve with the larger end—a sign of respect and politeness. After he is finished putting food on the plates of all guests within his reach, other Chinese at the table will make it their business to serve foreigners around them in a like manner. The same procedure is followed when each new dish arrives at the table. After a dish has been served, it is perfectly polite to help yourself if you would like some more, and no one makes a move to assist you.

"Is there a polite way of telling Mr. Wang that I detest sea slugs?"

When you do help yourself, remember one fine point of Chinese etiquette: It isn't considered polite to pick through a dish in search of a favorite morsel. The best approach is to study the plate with your eyes until you see the piece you want, then reach for it in one, deft movement.

Banquets can include as many as 10–15 courses, so it is imperative that you pace yourself and not eat too much of any one dish. The cardinal rule of Chinese banqueting is that if you are finished eating a particular course, be sure to leave some food in your plate or your host will continue to serve you and continue to expect you to eat.

After the cold appetizers are consumed, the dishes that follow will probably include those representative of the five basic Chinese "tastes," namely sweet, spicy, sour, bitter, and salty. You'll know the meal is coming to a close when you see a fish dish, a soup, and finally a dessert of some sort—often fresh fruit.

It is generally not considered polite to refuse a dish altogether, though you may certainly eat less of one dish than another. On the other hand, Chinese with experience banqueting Westerners will understand if you feel obliged to pass up a delicacy like sea slug, duck brains, jellyfish, or fish stomach. If you can hazard a bite or two, so much the better; alternatively, you can achieve nearly comparable results by pushing the food around in your dish. The fact that such dishes continually reappear in banquets despite increasing awareness by the Chinese that they don't figure high on foreigners' wish lists is further indication that banquets are as much for the Chinese as they are for their guests. Chinese consider sea slug a rare and costly delicacy, despite its unmistakable similarity in Western eyes to a worn automobile tire.

Drinking figures heavily in the art of Chinese-style banqueting. At formal banquets guests will automatically be served small glasses of Chinese wine (tasting a bit too much like fermented rose petals), a choice of beer (very palatable) or *qishui* (soda pop—the only available flavor is orange), and of course the famous *maotai*. This is a 120-proof liquor made from sorghum which is allegedly also used to power Chinese airplanes and retrorockets.

Maotai is more often than not the beverage of choice for toasting. A few courses into the meal, the main host will offer a toast to the guests. It may be a short speech (not exceeding three or four minutes, and often much shorter), and may include some substance (refer to a contract or memorandum of understanding about to be signed), or else stay with the relatively safe topics of friendship, equality, and mutual benefit. All guests stand at the conclusion of the toast and raise their glasses, saying *ganbei*, the equivalent of "bottoms up" which translates literally as "dry glass." Finishing what liquor remains in the glass, the guests then demonstrate that it is indeed all consumed by turning the glass upside down.

Sometimes, if it is a large banquet, the host may travel to other tables and offer a toast to each of them. This is not required, though it is

appreciated, especially when it is the Chinese who are guests. In any event, a few courses after the host offers his toast, the guest of honor is expected to offer one in return. After these two obligatory gestures are complete, the floor is opened and anyone may join in and offer a toast, either to the assembled crowd generally or to a specific individual or subgroup. This tack is often used as a convenient excuse by the thirsty, since it isn't considered polite to drink alone; one simply obliges others to drink at the same time.

People who cannot drink alcohol, or who find *maotai* a bit too strong for their taste, should not feel compelled to imbibe it. The Chinese host probably will offer a good-natured protest if a guest refuses *maotai* or even wine, but if one makes it clear that one is uncomfortable, he or she can be counted on to desist. As much as the Chinese enjoy exchanging toasts and some good-natured drinking competition, they are genuinely interested in the comfort of their guests and will not knowingly set one ill at ease. If you must decline an alcoholic beverage, simply offer to toast with soda or some other drink.

Conversation at banquets need not be substantive. The Chinese are often content to stay on "safe" subjects such as food, language, climate, and geography. On the other hand, banquets sometimes provide foreigners with their only exposure to very high-ranking cadres, and they should not hesitate to use these opportunities to pose some questions to which they might otherwise never get answers. The only cautionary note to be sounded is that one should avoid putting the host on the spot; if the answer is embarassing and the host resists, do get off the subject quickly. A public embarrassment is considered a serious breach of etiquette.

"Friendship" refers to cooperation and good working relationships between the foreign firm and the Chinese unit; individuals should be able to come and go without affecting it significantly.

From start to finish a banquet generally lasts only about an hour and a half or at most two hours. The Chinese don't tend to stay long after they have finished eating, so don't expect lingering conversation over coffee and cigars. You can usually count on your Chinese host to make the first move to leave, observing that the guests have had a long day and must be tired, but feel free to take the bull by the horns and thank your host, rising to leave. Just be sure that the last course has been served before you do.

When hosting a Chinese group at a Chinese-style banquet in the United States, or when holding a return banquet for one's hosts in China, a business representative can be guided by the foregoing rules and simply reverse the roles. The Chinese may protest when their foreign friends continue in their attempts to serve them throughout the meal (especially if they fumble with their chopsticks), but they'll appreciate the gesture nonetheless.

GIFT-GIVING

Beware of Bourgeois Corruption

The official directive from the State Council, read by and known to all Chinese, states that individual gifts from foreigners are to be politely declined. The understandable fear is that innocent gift-giving will develop, if unchecked, into such bourgeois corruptions as bribery and graft. Such activities have indeed increased in certain areas of China in recent years. No distinction is made in the rules between a pocket calculator or cigarette lighter with a company logo and a color television set or cassette recorder.

In order to be on the safe side, foreigners desiring to show appreciation for a kindness or a favor, or merely to leave behind a token which will recall their visit, should plan on making one large presentation to the unit as a whole, rather than giving out a number of small gifts. Books are a good idea, especially if their content is related to the technical work of the unit. So are models of equipment and samples of merchandise.

For those intent on presenting small tokens to individuals who have been especially helpful or cooperative, however, there are some precautions which should be heeded. Make the presentation when you are alone with the person, and certainly out of the sight of his or her colleagues. Give something which can

"Of course we shall always think of your esteemed company when we use these lovely tie clasps."

be easily put into a pocket or bag, and don't insist too hard if the individual is clearly uncomfortable with the prospect of receiving the gift. (Don't confuse traditional Chinese politeness, which requires at least one obligatory, if unconvincing, protestation, with actual unwillingness.)

Useful individual gifts include calculators, lighters, watches, pens, Western cigarettes, cassettes (Western classical music and Hong Kong or Taiwan pop tapes are the most popular types of recordings). Stay away from cufflinks and tie tacks—the Chinese won't know quite what to do with them.

"I arrived yesterday this is my second visit to China the weather in New York is cold but not as cold as the weather in Beijing I like Chinese food very much. Now let me tell you about our newest processing equipment . . . "

INTERPERSONAL RELATIONSHIPS

"Friendship" means Organizations Only

For all of the heartfelt toasts to friendship you may hear, China does not actively encourage individual friendships between its citizens and foreigners; exactly the opposite is in fact the case. Chinese may spend days on end with foreign guests when escorting them on delegations or otherwise acting in the line of duty, but they are not permitted to maintain these relationships on an individual basis after the group leaves China. The "friendship" refers to cooperation and good working relationships between the foreign firm and the Chinese unit; individuals should be able to come and go without affecting it significantly.

The Chinese system is set up so that it is extremely difficult to develop friendships between locals and foreigners. Chinese visiting foreigners in their hotels must sign in at the front desk, giving their names, work units, and telephone numbers. Each time they visit they risk a phone call by the hotel authorities to their work units inquiring as to the nature of the visit—making sure that it is the unit's business and not the individual's. Chinese seldom invite foreigners to their homes, but if they do a neighbor may report them to their unit or to the neighborhood Communist Party headquarters, and they will be called upon to explain their behavior.

The upshot is that unknowing Westerners may not in fact be doing Chinese any favors by seeking to establish personal friendships. The Chinese may be torn between the temptation to get to know an interesting foreigner and learn about the outside world and the knowledge that to pursue such a relationship is strictly taboo. One can scarcely do more than follow the lead of the Chinese in such situations, and in any event, be as cautious and inconspicuous as possible. Westerners shouldn't be surprised when their Chinese counterparts do not take them up on entirely innocent overtures to become better acquainted.

DRESS

Avoid the Revealing

It is probably not an overgeneralization to say that as a rule, the Chinese couldn't care less what their foreign guests wear. They don't fully appreciate the difference between a safari suit and a business suit, a skirt and sweater and a formal gown. Chinese may own a change of clothes or two, but their wardrobes are not generally separated by level of formality. If you ask your Chinese host what is appropriate dress for a particular function, don't be surprised if you are simply told to wear what makes you most comfortable.

This being said, there are clearly certain kinds of clothing which are not acceptable, and certain occasions which require more formality. Generally speaking, stay away from clothing that is very revealing—halter tops or see-through blouses for women, and shorts for men. The former will be found offensive by the Chinese; the latter aren't exactly taboo, but you may get stared at a bit, especially on the streets. Banquets in the Great Hall of the People or one of the foreign embassies require a suit. Leave your tuxedo at home.

As for Chinese garb, the popular myth that the number of pockets in a cadre's Mao jacket reflects his rank just isn't borne out in fact. You can sometimes tell a high-ranking official by the quality of the material used in his jacket (just as you would a Western business suit). But despite some Western fashions which seem to be creeping back into China, Chinese dress is still fairly homogeneous, and one should avoid drawing too many conclusions from what one sees.

It's important to emphasize that no Chinese seriously expects a foreigner to behave appropriately in all of these situations. Allowances will be made for you whether you want them or not, and you will never be held to very stringent standards. But a small gesture which indicates an awareness of Chinese expectations will go a long way toward complimenting your host. Even in China, it is viewed as the most sincere form of flattery. ❧

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The author wishes to express his gratitude to Eugene Theroux, partner, Baker and McKenzie, and chairman of the Council's legal committee, for the cartoons accompanying the article.

The bad news for shippers is that congestion problems are likely to plague China's seven major international ports throughout the 1980s.

The Big Seven

John M. Pisani

Perhaps the chief impediment to China's foreign trade is the lack of deepwater berths. To learn more about what is being done to remedy the situation, I visited China's seven major ports last August in the company of Robert B. Skeele, senior vice-president of Phoenix Holdings, a Houston-based shipowning company involved in US grain exports to China.

The purpose of our visit was to view firsthand the physical and operating conditions at China's major ports. Our host, the Ministry of Communications, kindly arranged long days of discussions with Chinese officials and technicians in Beijing and at the ports of Zhanjiang, Huangpu (Guangzhou), Shanghai, Qingdao, Tianjin (Xingang), Qinhuangdao, and Dalian.

In addition to investigating the handling of bulk grain cargoes, I was given the opportunity to compile detailed marine terminal information on petroleum, coal, and container operations.

This trip confirmed the impression gained during my initial visit in March 1981: Port congestion is severely impairing China's foreign trade performance. With 90 percent of its international trade moving through seaports, China must do something to modernize its ports and cargo-transfer facilities.

Port Characteristics

China has 20 ocean ports open to foreign shipping. The vast bulk of China's foreign trade, however, passes through only seven of these (*see* Tables 1 and 2).

It is evident from Table 1 that lack of deepwater berths is due to the shallowness of China's harbors. Shanghai, Huangpu, Tianjin, and Zhanjiang are estuarial ports requiring extensive maintenance dredging. Tianjin's principal harbor, Xingang (literally "new harbor"), is just now widening its narrow ship channel to allow two-way traffic.

Dalian, Qingdao, and Qinhuangdao, however, are primarily bulk cargo ports. They have more ideal coastal locations, are closer to deep water, and experience few siltation and dredging problems. These ports have some potential to develop deepwater berthing facilities for larger, more economical bulk carriers. From Table 2, it can be determined that the average vessel calling at Dalian, Qinhuangdao, and Qingdao is larger than at other ports, particularly regarding oceangoing ships.

Access to all seven ports, however, is depth-restricted. It is more severe in the four estuarial ports than the three coastal harbors. Channel depths range from 9 to 13 meters at high tide, and only a few berths have alongside depths of 12 meters. Specialized offshore transfer facilities for grain and ore at Shanghai's Luhuashan Anchorage (*see* map) and for crude oil at Dalian's Nianyu Bay have water depths of 16 and 20 meters, respectively. Table 1 also shows that these seven ports have 134 berths capable of handling vessels larger than 10,000 dwt (deadweight tons). In comparison, the remaining 13 Chinese ports open to foreign shipping have only 23 berths suitable for vessels of 10,000 dwt and larger.

Storage and rail lines are limited in some ports. Qingdao, for example, has less than 50 square meters of storage for every meter of berthing, and only 5.9 kilometers of rail. Even Shanghai, the largest port in China, has only 11.8 kilometers of rail. In contrast, Dalian has 127.7 kilometers of rail, and Qinhuangdao has over 300 square meters of storage per meter of berthing.

The seven ports in Table 2 handled two-thirds (approximately 200 million tons) of the total commerce moved through all of China's ocean ports in 1981. Similarly, these seven ports imported and exported some 70 million tons, or approximately 80 percent, of China's foreign trade in 1981.

Shanghai is China's leading port in both ship and cargo traffic, though most of it is coastal. Dalian, however, leads Shanghai in foreign trade, moving over 20 million tons in 1981. Together Shanghai, Dalian, and Qinhuangdao handled approximately 143 million tons of cargo, or close to 50 percent of China's total foreign and domestic waterborne commerce, in 1981. Dalian is China's number-one gateway for petroleum exports and grain imports. Qinhuangdao leads in coal exports, and Shanghai handles the most foreign trade containers.

Table 3 provides for the first time an entire year's breakdown of China's domestic and foreign trade. It clearly shows the predominance of bulk cargo in China's waterborne shipping. For example, in 1981 dry bulk movements reached approximately 100 million tons or over 50 percent of the total commerce handled at the seven leading ports. This ratio rises to 80 percent when dry and liquid bulk traffic are combined. Similarly, foreign trade bulk cargo comprised 63 percent of the total 70 million tons moved.

Sixty percent of general cargo movements at China's major ports is foreign trade cargo. Shanghai, Tianjin, Dalian, and Huangpu are the principal general cargo loading centers. It is interesting to note that only 690,000 tons of the 42 million tons of general cargo movements at these

seven ports were containerized in standard intermodal boxes in 1981.

All seven ports shared fairly evenly in handling over 25 million tons of grain, coal, and ores in foreign trade, which amounted to approximately 25 percent of their total dry bulk cargo in 1981. Shanghai led all other ports in handling domestic transshipments of coal and grain. Waterborne coal shipments move from north to south in China, originating at Qinhuangdao, Qingdao, and Lianyungang (in Jiangsu Province) and terminating in Shanghai, Huangpu, and Zhanjiang. Table 3 shows the same pattern of movement for coastal shipments of liquid bulk petroleum from Dalian, Qinhuangdao, and Qingdao to Shanghai, Huangpu, and Zhanjiang. China's major oil ports handled some 37 million tons in domestic trade, or twice the volume exported in 1981.

Photos by Pisani

Hitachi container gantry crane.

Standard intermodal container leaving Shanghai's District No. 10.

Grain: Not Much Improvement

China's imports of grain could approach 16 million tons in 1982, compared with 15 million tons in 1981. Purchases for 1983 are expected to show a further increase. Grain imports in 1981 were less than 5 percent of China's 325 million tons production. The US is supplying 8.2 million tons or some 55 percent of China's grain imports, reflecting the terms of our four-year grain agreement covering the years 1981–84. Australia and Canada's market share is 40 percent, with Argentina, France, and Thailand taking the remaining five percent.

Wheat will continue to be the leading grain import, reflecting China's current policy of giving priority to meeting human consumption requirements over expanding livestock production. The Chinese have realized that it is more profitable to import lower-priced wheat, and take land out of wheat production in order to grow and export more lucrative cash crops, such as soybeans, tobacco, rice, and peanuts.

Strained port capacity is likely to be the major factor constraining the annual volume of China's grain imports. Berth occupancy exceeds 90 percent in all of China's major grain ports. China needs more modern and efficient specialized grain terminals, since bulk grain is most often unloaded on conventional general cargo wharves.

Photo by China Features

"K" Line containers unloaded in Shanghai by ship-mounted cranes.

China's port-modernization program, however, gives higher priority to improvements of deep-draft facilities for coal, petroleum, iron ore, and container cargoes than to grain. While it will have the capability to export coal on 100,000 dwt vessels at Shijiusuo, facilities under construction or planned for grain imports will limit vessel size capacity to only 50,000 dwt. Crude oil and iron ore terminals, however, exist at Dalian and Beilun (Ningbo), respectively, to accommodate 100,000-dwt tankers and bulk carriers.

China's major grain terminals unloaded 12.8 million tons in 1981, as indicated in Table 4. The remaining 2.2 million tons were discharged at the ports of Lianyungang, Yantai, and Xiamen. Existing grain berths are old, shallow, and congested. They operate inefficiently because of the lack of berths, storage, rail cars, and modern equipment. For example, the limited capacity of mobile hoppers and conveyors precludes the use of larger clamshells (15–25 ton grabs) on unloading cranes. Pneumatic unloaders at Shanghai, designed to discharge 15,000-dwt vessels in the 1950s, are not telescopic, and require additional lengths of pipe for larger ships. This reduces suction efficiency considerably. Huangpu's pneumatic unloaders are only used to clean discharged grain ships, since its two grab unloaders alone exceed the capacity of the terminal's fixed conveyor system. The length of fumigation pipes is too short to handle vessels larger than 35,000 dwt tons. Qingdao's two provisional open-top storage bins do not have the structural strength to support full utilization.

The need to weigh all grain imports accurately at the port of entry also contributes to inefficiency and port delays. The National Commodities Inspection Bureau enforces strict grain-weighing regulations at

each port. At Shanghai, for example, all grain must pass through the terminal silo for weighing before it is loaded on barges. Similar delays occur at Qinhuangdao, where a rail track scale is located off-pier. Overloaded hopper cars are often seen returning to the grain terminal to discharge the excess.

Major improvements at China's grain ports cannot be expected soon. Only Zhanjiang and Qingdao are now constructing new silo terminals, although completion is not expected before 1985. Planned facilities at Tianjin, Qinhuangdao, and Dalian are awaiting the approval of the Ministry of Communications, the entity in charge of China's major ports. The Chinese plan to use 15–25-ton grabs, not pneumatic unloaders, at their new grain terminals because they believe suction equipment is too expensive, noisy, energy-wasting, and subject to breakdown. Any improvement in hopper car availability in the short term does not seem possible as long as coal and ore rail shipments receive higher priority.

Petroleum: Ports Generally Efficient

China now ranks eighth in the world in crude oil production. Annual output has grown at a much slower pace in recent years, and actually declined to 101 million tons in 1981. It is expected to continue at current levels or even decline further in the next few years. Similarly, crude oil exports (12 million tons in 1981) are expected to remain at 10–12 percent of domestic production.

The outlook for large-scale growth in China's oil production remains dim until the 1990s, when new discoveries offshore may come on stream. If all goes smoothly, China should be able to boost its exports in the long run, resulting in an increase in crude oil supplies to Japan far beyond its present less than 5 percent share of the Japanese market.

China's major oil exporting ports are shown in Table 5. These facilities are generally efficient. They handled exports of 17.4 million tons of crude oil and petroleum products in 1981, as well as some 35 million tons of domestic oil shipments. Dalian leads all ports in terms of total overseas and domestic movements with approximately 20 million tons. Shanghai is second with over 10 million tons.

The ports of Dalian and Qinhuangdao are the terminus of the 1,000-kilometer pipeline connected to the northeast Daqing oil field—China's largest, boasting an annual output of about 50 million tons. Dalian loads only crude oil at its Xingang district supertanker terminal in Nianyu Bay, 60 kilometers north of the city. This facility is very modern and is China's leading crude oil terminal. Existing tonnage throughput of 9 million in exports and 5 million in domestic shipments is nearing the port's design capacity of 15 million tons. Xie Zhongrong, the terminal's manager, recalled that the largest tanker loaded was 128,000 dwt on high tide, and that most of the crude is going to Japan, Romania, and Yugoslavia.

Qinhuangdao exports only a small amount of the crude it receives from the Daqing oil field. In 1981 it loaded some 7.6 million tons of crude into domestic tankers destined for China's southern ports. Qingdao is China's second leading crude oil export port, loading some 2.7 million tons and, like Dalian and Qinhuangdao, shipping some 4.4 million tons of crude to Zhanjiang, Huangpu, Shanghai, and to a number of Yangzi River ports. Petroleum product exports are shipped from Dalian, Shanghai, and Zhanjiang. While Dalian and Shanghai load larger volumes of oil products in small tankers, Zhanjiang's terminal can handle tankers up to 70,000 dwt. A refinery is planned for construction in Zhanjiang which is certain to push the volume of domestic crude transshipments and petroleum exports nearer the 7-million-ton capacity of its oil pier.

China probably will not build many more oil-transfer berths until a clearer picture emerges in the late 1980s of its domestic production and demand levels. At present, only the port of Qinhuangdao is adding capacity to load larger crude tankers for both domestic and overseas markets.

Coal: Doubling Existing Capacity

China is currently the world's third-largest coal producer, following the US at 805 million tons and the USSR at 704 million tons. Known reserves exceed 640 billion tons. China is now aiming to produce 1.2 billion tons of coal annually by the year 2000, double its estimated output of 635 million tons in 1982. To accomplish this goal, the average annual increase in coal production must exceed 30 million tons—a very optimistic forecast.

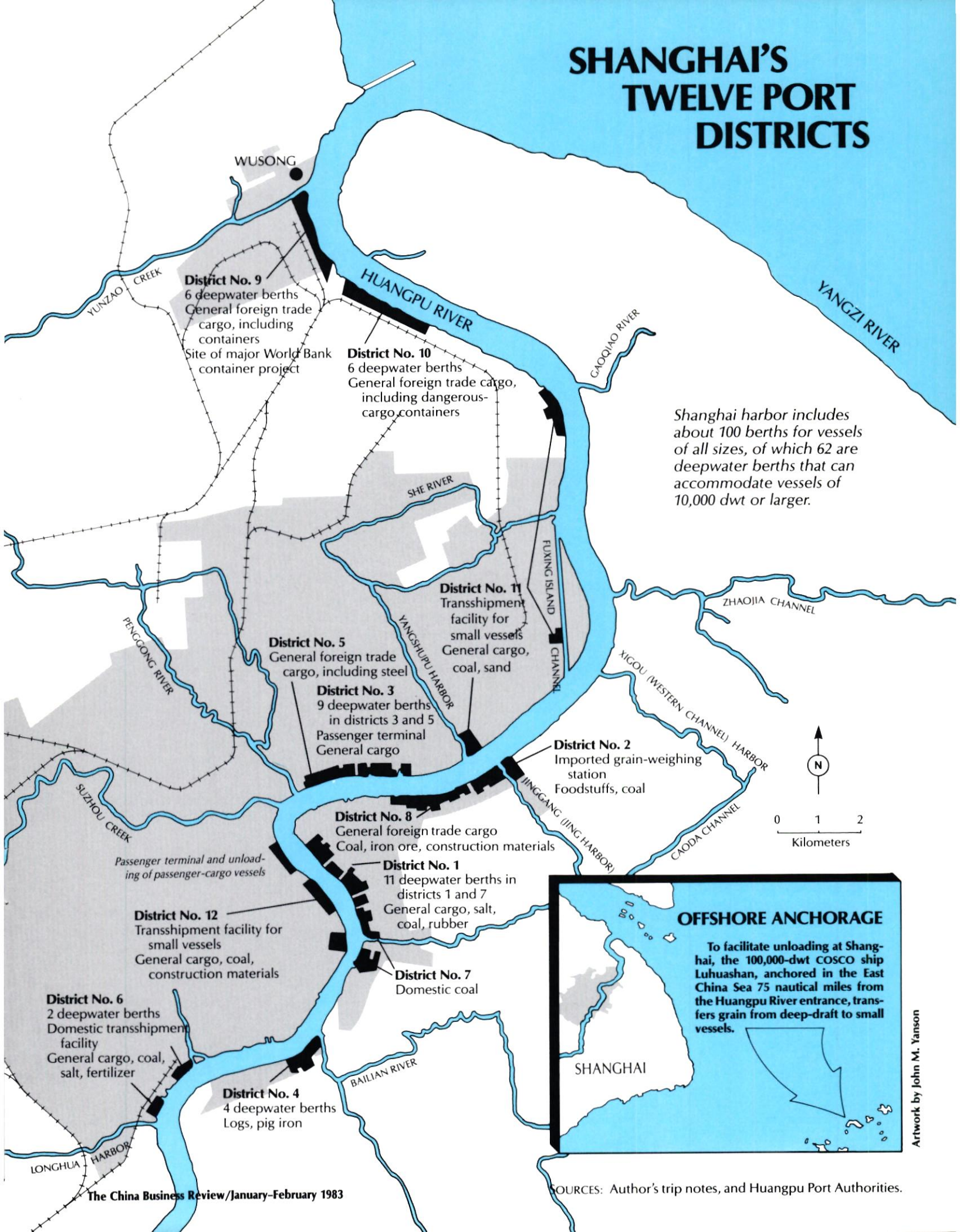
The Chinese claim to have launched over 100 projects during the 1982–83 period, with an estimated annual production capacity exceeding 100 million tons. When completed they will expand greatly the exportable surplus of Chinese coal. In view of the growing world

Table 1: GENERAL CHARACTERISTICS OF SEVEN MAJOR PRC PORTS

Port	Ship channel Length (Naut. mi.)	Ship channel Depth[1] (m)	Diurnal tidal rise neap/spring (m)	Total berthing length (m)	Total number[2] berths	Total berths[2] exceeding 10,000 dwt capacity	1981 total throughput[3]/ (1,000 metric tons)	Storage area total (1,000 m²)	Storage area covered (1,000 m²)	Storage area open (1,000 m²)	Total rail length in port (km)
Zhanjiang	35	10.0	2.9 3.7	2,007	14	8	10,840	329	84	245	47.0
Huangpu (Guangzhou)	63	7.7	2.2 2.7	2,470	14	12	13,170	503	103	400	35.1
Shanghai	83	7.0	2.5 4.0	12,762	95	62	83,350	1,360	410	950	11.8
Qingdao	4	9.5	2.5 3.5	4,595	25	9	18,100	219	40	179	5.9
Tianjin (Xingang)	18	7.5	2.5 3.0	4,423	28	13	11,750	379	90	289	20.6
Qinhuangdao	3	9.0	2.5 3.0	2,070	11	9	26,550	740	54	686	63.2
Dalian	2	10.0	2.3 2.9	9,346	48	22	33,080	1,130	270	860	127.7

[1] Depth in main channel is at mean low water.
[2] Only includes shoreside berths, not mooring buoy berths.
[3] Includes both domestic and foreign waterborne commerce.

SOURCE: Author's on-site port interviews


SHANGHAI'S TWELVE PORT DISTRICTS
WUSONG
YUNZAO CREEK
HUANGPU RIVER
YANGZI RIVER
GAOQIAO RIVER
District No. 9
6 deepwater berths
General foreign trade cargo, including containers
Site of major World Bank container project
District No. 10
6 deepwater berths
General foreign trade cargo, including dangerous-cargo containers
Shanghai harbor includes about 100 berths for vessels of all sizes, of which 62 are deepwater berths that can accommodate vessels of 10,000 dwt or larger.
SHE RIVER
FUXING ISLAND
CHANNEL
ZHAOJIA CHANNEL
District No. 11
Transshipment facility for small vessels
General cargo, coal, sand
PENGGONG RIVER
YANGSHUPU HARBOR
District No. 5
General foreign trade cargo, including steel
District No. 3
9 deepwater berths in districts 3 and 5
Passenger terminal
General cargo
XIGOU (WESTERN CHANNEL) HARBOR
District No. 2
Imported grain-weighing station
Foodstuffs, coal
N
0 1 2
Kilometers
SUZHOU CREEK
JINGGANG (JING HARBOR)
CAODA CHANNEL
District No. 8
General foreign trade cargo
Coal, iron ore, construction materials
Passenger terminal and unloading of passenger-cargo vessels
District No. 1
11 deepwater berths in districts 1 and 7
General cargo, salt, coal, rubber
District No. 12
Transshipment facility for small vessels
General cargo, coal, construction materials
District No. 7
Domestic coal
District No. 6
2 deepwater berths
Domestic transshipment facility
General cargo, coal, salt, fertilizer
BAILIAN RIVER
District No. 4
4 deepwater berths
Logs, pig iron
LONGHUA HARBOR
OFFSHORE ANCHORAGE
To facilitate unloading at Shanghai, the 100,000-dwt COSCO ship Luhuashan, anchored in the East China Sea 75 nautical miles from the Huangpu River entrance, transfers grain from deep-draft to small vessels.
SHANGHAI
Artwork by John M. Yanson
SOURCES: Author's trip notes, and Huangpu Port Authorities.

demand, coal could replace crude oil as a major source of export revenues for China. A major problem, however, will be transportation.

Great emphasis is being placed on port modernization and connecting rail lines to coal ports. As shown in Table 6, China's coal exports of 6.6 million tons in 1981 were shipped out of the ports of Qinhuangdao, Lianyungang, and Dalian. Exports in 1982 were expected to rise to 7 million tons, about 1.1 percent of domestic production. If output exceeds 700 million tons in 1985 as planned, some 15–20 million tons of coal—two to three times the current export level—could be exported. The level of future coal exports will depend greatly on the country's domestic energy needs. Coal already accounts for 70 percent of China's energy resources. This, in turn, will determine the extent to which increases in rail and port capacity will be needed for domestic transshipments.

Coal port improvements currently underway in China will more than double existing handling capacity. Dalian, Lianyungang, and Qinhuangdao currently can accommodate colliers of 20,000–25,000 dwt. Qinhuangdao is expanding its annual throughput capacity of 15 million tons in two stages to handle vessels of 50,000 dwt, and is aiming to add 30 million tons per year by 1985—half of which will be dedicated to exports—to raise its annual capacity to some 45 million tons. The estimated cost of the Qinhuangdao port-redevelopment scheme is $160 million. It is being complemented by a $650 million plan to modernize the rail link between the port and Beijing.

China is also building, in two stages, its first deepwater coal harbor at Shijiusuo in Shandong Province. The first phase is scheduled for completion in 1985. It involves a 100,000-ton class berth for handling 10 million tons of coal, and a smaller second berth for 5 million tons of iron ore. An additional 100,000-ton berth will be added in the second phase. With these new coal-exporting facilities, Shijiusuo is destined to become China's second-largest coal port after Qinhuangdao. Work is also proceeding on the Yanzhou–Shijiusuo railway in Shandong to link the supplying coal field with the new harbor.

Since Japan is expected to purchase increasing amounts of coal from China, it is cost-sharing the port improvements at Qinhuangdao and Shijiusuo and their connecting rail lines through the auspices of the Overseas Economic Cooperation Fund (OECF). While 1985 has been targeted for completion of these major port and rail improvements, problems have caused delays. It now appears that 1986 is a more likely date.

No other port in North China is being improved for coal exports. Dalian's export terminal is expected to continue handling coke and not steam coal. Expansion of Lianyungang's coal facilities remains uncertain. Qingdao and Yantai, both in Shandong Province, are adding new coal capacity but only for domestic

Table 2: VESSEL AND TRADE TRAFFIC IN 1981

(Vessel tonnage in 1,000 dwt and cargo tonnage in 1,000 metric tons)

	Dalian	Qinhuang-dao	Tianjin	Qing-dao	Shang-hai	Huangpu	Zhan-jiang
Oceangoing ships							
Number	1,404	671	1,323	699	2,009	646	686
Vessel Tonnage	25,080	8,180	14,540	10,930	27,760	7,690	5,020
Coastal ships							
Number	1,784	1,090	1,052	1,311	15,897	409	730
Vessel Tonnage	10,470	16,820	1,870	8,670	36,520	5,350	7,330
Total number ships	3,188	1,761	2,375	2,070	17,906	1,055	1,416
Total vessel tonnage	35,550	27,000	16,410	19,600	64,280	13,040	11,350
Foreign Trade Tonnage							
Total	20,430	7,120	9,460	7,260	16,590	5,030	3,950
Import	5,110	2,580	5,700	3,170	12,060	3,690	1,710
Export	15,320	4,540	3,760	4,090	4,530	1,340	2,240
Domestic trade tonnage							
Total	12,650	19,430	2,290	10,840	66,760	8,140	6,890
Inbound	1,540	20	1,450	2,020	45,390	5,140	5,560
Outbound	11,110	19,410	840	8,820	21,370	3,000	1,330
Total cargo tonnage	33,080	26,550	11,750	18,100	83,350	13,170	10,840

Source: Author's on-site port interviews

Table 3: COMPOSITION OF TRADE IN 1981

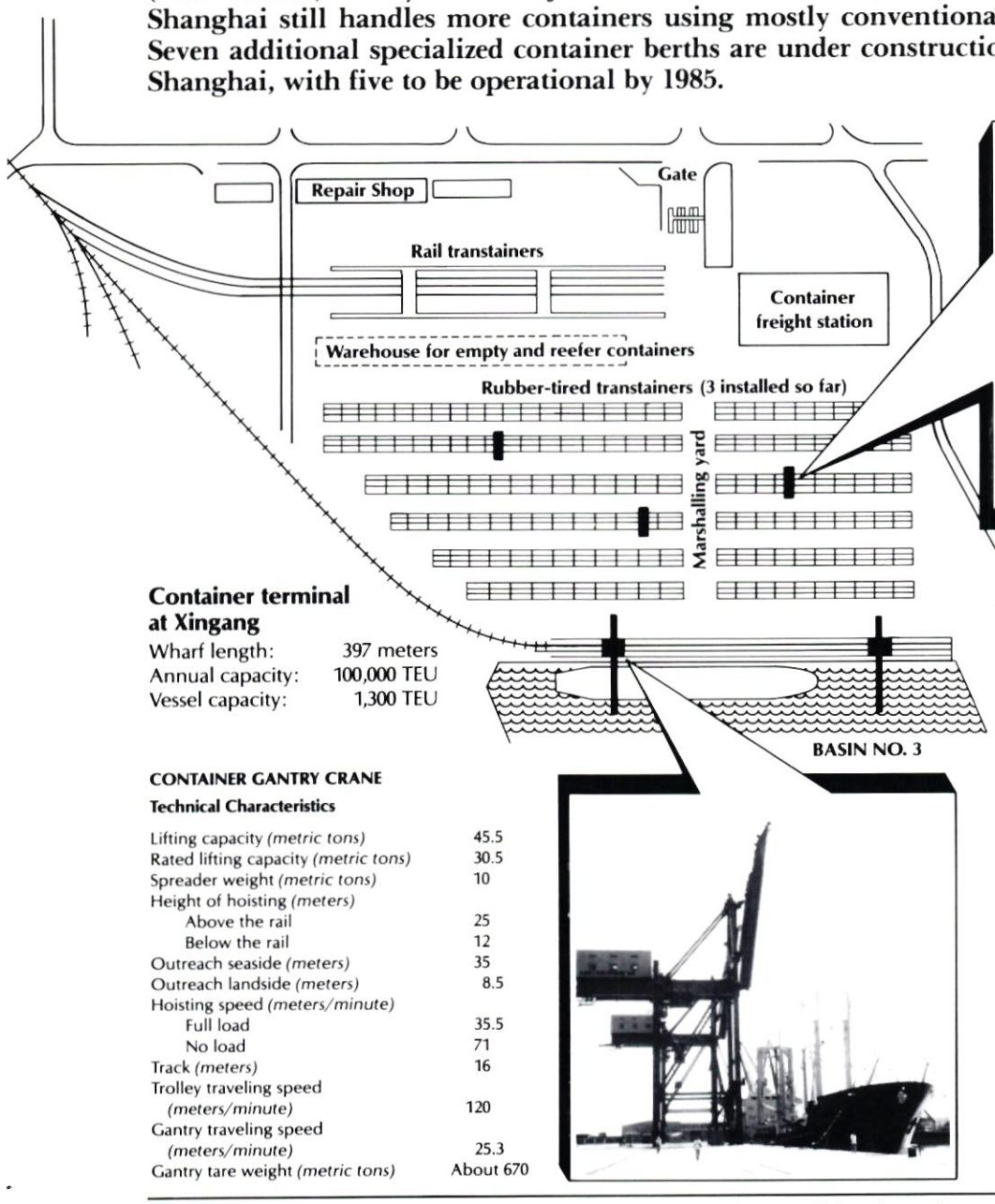
(1,000 metric tons)

	Dalian	Qinhuang-dao	Tianjin	Qing-dao	Shang-hai	Huangpu	Zhan-jiang
General Cargo							
Foreign	3,180	980	5,530	2,170	9,600	3,030	1,300
Imports	1,500	680	3,080	1,220	6,770	2,570	870
Exports	1,680	300	2,450	950	2,830	460	430
Domestic	3,740	10	290	560	10,020	1,810	400
Inbound	410	—	100	340	5,550	520	50
Outbound	3,330	10	190	220	4,470	1,290	350
Total	6,920	990	5,820	2,730	19,620	4,840	1,700
Dry Bulk Cargo							
Foreign	4,560	5,740	3,630	2,310	5,970	1,830	1,930
Imports	3,610	1,900	2,620	1,950	5,290	1,120	840
Exports	950	3,840	1,010	360	680	710	1,090
Domestic	1,730	11,780	1,680	5,660	46,640	3,740	1,900
Inbound	970	—	1,040	1,490	30,500	2,188	1,320
Outbound	760	11,780	640	4,170	16,140	1,552	580
Total	6,290	17,520	5,310	7,970	52,610	5,570	3,830
Liquid Bulk Cargo							
Foreign	12,690	400	300	2,780	1,020	170	720
Imports	—	—	—	—	—	—	—
Exports	12,690	400	300	2,780	1,020	170	720
Domestic	7,180	7,640	320	4,620	10,100	2,590	4,590
Inbound	160	20	310	190	9,340	2,440	4,190
Outbound	7,020	7,620	10	4,430	760	150	400
Total	19,870	8,040	620	7,400	11,120	2,760	5,310
Total Cargo Tonnage	33,080	26,550	11,750	18,100	83,350	13,170	10,840

Source: Author's on-site port interviews

TIANJIN'S CONTAINER TERMINAL

Completed in December 1981, the Xingang (New Harbor) facility near Tianjin is China's first modern, fully mechanized container wharf. But Shanghai still handles more containers using mostly conventional cargo-handling equipment. Seven additional specialized container berths are under construction at Huangpu, Tianjin, and Shanghai, with five to be operational by 1985.



RUBBER-TIRED TRANSTAINERS

Container terminal at Xingang

Wharf length:	397 meters
Annual capacity:	100,000 TEU
Vessel capacity:	1,300 TEU

CONTAINER GANTRY CRANE

Technical Characteristics

Lifting capacity *(metric tons)*	45.5
Rated lifting capacity *(metric tons)*	30.5
Spreader weight *(metric tons)*	10
Height of hoisting *(meters)*	
Above the rail	25
Below the rail	12
Outreach seaside *(meters)*	35
Outreach landside *(meters)*	8.5
Hoisting speed *(meters/minute)*	
Full load	35.5
No load	71
Track *(meters)*	16
Trolley traveling speed *(meters/minute)*	120
Gantry traveling speed *(meters/minute)*	25.3
Gantry tare weight *(metric tons)*	About 670

Technical Characteristics	Shanghai product	Comparable Hitachi product
Lifting capacity *(metric tons)*	40	40
Rated lifting capacity *(metric tons)*	30.6	30.5
Height of hoisting *(meters)*	12.22	12.22
Span *(meters)*	23.47	23.5
Wheel base *(meters)*	6.4	6.4
Hoisting speed *(meters/minute)*		
Full load	13.5	13.5
No load	27	27
Trolley traveling speed *(meters/minute)*	65	70
Full load	25	25
Gantry traveling speed *(meters/minute)*		
No load	130	130
Slewing angle of spreader *(degrees)*	±5	±5
Diesel engine *(hp)*	240	216

SOURCES: Author's trip notes, and Tianjin Port Authorities.

Artwork by John M. Yanson

shipments. These two ports, together with Lianyungang, are expected to be more heavily involved in the north–south transshipments of domestic coal, particularly to Shanghai and Yangzi River ports. In South China, only the port of Zhanjiang is constructing specialized facilities for coal exports, which are to be completed this year. This coal terminal will have a total capacity of 3 million tons, of which one-half probably will be exported on vessels up to 40,000 dwt.

Containers: Ample Capacity by 1990

Though progress is being made, containerized transport is still very much in its infancy. China is under strong pressure to develop container-handling facilities from its trading partners in the West and Japan, who are fully committed to international container freight transport. Long-term plans to develop China's container transport industry are underway. Five ports—Tianjin, Shanghai, Huangpu, Dalian, and Qingdao—already have become centers for containerized shipping.

As shown in Table 7, these ports handled 106,000 twenty-foot equivalent units (TEU) in 1981, and anticipate an increase to 290,000 in 1983. Table 7 also indicates the estimated available annual capacity each port will have during the 1985–90 period, when major container terminal construction projects are expected to be completed. By the end of this decade, it appears likely that China will have ample capacity in its five leading container ports to handle its foreign trade requirements.

Until recently, China had no specialized berthing facilities to handle containers. In December 1981, the completion of Tianjin's Xingang container terminal, with its two Chinese-built 30.5-ton ship-to-shore gantry cranes and three rubber-tired 30.5-ton transtainers (*see* map), confirmed China's strong commitment to the development of container fa-

Photo by China Features

Existing grain berths "lack storage, rail cars, and modern equipment."

cilities and services. China's first specialized container wharf at Xingang can accommodate a 1,300-TEU container ship and a 100,000-TEU annual throughput, as indicated in Table 8. The construction of a three-berth container wharf at Xingang is scheduled for completion in the late 1980s. When all three berths are operational, Tianjin's annual container handling capacity will rise to 400,000 boxes.

Shanghai currently has a two-berth wharf at Terminal 10 (*see* map) which handled 50,000 boxes in 1981. By the end of 1983, it will have an additional 30.5-ton Hitachi gantry crane and the capability to accommodate 100,000 containers. In addition, Shanghai is constructing two more modern berths at Terminal 9 for 1,500-TEU container ships. Four gantry cranes and six transtainers will give this facility a projected 1985 capacity of 200,000-TEU per year.

In the south, Huangpu is getting ready to operate the first of its two-berth container terminals equipped with two Chinese-built gantry cranes. By 1985 the facility will be fully operational and should be able to deal with a throughput of 200,000 containers. Ironically, a modern, six-lane toll highway, linking Huangpu with Hong Kong on the east side of the Pearl River estuary and with Macao on the west side, is expected to be constructed, also by 1985. This road will reduce travel time between Hong Kong and Huangpu from eight hours to one. It should take away some of the business that otherwise might go to the new Huangpu container terminal as shippers will find it cheaper and more convenient in some cases to offload containers in Hong Kong and truck them to destinations in China.

In total, seven container wharves are under construction at Xingang, Shanghai, and Huangpu with the assistance of a World Bank loan of $124 million. This will boost annual capacity at these three ports to 900,000 boxes by 1987. Specialized container terminals are also planned for Qingdao and Dalian in the late 1980s, with annual capacities of 100,000 TEU each. The latter port has almost unlimited railway access with tracks running directly to its wharves. Thus, Dalian could be the first Chinese port to have overland container-on-flat-car services (COFC) to and from the harbor in the next decade.

China is developing capacity not only to handle containers in port, but also to transport them by sea. It now has 93 container and semi-container

Table 4: MAJOR IMPORT-EXPORT GRAIN HANDLING FACILITIES

	Terminals				1981	Effective		Waiting	Storage Capacity		Transshipment		
Port	Berths	Total length (m)	Depth[1] (m)	Maximum vessel size (dwt)	Throughput[2] (mil. metric tons)	transfer rate[3] (metric tons/day)	Turnaround at berth (days)	time at anchorage (days)	Silos (metric tons)	Warehouses (metric tons)	Rail (%)	Water (%)	Truck (%)
Zhanjiang	1	200	12	30,000	.8	7,000 (Grabs)	4	7	—	20,000	100	—	
Huangpu (Guangzhou)	1	200	9.5	25,000	.8	8,000 (Grabs)	3	7	28,000	10,000	20	80	
Shanghai	1	250	9	30,000	1.1	5,000 (Suckers)	6	15-30	40,000	30,000	—	100	
	1	235	9	20,000	.8	4,000 (Ship's gear)	5	15-30	—	—	—	100	
Luhuashan Anchorage[4]	1	—	16	80,000	.6	4,000 (Grabs)	10	3	—	—	—	100	
Qingdao	1	230	11.9	30,000	1.0	4,500 (Grabs)	7	7	—	5,000	75	25	
	1	200	8.3	20,000	.5	3,000 (Grabs)	7	7	—	9,000	75	25	
Tianjin (Xingang)	2	494	10.7	25,000	2.5	8,000 (Grabs)	3	15-30	—	—	100	—	
Qinhuangdao	1	230	11	34,000	1.7	6,000 (Grabs)	7	15	—	—	100	—	
Dalian	3	700	12	35,000	3.0	4,500 (Grabs)	7	15-30	—	20,000	100	—	
	1	230	11	30,000	.2	10,000 (Conveyors)	2	0	32,000	—	100	—	

[1] Depth alongside berth at high tide. [2] All tonnages are imported grain except 200,000 tons of exported soybeans at Dalian silo berth. [3] Effective transfer rates based on 20-hour day operation except at Luhuashan Anchorage where no night operations are permitted.
[4] Anchorage is located outside Yangzi River entrance 75 nautical miles from Huangpu River entrance channel. A 100,000 ton COSCO vessel transfers grain from deep-draft bulk carriers to smaller vessels at a rate of 400 tons per hour. SOURCE: Author's on-site port interviews.

ships carrying 10,700 standard containers, and serving 12 ocean routes mainly to Australia, Europe, the US, and Japan. At present, most containers move to and from Chinese ports on feeder vessels via Hong Kong or Japan. By the end of the decade, as specialized container-handling facilities in Chinese ports finally come on line, direct container vessel service to and from Chinese ports should increase.

Similarly, China must dramatically improve its limited inland transport capability to truck and rail standard intermodal containers if it is to realize the full benefits of door-to-door containerized shipping. This will require considerable investment in roads, railways, power lines, bridges, and other transportation infrastructure in the interior, particularly in the south, and in the purchase of the necessary truck chassis and rail flatcars capable of carrying internationally standard 20-foot and 40-foot containers.

For at least the next ten years, most containers will continue to be stuffed and stripped at China's ports and transported to and from the terminal by small trucks. The recent introduction of inland container freight stations, however, will increase the number of containers going door-to-door in the future. China's Research Institute of Comprehensive Transport reported that in 1981, 21,000 standard intermodal containers passed down China's highways for door-to-door delivery.

Port Congestion

Severe congestion exists in all of China's ports. I observed over 200 vessels waiting for berths in the seven ports visited. Congestion was less serious for tankers loading crude oil and petroleum products.

At least five vessels carrying grain were lying at anchor in each port. Average waiting time at anchor ranged from 7 to 14 days, while the average turnaround time at berth varied from 3 to 7 days. In addition, a large percentage of the time a bulk carrier spent at berth was lost as a result of non-ship-related factors, such as the unavailability of rail cars, storage, equipment, and documentation. These losses of productive berth time are much larger than for most international ports in other countries. Coupled with the waiting time for berths, it means that the average bulk carrier spends only one-third of its total port turnaround time productively.

The majority of vessels waiting for berths, however, are Chinese-flag vessels. Foreign-flag bulk carriers have higher capital and wage costs and cannot wait as long as Chinese-flag vessels. Although China is concerned about delays, although China's port congestion is giving more business to Chinese state-owned vessels that operate in a less cost-conscious manner. This effectively discourages foreign-flag competition in the tramp trades. As PRC vessels grow in number and carry more of China's foreign trade, SINOTRANS is chartering less foreign-flag tonnage. In 1981 it chartered only 3 million tons—a sharp decline from previous years.

Port tariff rates also contribute to slow turnaround times. In China, storage charges do not increase with

Table 5: MAJOR PETROLEUM EXPORT HANDLING FACILITIES

Port	Jetty: Berths	Jetty: Length (m)	Jetty: Depth[1] (m)	Maximum tanker size (dwt)	1981 Exports (mil. metric tons)	Effective loading rate (metric tons/hr.)	Number and size of pipelines	Turnaround at berth (hours.)	Storage tanks: Number	Storage tanks: Capacity (m^3)	Remarks
Dalian (Nianyu Bay)	2	421	20.0 16.0	128,000 80,000	9.0 (Crude)	2000-3500	4 30 in.	36 22	13	350,000	30-inch pipeline connects tank storage and terminal with Daqing oil field.
Dalian (Siergou District)	4	230	11.0	24,000	3.6 (Product)	800-1000	8 14 in.	36	17	400,000	Railed to terminal from NE China in 2,100-ton loads.
Zhanjiang	2	138	13.0 10.0	70,000 25,000	.7 (Product)	1200-2000	6 16 in.	36 15	8	160,000	Crude delivered by domestic tankers and pipelined to Maoming refinery, then products railed back to Zhanjiang for export.
Qinhuangdao	2 1[2]	200 325	10.0 13.0	20,000 70,000	.4 (Crude)	2000	4 30 in.	12	7	200,000	30-inch pipeline connects tank storage and terminal with Daqing oil field.
Qingdao (Huangdao)	2[3]	314	13.0 11.5	50,000 25,000	2.7 (Crude)	1200	4 30 in.	48 24	4	200,000	30-inch pipeline connects tank storage and terminal with Shengli oil field.
Shanghai	2	200	9.5	25,000	1.0 (Product)	1000	8 14 in.	36	15	375,000	Crude delivered by domestic tankers and refined locally, then exported.

[1]Depth alongside berth is at high tide.
[2]1985 completion.
[3]Tankers restricted to 12-m draft and 230-m length. Smaller barges/vessels top-off larger tankers in deeper water. SOURCE: Author's on-site port interviews

Table 6: MAJOR COAL EXPORT HANDLING FACILITES

Port	Terminals: Berths	Terminals: Total length (m)	Terminals: depth[1] (m)	Max vessel size (dwt)	Annual export throughput (mil. metric tons)	Effective loading rate (metric tons/hr.)	Terminal ground storage 1,000 (metric tons)	Cargo handling equipment	Major coal sources	Major coal destinations	Remarks
Zhanjiang (Tian Shun Chao) District No. 3	1 (1983)	285	12	40,000	1.5	2,000	100-150	1 RR Dumper 2 Shiploaders 2 Stacker/ Reclaimers	Guizhou	Japan Singapore Phillipines	Double track RR planned to port.
Dalian (Ganjingzi district)	2	300	9	20,000	.6[2]	1,400	—	1 RR Dumper 2 Gantry RR Unloaders 4 RR Shiploaders	Beijing	Japan Romania	400,000-ton off-pier storage served by electrified 60-ton port-owned rail cars.
Qinhuangdao (Berth 8)	1	275	11	25,000	3.8[2]	4,000	70	4 Gantry RR Unloaders 5 Shiploaders 1 Stacker 2 Reclaimers	Shanxi Hebei Inner Mongolia	Japan	300,000-ton off-pier storage served by port-owned rail cars.
Qinhuangdao Phase I	2 (1983)	530	13	20,000 50,000	5	6,000	500	2 RR Dumpers 2 Stacker/ Reclaimers 3 Shiploaders	Same as above	Japan	A 300-km Japan-financed double track electrified RR linking port to Beijing and north China coal fields due to be completed in 1985.
Phase II	2 (1985)	609	13	50,000	10	8,000	1,000	2 RR Dumpers 2 Stacker/ Reclaimers 4 Shiploaders	Same as above	Japan	
Shijiusuo	1 1 (1985)	750	17 11	100,000 25,000	10	8,000	750	2 RR Dumpers 2 Stacker/ Reclaimers 4 Shiploaders	Shandong Anhui Jiangsu	Japan	300-km Japan-financed RR under construction from port to Yanzhou mines.
Lianyungang	1	265	9	20,000	2.2[2]	4,000	200	8 RR Gantry Unloaders 2 Shiploaders	Shanxi Henan Shandong Jiangsu Anhui	Japan	Double tracking of 225-km RR to port from Xuzhou mines underway.

[1]Depth alongside berth is at high tide.
[2]1981 throughput. SOURCE: Author's on-site port interviews.

time, nor are penalty charges levied for services such as unproductive berth time. Moreover, tariffs for services such as dockage, wharfage, and storage are generally lower than comparable charges at other ports in the Far East. In addition to these port charges, however, foreign ships must pay an *ad valorem* tax of 3 percent, which makes their total port costs substantially higher.

Vessel Size

The shallow approach channels to Chinese ports impose major draft and vessel size limitations. They are more severe for dry cargo ships than for tankers.

The maximum vessel size capability for each cargo category discussed in this article is listed below:

Commodity	Vessel size (dwt)	Deepest harbor
Grain	35,000	Dalian
	80,000	Shanghai (Luhuashan)
Crude oil	128,000	Dalian (Nianyu Bay)
Petroleum products	70,000	Zhanjiang
Coal	25,000	Qinhuangdao
Container cargo	35,000	Dalian

Draft limitations and inadequate facilities in China's ports preclude the efficient use of dry-bulk carriers over 35,000 dwt. The largest grain vessels the Chinese are willing to accept for lightering are 35,000–50,000 dwt. They strongly prefer 25,000–35,000 dwt ships which can be discharged without lightering at high tide in most of their grain ports.

SINOTRANS believes that 30,000 dwt is the optimum size for carrying grain to China because: depths and berths are adequate in China and in exporting countries eliminating the need for lightering; it is easier to purchase grain in such small lots; fumigation facilities in China can handle these vessels; and there are no Panama Canal transit problems. SINOTRANS also believes very strongly that PANAMAX size vessels (50,000–80,000 tons) are too large for carrying grain to China. It rejects the suggestion made by Ministry of Communications port officials that

Each month, the Ministry of Communications and the ministries of Foreign Economic Relations and Trade, Railways, and Commerce coordinate efforts and prepare a vessel arrival plan based on information supplied by SINOTRANS and PENAVICO (*see* page 28). Vessels not included in these monthly plans receive a lower priority in assigning berths. Foreign-flag vessel owners are advised to notify the Ministry of Communications through PENAVICO or SINOTRANS before the 15th day of the preceding month of the expected vessel arrival date for all chartered shipments.

Vessels do not receive their port destinations until 5–10 days prior to arrival in China. PENAVICO can negotiate dispatch/demurrage agreements during this period with individual PRC ports on behalf of either the shipowner or SINOTRANS in order to reduce port congestion and earn additional port revenues. These agreements do not supersede the charter party lay-time provisions agreed upon between SINOTRANS and the vessel owner. The regulations governing dispatch/demurrage agreements at each port do not vary greatly (*see* box on Dalian's demurrage/dispatch rates). These agreements apply to all vessels calling at China's ports and are calculated on gross registered tonnage. The incentive for China's ports to sign these agreements stems from their opportunity to retain 50 percent of the dispatch revenue they earn. These funds in turn are used to improve the housing conditions of port employees.

Outlook

China's port modernization program has fallen behind schedule and is not keeping pace with the growth of waterborne commerce.

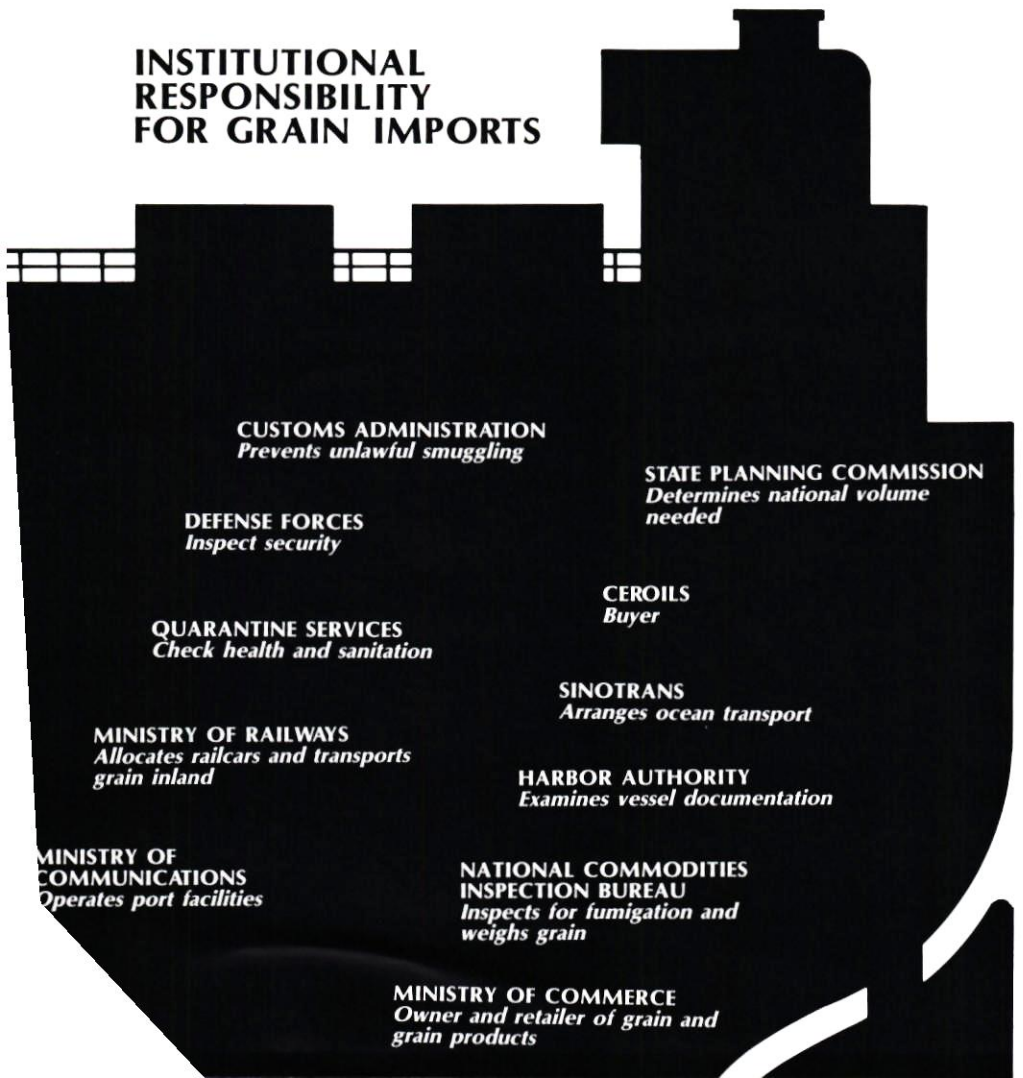
The need for more berths to accommodate larger vessels, and for expanded inland transport, can only be expected to increase. The squeeze on available wharfs and rail cars will become more severe as ships increase in size.

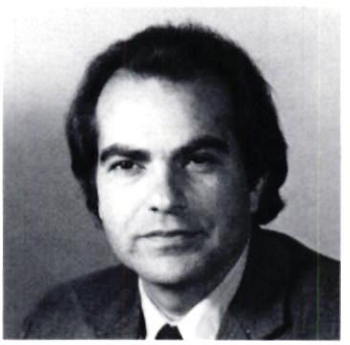
The water depth problem will forever restrict bulk cargo operations at many of China's major ports. The development of specialized deep-draft ports, such as Shijiusuo, Beliun, and Dalian's Nianyu Bay appears to be the only long-term solution to the draft problem for vessels carrying coal, iron ore, and oil. China would do well to construct a similar deepwater transshipment port for its grain imports.

Toward the end of the 1980s, however, the problems of severe congestion and vessel delays, particularly in the dry bulk and general cargo trades, should ease somewhat as new capacity is brought on line.

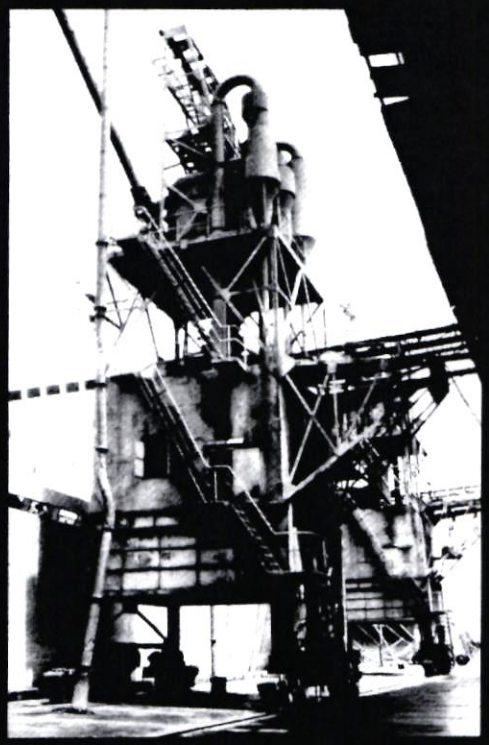
Even with a more modern port system, however, Chinese ports will continue to experience congestion unless management improves.

As deep-draft ports develop, terminal facilities, services, and equipment improve, and inland transportation capacity expands, there is no question that China will have the modern intermodal transportation system it so desperately needs to support its international trade.



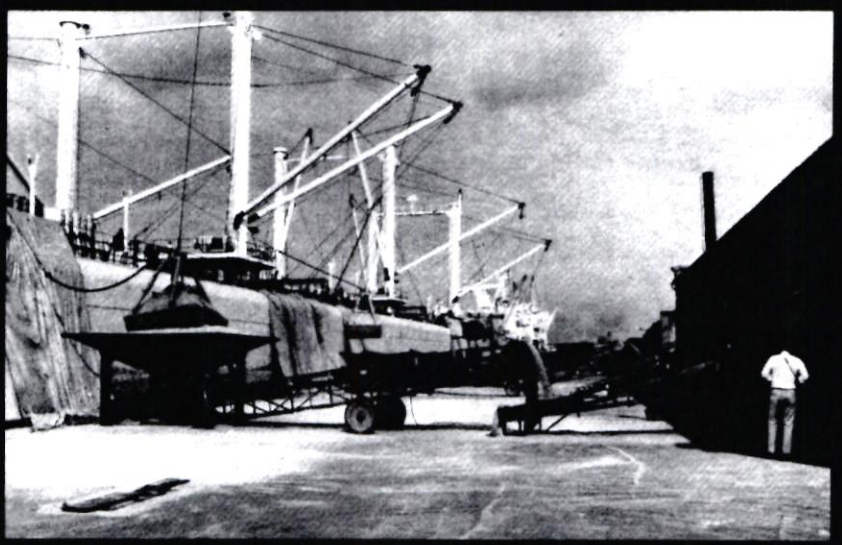


John M. Pisani is director of the Maritime Administration's Office of Port and Intermodal Development in the US Department of Transportation. An earlier article by Pisani on China's ports and maritime program appeared in the September–October 1981 issue of The China Business Review.

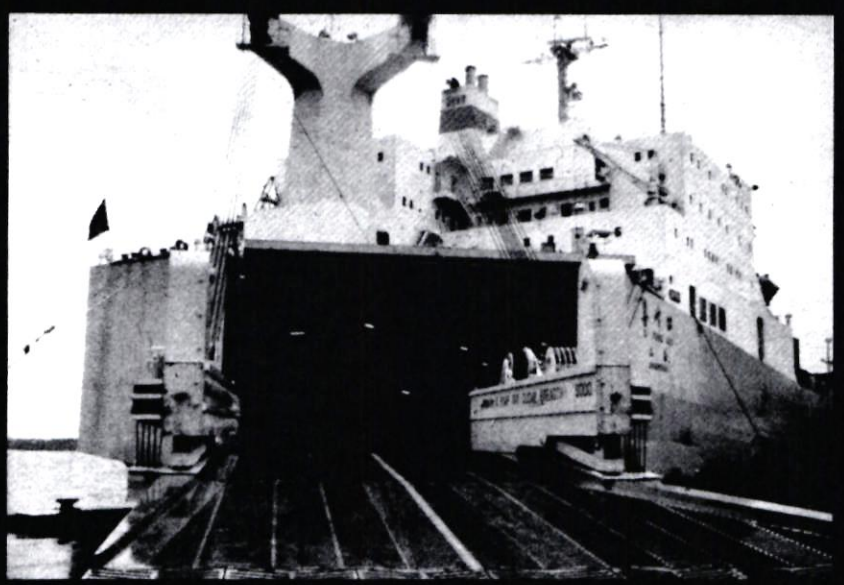


SHANGHAI
Berth occupancy exceeds 90 percent in all of China's grain ports. Warns the author: "Strained port capacity is likely to be the major factor constraining China's grain imports." Here the country's only pheumatic unloader sucks up grain into silos at Shanghai's working district No. 2.

GUANGZHOU
The port's pneumatic grain unloader is used just to clean empty ship holds. Chinese planners believe suction equipment is too "expensive, noisy, energy-wasting, and subject to breakdown."



QINGDAO
Shipboard grab unloaders moving grain to small hoppers and mobile conveyors. At far right is Robert Skeele of Phoenix Holdings.



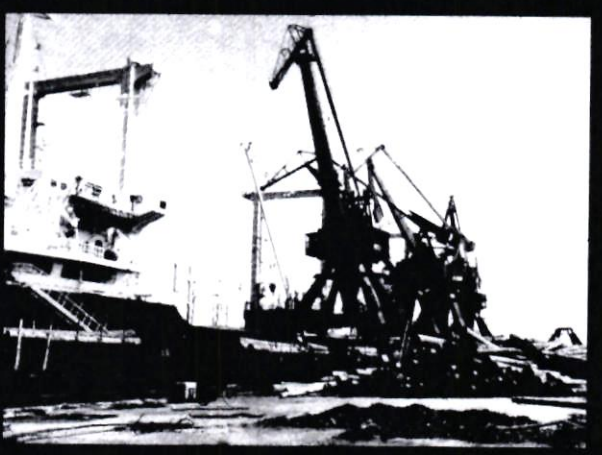
TIANJIN
The 14,000-dwt **Xi Feng Kou,** *COSCO's angled stern ramp ro-ro vessel, permits containers to be loaded and unloaded on flatbed trucks. Built by Kawasaki in 1980, the 753-TEU-capacity vessel is designed to serve small ports, or those lacking modern container handling equipment.*

Photos by John M. Pisani

TIANJIN
By the end of this decade, China will have "ample capacity" to handle its international container traffic, the author notes. Here a Hitachi transtainer moves CTI containers at the Basin No. 3 marshalling yard. A new 850-meter berth under construction at Basin No. 4 will double Tianjin's container handling capacity by 1985.

QINHUANGDAO
Coal port projects currently under way—with the help of generous Japanese loans—will more than double China's existing export capacity. Here gantry cranes unload coal cars at Qinhuangdao's Berth No. 8. From there the coal moves up conveyors, and is discharged into ships (below).

QINHUANGDAO
The $160 million port development scheme for Qinhuangdao includes a $650 million plan to modernize the rail link between the port and Beijing.



LOG BERTHS, QINHUANGDAO
To relieve port congestion, US experts have recommended to the Chinese that logs be unloaded into the water and rafted to inland ports, water conditions permitting, rather than unloaded directly onto the ground as is done here.

these vessels could use the Luhuashan Anchorage (located in the East China Sea 75 nautical miles from the Huangpu River entrance—*see* page 17) to unload part or all of its cargo. SINOTRANS contends that the major constraints to the practical use of Luhuashan are COSCO's ownership and control of the 100,000-ton Luhuashan transfer vessel and the current port congestion in Shanghai.

This issue appears to be more an institutional problem than a technical one. It is true that COSCO controls and gives priority to the lightering of its larger grain and ore carriers at Luhuashan. It wishes to continue using its 50,000–60,000 dwt vessels at the Anchorage, yet SINOTRANS is discouraging the use of bulk carriers over 35,000 dwt by claiming it is too difficult to purchase and receive grain in such lots regardless of whether COSCO or foreign-flag vessels carry it to Luhuashan. In essence, one can expect SINOTRANS, the sole forwarding agent for the China National Cereals, Oil, and Foodstuffs Import-Export Corporation (the importer of China's grain) to continue chartering bulk carriers in the 30,000–35,000 dwt range, accepting 50,000-dwt vessels for lightering only when necessary.

The Ministry of Communications and SINOTRANS, however, do agree that tankers are unsuitable for China's grain trade. Grab unloaders are preferred over pneumatic equipment, and the Chinese have no interest in using any portable suction equipment to discharge grain-laden tankers.

Table 7: COMPARISON OF ACTUAL AND PROJECTED CONTAINER TRAFFIC

(1,000 TEU)

	Annual Container Traffic					
	Actual			Estimated		Estimated available annual capacity
Port	1979	1980	1981	1982	1983	1985–90
Shanghai	15	30	50	75	125	300
Tianjin (Xingang)	5	15	25	50	100	400
Huangpu (Guangzhou)	6	7	14	15	25	200
Dalian	–	1	7	10	20	100
Qingdao	6	7	10	15	20	100
Total	32	60	106	165	290	1,100

Source: Author's on-site port interviews

Port Management Planning

Management planning and coordination among the multitude of ministries, commissions, provinces, and municipalities involved in the development and operation of ports and water transport remain inadequate. Separate institutional and administrative organizations for ocean, coastal, and inland water transport continue to result in unnecessary, costly transshipment, less than optimum consignment size, and indirect carrier service.

There are several organizations that interact when China imports grain (*see* chart). Equally complex planning and coordination are required for coal and petroleum exports. China is taking steps to improve the integral scheduling of all vessel arrivals in its ports through greater coordination among the various ministries involved in ocean and inland transport.

Table 8: MAJOR SPECIALIZED IMPORT-EXPORT CONTAINER HANDLING FACILITIES

	Terminals							Intermodal transshipment		
Port	Berths	Total length (m)	Depth[1] (m)	Max vessel size (dwt)	Annual throughput capacity (teu)	Terminal storage (m^2)	Terminal handling equipment	% RR	% Truck	% Water
Huangpu (Guangzhou)	2 (1983)	480	11.0	20,000 (1200 TEU)	100,000 (1983) 200,000 (1985)	2 CFSs (8,000) Stack area (200,000) (1985)	2 30.5 ton Gantry cranes 6 30.5 ton Transtainers	15	70	15
Shanghai Terminal No. 10	2	385	9.5	20,000 (1200 TEU)	100,000	Stack area (28,000) (100,000) (1983) Warehouse (16,000) CFS (4,000) (1985)	1 30.5 ton Gantry crane 2 30.5 ton Transtainers 2 35 ton Forklifts 1 30.5 ton Gantry crane (1983)	8	77	15
Terminal No. 9	2 (1985)	424	10	25,000 (1500 TEU)	200,000 (1985)	2 CFSs (8,000) Warehouse (110,000) Stack area (40,000) (1983) (200,000) (1985)	4 40.5 ton Gantry cranes 6 30.5 ton Transtainers	10	60	30
Tianjin (Xingang) Terminal No. 21 Basin No. 3	1	397	11	25,000 (1500 TEU)	100,000	2 CFSs (5,400) Stack area (92,200)	2 30.5 ton Gantry cranes 3 30.5 ton Transtainers 3 36.5 ton Forklifts 5 25 ton Forklifts	10	80	10
Basin No. 4	1 (1985) 1 (1986) 1 (1987)	850	12	30,000 (1800 TEU)	100,000 (1985) 100,000 (1986) 100,000 (1987)	3 CFSs (8,000) Stack area (300,000)	6 40.5 ton Gantry cranes 9 30.5 ton Transtainers	10	80	10

[1] Depth alongside berth is at high tide. CFS = Container freight station. SOURCE: Author's on-site port interviews.

The following regulations for Dalian for the first time clarify, among other things, how much foreign vessels can expect to be compensated for delays in Chinese ports.

The Cost of Delays

Regulations Concerning Calculation of
Dispatch Money/Demurrage for Vessels
Loading/Discharging at the Port of Dalian

General Provisions

Article 1. These regulations are laid down in order to promote the international trade, shorten vessels' time of stay in port, and quicken their turnaround.

Article 2. These regulations shall apply to all vessels calling at Dalian for loading/discharging whenever they have applied for signing an agreement of dispatch money/demurrage calculation and have obtained the port authorities' approval.

Article 3. Where container ships, ro/ro vessels, liquid bulk carriers, reefer carriers, and large-sized bulk carriers request to increase the rate of loading/discharging and of dispatch money/demurrage, the rates of same shall be fixed by both parties (vessel and port authorities) separately.

Article 4. Having accepted these regulations, the vessel should submit the application 10 days before the ship's arrival and should give 72 hours ETA and 24 hours exact ETA before ships arrival.

Loading and Discharging Rates

Article 5. Cargo shall not be discharged and/or loaded at the rates fixed in the table attached per weather working day of 24 consecutive hours on the basis of 5 hatches. Each hatch should be equipped with respective lifting device. If the vessel requires more than 5 hatches to be worked, the loading/discharging rates remain the same as 5 hatches; if the vessel provides less than 5 hatches, the rates shall reduce proportionally. **Remarks:** a) Where the length of a big hatch is over 26 meters and this hatch is equipped with two lifting devices and can be worked by two gangs simultaneously, the hatch is to be counted as two hatches, but no more than 5 hatches in total hatch numbers of a ship can be counted as workable hatches. b) If the length of a hatch is less than 26 meters, irrespective of this hatch equipped with two lifting devices and workable by two gangs, this hatch shall still be counted as one; however, if actual loading/discharging operations have been done by two gangs simultaneously at the said hatch, then this hatch is to be counted as two.

Rules for Laytime

Article 6. Time shall commence 24 hours after master's Notice of Readiness (NOR) to loading/discharging has been accepted by the port authorities within ordinary business hours (8–12 pm and 1–5 pm), provided formalities for entering port (including joint inspection, fumigation, and inspection of holds) have been passed and all cargo holds are ready for loading/discharging.

Article 7. Time when the last lot of cargo is properly stowed into the hold shall be the time of completion for loading. Time when the last lot of cargo leaves the ship shall be the time of completion for discharging.

Article 8. The following periods of time shall not be counted as laytime: a) Sundays, legal holidays of the People's Republic of China (in case of any holiday falling on a Sunday, it shall extend over the following day) and time between 0500 hrs. am Saturday or the day preceding a holiday and 0800 hrs. am on Monday or the day after holiday. b) Time during which loading/discharging is interrupted or affected due to wind, rain, fog, snow, tide, etc., as well as intervals between gales and showers. c) Time used before the commencement of laytime stipulated in Article 6 as well as time actually used on Sundays and holidays referred to under item a of this article. d) Time lost in stoppage of work or extra working time used for loading/discharging due to ship's lifting facilities and light trouble and other ship's fault. e) Time during which cargoes can not be handled under normal way due to cargoes melted, solidified, or stuck together as well as during loading/discharging. Abnormal conditions of cargo are found and survey or fumigation is to be carried out. f) Time lost due to cargo unstemmed. g) Time used for loading/discharging dangerous goods and awkward cargoes. h) Stoppage of work due to other than port authorities fault as well as stoppage of work ordered by the government.

Calculation and Settlement of Dispatch Money/Demurrage

Article 9. Dispatch money/demurrage shall be calculated on the basis of a ship's GRT (Gross Registered Tonnage). Demurrage shall be charged at the rate of RMB × 0.60 per ton per day and dispatch money is half of the demurrage. The minimum GRT for calculating dispatch money/demurrage basis is 3000.

Article 10. Dispatch money shall be charged according to all time saved and demurrage runs continuously. Part of a day for dispatch/demurrage shall be charged pro-rata.

Article 11. Time for dispatch/demurrage shall be calculated in accordance with the Statement of Fact jointly signed by the vessel's master and the port authorities (or their representatives).

Article 12. The settlement of dispatch money/demurrage shall be entrusted to China Ocean Shipping Agency Dalian Branch. Dispatch money/demurrage shall be settled ship by ship, together with a ship's disbursements. China Ocean Shipping Agency Dalian Branch shall collect handling charges of 5 percent on dispatch money/demurrage per trip from the recipient.

SOURCE: John M. Pisani, obtained from Dalian Harbor Administration Bureau, 1982.

Why American carriers find the China trade unprofitable.

SLOW BOATS FROM CHINA

Carolyn L. Brehm

When US steamship lines began direct service from Chinese ports in 1979, American importers breathed a sigh of relief at the prospect of efficient and timely transportation of their goods. Instead, three years later, importers continue to grumble about lengthy delays, excessive freight charges, and bungled documentation. As profits have fallen, some US importers have had to turn to other East Asian suppliers.

Shipping problems in fact have grown more serious over the years, despite increased service to the US by COSCO, China's own shipping company, and by foreign flag carriers. The country's rail and river transportation bottlenecks, congested ports, and disjointed bureaucracy are the major causes of the shipping delays which plague American importers.

In addition, China is currently charging excessive port handling fees and has implemented restrictions on the operations of US steamship lines calling on Chinese ports. Each carrier is allocated to one or two Chinese ports. None can operate its own feeder service or commission cheaper services on the open market. Under such constraints, American carriers find the China service unprofitable, and have passed extra freight costs on to their American customers, the importers. The end result is the imposition of a major barrier to the expansion of our two-way trade.

SHIPPING TERMS

Nothing is known for certain

The large majority of contracts concluded by American importers for the purchase of Chinese products are negotiated on a cost and freight (c&f) or cost, insurance, and freight (cif) basis at the insistence of the Chinese seller. Bulk and general cargo can be transported from a Chinese port either directly to the US port of destination via COSCO or a foreign flag vessel, or carried to Hong Kong or Kobe by feeder vessels. There the goods are transferred to oceangoing vessels. Containerized goods are stuffed in containers at Chinese ports, or transported in bulk to Hong Kong to be containerized. Importers of Chinese goods, under c&f terms, have no control over the method of shipment, whether direct or transshipped, or the designation of the carrier. These decisions are handled by the seller in conjunction with China National Foreign Trade Transportation Corporation (SINOTRANS). A handful of US firms have managed to negotiate freight on board (fob) terms, often shipping goods to Hong Kong where they are warehoused, consolidated, and loaded onto eastbound vessels.

When an importer's goods are ready for shipment (often importers will book goods 6–18 months in advance of delivery), the transportation department of the Chinese trade corporation fills out the necessary documentation, including a booking note. The booking note is sent to the nearest SINOTRANS branch office. If the contract is signed with a trading corporation in the interior, the corporation generally will ask its branch at the appropriate port to arrange documentation and shipping. For example, the Chengdu branch of CHINATEX in Sichuan Province may enlist the Tianjin Branch of CHINATEX to book a ship with the Tianjin branch of SINOTRANS out of the nearby port of Xingang.

Once a month or more, the SINOTRANS branch office meets with COSCO and presents 15 to 30 days worth of accumulated booking notes. SINOTRANS and COSCO analyze the type of services required and book some of the cargo with COSCO. The balance of the booking notes not handled by COSCO are then passed to the China Ocean Shipping Agency, known as COSA or PENAVICO, for booking space on foreign flag vessels.

If goods are carried by feeder vessel to Hong Kong, the feeder services likely to be used are the China Merchant Steam Navigation Corporation (CMSNC) or Far East Enterprising Co. Ltd. of Hong Kong (FARENCO). Feeder service is also available now from a number of small, provincially owned and controlled companies. In addition, Dalian, Shanghai, Fujian, and Guangdong have established their own oceangoing fleets, which have helped their foreign trade *and* earned foreign exchange.

For many American importers, the problems begin when their goods are ready for shipment. Chinese trading corporations rarely notify customers if cargo is delayed beyond the shipping date specified in the contract. Often, the Chinese corporations themselves have no information on the whereabouts of cargo, since SINOTRANS is charged with transportation arrangements. When goods are transshipped to Hong Kong, PENAVICO or FARENCO may send notification of the eastbound vessel on which goods are loaded to the US importer. But very often, particularly if a contract does not require notification, the information is not passed on.

More headaches occur when a large volume of containerized cargo purchased by one firm is not consolidated in the same containers. Frequently, large orders are split into several shipments in China by the feeder service, and delivered to the transshipment point piecemeal. Or, one lot of goods becomes intermixed with others in port warehouses and cannot be separated when loaded onto vessels.

Incomplete shipping documentation, and discrepancies in documentation, are a frequent complaint of US importers and steamship lines. On occasion, bills of lading reportedly have been back-dated so that the Chinese corporation can meet the

delivery date specified in a contract, while the goods are actually shipped weeks after the listed date. Freight charges may not be itemized on the bills of lading, making it impossible for importers to ascertain the accurate freight costs. In some cases, this has worked to the benefit of importers who have been able to claim a larger portion of the cost as freight, and consequently pay lower US customs duties.

For many American importers, the problems begin when their goods are ready to leave China.

Delayed receipt of documentation also causes problems, particularly when the goods are shipped on a COSCO vessel. Interior branches of the Bank of China are very slow in processing letters of credit and paperwork relating to Chinese exports. Chinese cargo sometimes arrives in the US before the importer has received the documentation. Since COSCO does not accept American bank guarantees, the cargo cannot be released without the bill of lading, and this results in lengthy delays after the goods have arrived at the US port.

EASTBOUND CARGO

Only a tiny share for US shippers

Under the terms of the US–PRC bilateral maritime agreement concluded in September 1980, US and Chinese carriers agreed to carry "not less than one-third of the bilateral cargoes," equally distributed between bulk and general cargoes. The remaining one-third was allocated to third-country vessels, which included Chinese-owned vessels flying the Hong Kong flag.

In practice, however, US steamship lines are carrying far less than one-third of the cargo provided for in the agreement. US Maritime Administration figures for two-way liner cargo carried from January to June 1982 indicate that US flag vessels carried only 6 percent of the tonnage, while COSCO and third-flag vessels handled 9 percent and 54 percent, respectively.

The five US steamship lines serving China formed a working group in the fall of 1981 to iron out their common problems in dealing with China, and to file a common tariff for eastbound cargo. Members of the US–PRC Eastbound Rate Agreement are: American President Lines, Ltd., Lykes Brothers Steamship Co., Sea–Land Service, Inc., United States Lines, and Waterman Steamship Corporation. COSCO has been invited to join them, but has shown no interest to date.

In addition to their scanty share of cargo, the members continue to protest the limitations placed on their operations in China. Each steamship line has been assigned exclusively to one or two ports in China. While the carriers can discharge goods at most ports, they can only take on cargo at ports allocated to them. Additionally, US carriers cannot deploy their own feeder vessels to or from Chinese ports, but must rely on Chinese feeder services.

The carriers have also taken issue with China's refusal to recognize their common eastbound tariff, filed on May 15, 1982. Instead, SINOTRANS reimburses US steamship lines according to COSCO rates, which tend to be much lower than foreign flag rates. One US carrier has over $100,000 in outstanding receivables which SINOTRANS has refused to pay.

China charges US carriers for container stuffing and handling fees, which are borne by the seller in normal international practice. Chinese feeder-vessel service charges are considered excessive by the American steamship lines. All of the extra fees and restraints on service have resulted in lost revenue, requiring American carriers to devise ways to recoup their losses through extra freight charges levied on US importers.

SURCHARGES

The infamous "container usage" fee

The American lines began to assess importers extra freight surcharges on cif cargo from China in 1980. The so-called "container usage" charge amounted to $6 per metric ton and, while not a common practice in international shipping, the additional fees were legal because they were filed with the Federal Maritime Commission.

Importers' freight costs for goods carried on US flag vessels shot up dramatically, adding $3,528 to a shipment of magnesite, and over $800 to a container of apparel. In response, importers rallied together to dispute the charges, which were finally dropped in April 1982, when the US–PRC Eastbound Rate Agreement Common Tariff took effect.

As of October 1, however, Agreement 10414 established a Container Freight Station (origin cfs) charge of $6.00 per revenue ton at ports of origin to compensate the carriers for the cost of loading containers. China has refused to accept the charge. So once again, the carriers are rebilling the charge to American importers.

While American carriers may recover some operating costs by passing the fees on to importers, the net effect is to discourage the use of

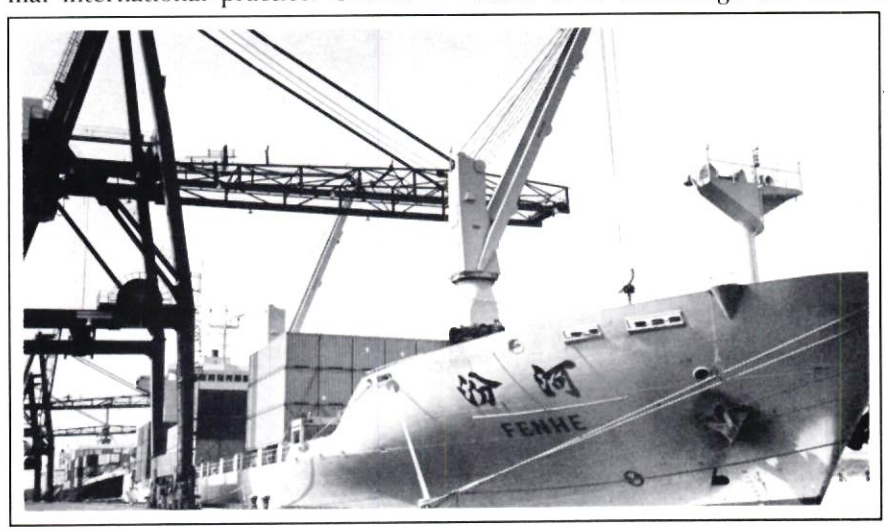


Photo courtesy Port of Houston

The 1,152-TEU-capacity *Fen He* makes its first call at Houston's modern intermodal terminal. The West German-built vessel recently inaugurated COSCO's first monthly container service between Shanghai, Tianjin (Xingang), and the ports of Houston, Charleston, and New York.

American carriers in eastbound trade.

In several past instances, importers successfully stipulated in their contracts in China that certain American carriers are to be avoided due to the container usage charges. The practice certainly will not help the imbalance in our cargo share with China.

1983 PROSPECTS

One significant step forward

The carriers have used the mechanism set up as part of the official US–China Maritime Agreement to broach shipping problems with the Ministry of Communications. So far little progress has been made.

A delegation headed by MARAD's Admiral Harold Shears came back from annual talks in Beijing in September 1982, with only a minor concession—to allow US carriers to transport empty containers between Chinese ports without incurring extra charges.

Members of Agreement 10414 see a ray of hope this spring when the first round of talks to renew the maritime agreement are scheduled to begin. The Ministry of Communications is expected to push for access to more US ports, virtually the only card the Maritime Administration is holding.

American importers continue their outcry at China's shipping and trade organizations, as well as US carriers and the US government. Unless the plight of US carriers is alleviated, importers may turn increasingly to Chinese shipping lines. COSCO's service has improved dramatically in the last two years, especially with the advent of its container service to the East and West coast ports in 1982.

One bright spot, however, is the effort by several US firms and SINOTRANS to establish a consolidation service, to better consolidate cargo at major Chinese ports. This would put an end to the problem of split container shipments—a major agreement in a business where every step forward is a significant advance. ❧

Carolyn L. Brehm, Director of Business Advisory Services, follows transportation issues at the National Council. She has covered five Guangzhou Trade Fairs and travelled extensively in China since joining the Council staff in February 1978.

Chinese Shipping Organizations

MINISTRY OF FOREIGN ECONOMIC RELATIONS AND TRADE. Responsible for the promotion of trade, with particular stress on exports; oversees 12 foreign trade corporations, and several transportation-related corporations. 6 Dong Changan Jie, Beijing.

MINISTRY OF COMMUNICATIONS. Responsible for China's ports, roads, all water transportation, shipping, and some shipyards. 10 Fuxing Lu, Fuxingmenwai, Beijing.

CHINA OCEAN SHIPPING COMPANY (COSCO). Under the Ministry of Communications; administers and operates PRC flag vessels involved in foreign trade; charters some vessels; handles cargo and passenger services; clears foreign ships; books ship space and transshipment cargo. COSCO does not appear to have jurisdiction over China's coastal and river shipping operations, which are overseen by other agencies under the Ministry of Communications. 8 Dong Changan Jie, Beijing; 22 Battery Street, Suite 700, San Francisco, CA 94111.

CHINA MERCHANT STEAM NAVIGATION COMPANY (CMSNC). COSCO's agent in Hong Kong; undertakes business on behalf of COSCO or its joint shipping companies, as well as a number of Hong Kong and Macao-registered (but Beijing-owned) companies, including Sino–Albanian Shipping Co., Sino–Polish Shipping Co., Sino–Tanzanian Shipping Ocean Tramping Co., and Yick Fung Shipping and Enterprises Co. CMSNC has undergone a rapid rise in status, and is thought to be on the same level as COSCO. Fuxingmenwai, Wangfang Dian, Beijing; 15–16 Connaught Road West, Hong Kong.

CHINA OCEAN SHIPPING AGENCY (COSA or PENAVICO). Undertakes agency business for oceangoing vessels calling at Chinese ports; arranges sea passage; books space; arranges combined transportation and transshipment of cargo; attends to chartering, purchase, or sale of ships; acts as COSCO's and foreign flag vessels' agent in China's ports; maintains 18 principal branches throughout China. 6 Dong Changan Jie, Beijing.

CHINA FREIGHT MANAGEMENT CORPORATION. Manages export and import cargoes, including the supervision of loading, unloading, and warehousing of freight. Yangfang Dian, Fuxingmenwai, Beijing.

CHINA NATIONAL FOREIGN TRADE TRANSPORTATION CORPORATION (SINOTRANS). Arranges transportation of foreign trade goods for FTCS under MOFERT and most ministerial corporations; 30 branches throughout China, including all major river ports, airports, and border stations; maintains agents at more than 300 ports in more than 140 countries. Erligou, Xijiao, Beijing.

CHINA NATIONAL CHARTERING CORPORATION (SINOCHART or ZHONGZU). Charters vessels and books shipping space at the request of SINOTRANS and on behalf of FTCS and various domestic and foreign parties; branches in 18 PRC ports. 6 Dong Changan Jie, Beijing.

FAR EAST ENTERPRISING COMPANY (HK) LTD. (FARENCO). Operates under China Resources Co., the Hong Kong-based, China-owned agent for MOFERT and FTCS; also acts as Hong Kong agent for SINOTRANS and SINOCHART; engages in chartering, canvassing, forwarding, stevedoring, buying and selling vessels, and making cargo arrangements. Bank of China Building, 9th–11th Floors, Hong Kong.

SINO-AM MARINE COMPANY, INC. US subsidiary of SINOTRANS; charters oceangoing vessels for SINOTRANS; acts as broker for US exporters. One World Trade Center, Suite 3127, New York, NY 10048.

CHINA INTEROCEAN TRANSPORT, INC. Sister organization to SINO–AM Marine; US subsidiary of SINOCHART; provides freight-forwarding from the US to China; door-to-door multimodal service by ocean, air, and land; transportation insurance; consulting services; FMC-approved independent ocean freight-forwarder for all US sea and air ports. One World Trade Center, Suite 3127, New York, NY 10048.

China's second-largest port now handles about a quarter of US–China trade.

DALIAN

Liao Feng
China Features correspondent

The port at Dalian, in southeast Liaoning Province, has developed over the last 30 years into the country's second largest foreign trade harbor. With about 3,200 Chinese and foreign ships calling, and an annual cargo-handling capacity of 33 million tons, the 60-year-old port is, in freight volume handled, second only to Shanghai, which handles 83 million tons of cargo each year.

Dalian has 12 wharves, with 48 berths, of which 22 are deepwater and capable of accommodating fully loaded vessels of at least 10,000 dwt. The biggest berth can load and discharge 100,000-ton-class oil tankers.

The port mainly handles exports of crude oil, refined oil, iron, steel, timber, grain, and ores, as well as textiles and other light industrial goods, while most imports are bulk grain, iron ore, sea salt, chemical fertilizer, and complete sets of equipment.

According to Wang Diandong, deputy manager of the Dalian Port Loading and Unloading Joint Corporation, Dalian port handled 33 million tons of cargo in 1981, 10.7 percent of the national total.

Trade with the United States accounts for part of the increase. Dalian port last year exported $436.3 million worth of goods to the US, a 46.5 percent increase over 1980. To handle this growth, Dalian has instituted a direct shipping service and, as of early 1982, a container shipping route to the US. In late 1981, port authorities signed an agreement on dues and charges for lash vessels with the Waterman Steamship Corporation, under which the first lash ship from the US corporation was successfully unloaded at Dalian in March 1982.

A year-round ice-free natural harbor, the Yellow Sea port has an average water depth of 10 meters, with 17.5 meters the deepest point. Fully loaded general cargo carriers with 11-meter drafts can sail into the port. It is flanked by the Dandong and Yingkou harbors in Liaoning and faces Yantai harbor in Shandong Province across the Bohai Gulf. The port links up with the ports of Shanghai, Tianjin, Qingdao, Yantai, Longkou, and Weihai.

Development and renovation has been ongoing at Dalian since 1949. Xingang harbor in Nianyu Bay, 60 kilometers north of Dalian, was completed in July 1976. This harbor has two deepwater berths that can accommodate tankers up to 128,000 dwt tons and 80,000 dwt tons, respectively.

Seven Specialized Harbor Areas

Xingang is one of seven special-purpose harbor zones at Dalian. Crude oil from China's biggest oilfield at Daqing, in Heilongjiang Province, passes through a 700-mile pipeline to Xingang, where it is pumped onto ships and trains destined for various parts of the country and abroad. This oil terminal is now China's largest crude oil exporting base, with an annual capacity of 15 million tons.

Five domestically made, radio-controlled oil booms installed at the terminal can convey crude oil to vessels at a flow velocity of 2,000–3,500 tons per hour. They can fill a 100,000-dwt-class oil tanker within 36 hours. The oil terminal also has 350,000 tons of oil tank storage and a wastewater treatment facility.

The No. 1 and No. 2 working zones in the center of the port have multipurpose wharves for importing and exporting dry goods, with a combined annual cargo-handling capacity of 5 million tons.

The Siergou zone has a special terminal for oil product exports that can handle 8 million tons a year.

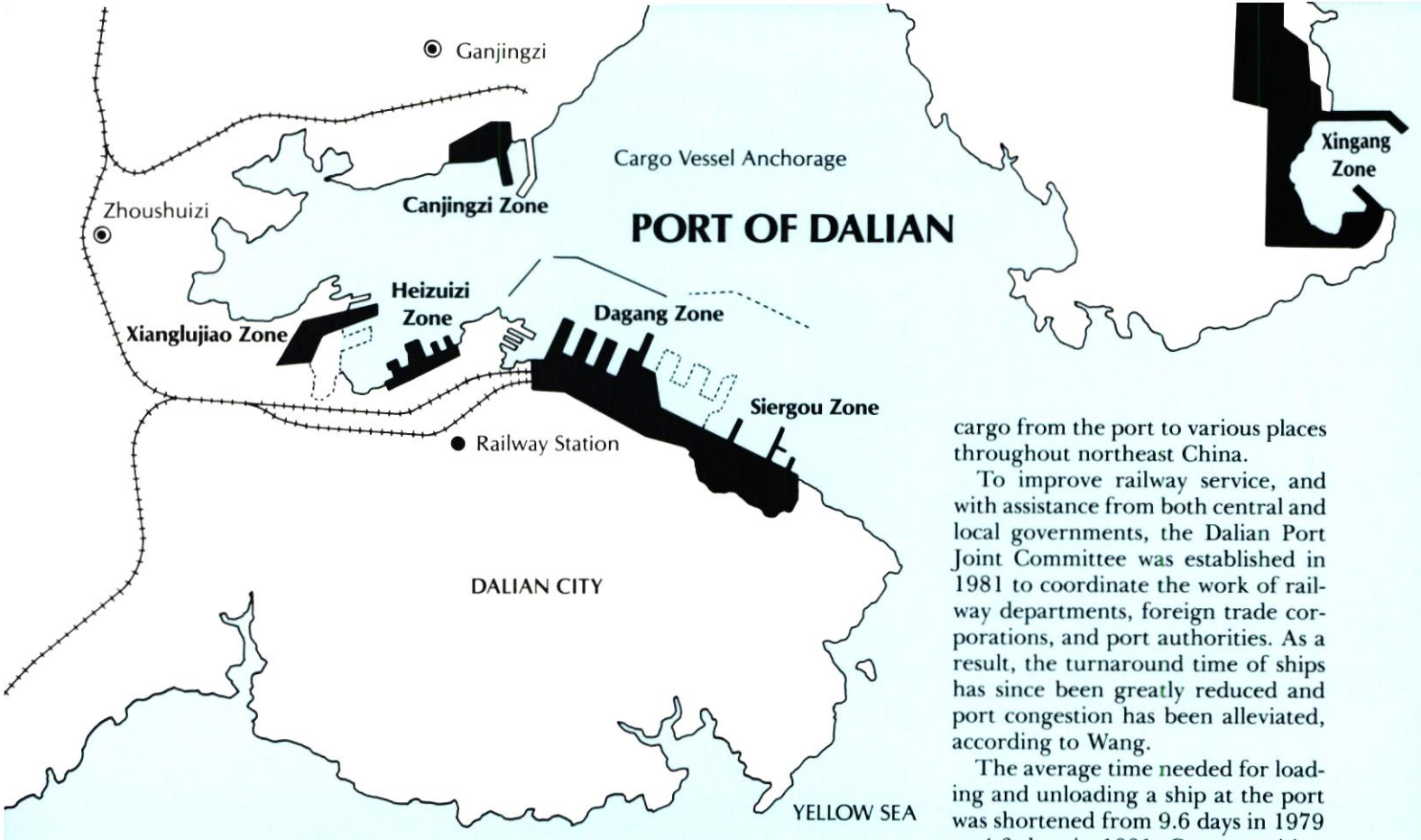
The Xianglujiao zone handles timber and pig iron, and has an annual capacity of 1 million tons. The Gan-

Major Exports to the US Through Dalian

Gasoline and naptha head the list, all from the giant Daqing oilfield to the north of the port.

Item	1981	Percent Change 1981/1980	1982 Jan.-June	Percent Change Jan. June 82/ Jan. June 81
Gasoline for motor vehicles (tons)	427,000	-15.3	374,863	71.2
Naptha (tons)	95,144	160.0	54,602	-4.4
Leather shoes (pairs)	250,000	250.0	—	—
Cotton cloth (meters)	4,470,000	25.6	—	—
Polyester-cotton cloth (meters)	3,210,000	—	1.0	-15.3
Cotton knitwear (mil. $)	3.22	25.8	2.29	60.1
Garments (mil. $)	23.76	90.8	25.83	95.7
Silk (meters)	1,030,000	63.5	550,000	31.0
Carpets (square meters)	45,179	71.2	18,101	-19.5
Porcelain (mil. $)	1.57	310.0	2.43	142.0
Alarm clocks (pieces)	446,000	8,700.0	83,952	-45.2
Canned food (tons)	514	100.0	321	-32.1
Honey (tons)	817	500.0	496	-27.3
Pumpkin seeds (tons)	130	-10.4	190	850.0
Bristle brushes (dozens)	130,000	460.0	25,900	-55.8
Herbal medicine (mil. $)	0.4	—	0.28	55.6
Hardware (mil. $)	0.48	—	0.38	58.3

SOURCES: Dalian Port Loading and Unloading Joint Corporation, April 1982, and *China Economic News*, Aug. 9, 1982.



jingzi zone contains a coal terminal capable of handling 3 million tons of coal each year. A special-purpose terminal at the Heizuizi Working Zone for consumer goods can handle 500,000 tons of cargo a year.

All the terminals at Dalian are mechanized. The port uses more than 530 pieces of loading and unloading equipment, including portal and rubber-tired gantry cranes and special-purpose or multipurpose cargo-handling machines. Dalian owns more than 50 boats for port operation and transport.

The port's only floating boat-crane, with a load capacity of 600 tons, is used mainly for unloading large equipment.

Container Handling

Since 1980, Dalian has also handled containers, with 907 TEUs moved that first year, according to Su Yaoshun, manager of the Dalian Port Container Corporation. In 1981, 5,536 TEUs passed through the port. That represents more than 33,000 tons of cargo. Scheduled container shipping routes have been established with Japan, Singapore, Poland, Australia, Western Europe, Hong Kong, and the US. The container wharves, however, still need to be improved.

"The container handling facilities in our port are somewhat out of date," notes Su. "So we are planning to introduce modern equipment and expertise from Japan and other industrially developed countries."

The port is now rebuilding a general goods yard, with a floor space of 25,000 square meters, into a container cargo yard expected to be put into operation in 1982. In addition, a modern container terminal with an area of 400,000 square meters and two berths for 50,000-ton-class ships will be built. In five years the completed wharf will handle 100,000-TEU containers carrying 1.5 million tons of cargo a year.

Among the other facilities at Dalian are 47 storehouses with a total floor space of nearly 270,000 square meters; a grain depot having a capacity of 40,000 cubic meters; 880,000 square meters of goods yards; and 77 oil storage tanks with an aggregate capacity of about 600,000 cubic meters.

Railways transport 90 percent of the cargoes loaded or unloaded at the port. Dalian contains special rail lines totaling 127 kilometers which are served by 17 diesel and steam locomotives, and 120 railway wagons. Trains enter all special wharves, except the oil terminal, to carry cargo from the port to various places throughout northeast China.

To improve railway service, and with assistance from both central and local governments, the Dalian Port Joint Committee was established in 1981 to coordinate the work of railway departments, foreign trade corporations, and port authorities. As a result, the turnaround time of ships has since been greatly reduced and port congestion has been alleviated, according to Wang.

The average time needed for loading and unloading a ship at the port was shortened from 9.6 days in 1979 to 4.6 days in 1981. Cargo awaiting shipment averaged about 100,000 tons each day in 1981, 50 percent less than in 1979.

Development Plans

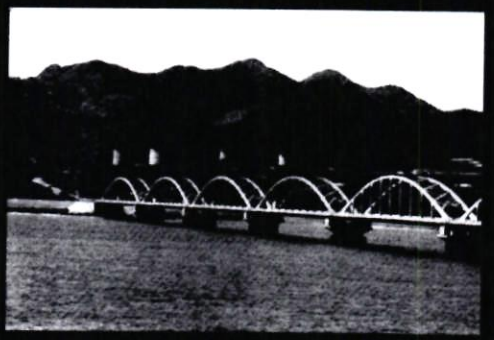
The port is directly under the administration of China's Ministry of Communications, according to Wang. The local governments of Liaoning and Dalian city aid the port's development of welfare facilities for workers and sailors, but do not interfere with its management.

On January 1, 1982, the municipal government was officially separated from port management. Two independent organizations under the Ministry of Communications—the Dalian Port Administrative Bureau, and the Dalian Port Loading and Unloading Joint Corporation—were established. The former is in charge of port planning and construction, and the latter is responsible for cargo management.

Five- and ten-year development programs are being planned for the port, according to Wang. A new harbor containing 12 large deepwater berths with a total berthing capacity of 740,000 tons will be opened by 1990. Construction of three large special-purpose wharves for containers, coal, and ores are under construction. They should be completed

DALIAN
The main terminal in Dalian's Dagang zone. At upper right, grain vessels unload at two berths equipped with gantry cranes and two rail lines.

LOADING SUPERTANKERS
Dalian ranks as China's biggest crude oil exporter, thanks to a 1,000-kilometer pipeline from Heilongjiang's giant Daqing oil field to the Xingang oil port 60 kilometers northeast of the city.



2,000–3,500 TONS PER HOUR
Trestle bridge conveys Daqing crude oil through Chinese-built automatic loading arms (above) to supertankers bound for Japan, Romania, and Yugoslavia, among other destinations. 100,000-ton tankers can be loaded in 36 hours.

Photos by John M. Pisani

DALIAN GRAIN TERMINAL
Rail cars wait to be filled by unloaders with 8-ton clamshells. In 1981, 3 million tons of imported grain passed through Dalian. But the port's 32,000-square-meter silo, one of only three at China's major ports, is used for soybean exports, not grain imports.

in three years. By 1985, the port's annual cargo-handling capacity will increase from the current 33 million tons to 40 million tons. The berths, cargo yards, and operational lines will accommodate larger vessels by applying up-to-date loading and unloading technologies.

The programs have been worked out by the Dalian Port Administrative Bureau in accordance with the Ministry of Communications. The State Economic Commission will allocate funds for the construction of the planned projects. ₹

The modern Dongdu port area will give a needed boost to export processing.

XIAMEN

Bian Ji
China Features correspondent

As part of a large-scale expansion program for Xiamen port in Fujian Province, two new berths accommodating 10,000-ton and 50,000-ton vessels have been completed recently at Dongdu, China's modern harbor on the East China Sea.

Also under construction are a 19-kilometer feeder railway, a 7-kilometer road, water supply facilities, and loading and unloading equipment, according to Xing Shou, director of the Xiamen Port Administration. All were scheduled to go into operation in late 1982, together with certain ancillary projects, including a goods yard, and a seamen's club.

Xiamen is located 1,052 kilometers (568 miles) south of Shanghai, about 220 kilometers west of Taiwan and 532 kilometers north of Hong Kong. Xiamen Municipality is one of China's four special economic zones (SEZs) set up to attract and absorb overseas investment. The other zones, all in Guangdong Province, are Shenzhen, Zhuhai, and Shantou (Swatow). The Xiamen SEZ will mainly be a site for export-processing. About 100 cooperative ventures were set up there during 1980–81, mainly involving exportation, tourism, housing, and factory renovation.

Xiamen is one of the 20 major Chinese sea ports open to foreign ships. It is a natural deepwater harbor, well protected from wind and storm by a cluster of islets. Water depth ranges from 10 meters to more than 40 meters, allowing for the free passage of 10,000-ton or more class ships during either high or low tide. There is little silt accumulation in the harbor area.

The New Port

The Dongdu port facility at the western end of the Xiamen peninsula will serve the SEZ. There, deepwater berths can be built along a 5-kilometer section of the coast where the navigational channel is 200 meters wide and 10–20 meters deep.

The first stage of construction of the new harbor, ongoing since October 1977, involves the building of four deepwater berths for ships of 10,000 tons or more. Berths No. 1 and No. 2 were first built to meet the immediate need to accommodate large cargo vessels.

The No. 1 berth is a terminal for general goods and containers, capable of accommodating 50,000-ton-class vessels. The berth has a container-handling bridge, container-carrying tractors, 18,154 square meters of container yards, and 2,880 square meters of storehouses able to store 786 TEUs (20-foot equivalent units) of containers. There are also 11,340 square meters of general goods yards.

The No. 2 berth for 10,000-ton-class vessels is used for importing and exporting bulk cereals. This berth contains a storehouse with a total floor space of 13,680 square meters. There, portal cranes and belt conveyors are employed for loading and unloading operations.

Construction on the two other berths for 10,000-ton- and 15,000-ton-class ships, along with ancillary projects, is expected to be completed by 1985, which is when Dongdu, under the first phase of expansion, will become fully operational. By that time, Dongdu will be able to handle 2 million tons of freight annually. Also by 1985, Dongdu will acquire a new customs inspection post, quarantine station, commodity inspection office, and frontier inspection station.

The Fujian Provincial People's Government invested in the ancillary projects, while China's Ministry of Communications furnished the necessary funds (about $80 million) for construction of the four berths.

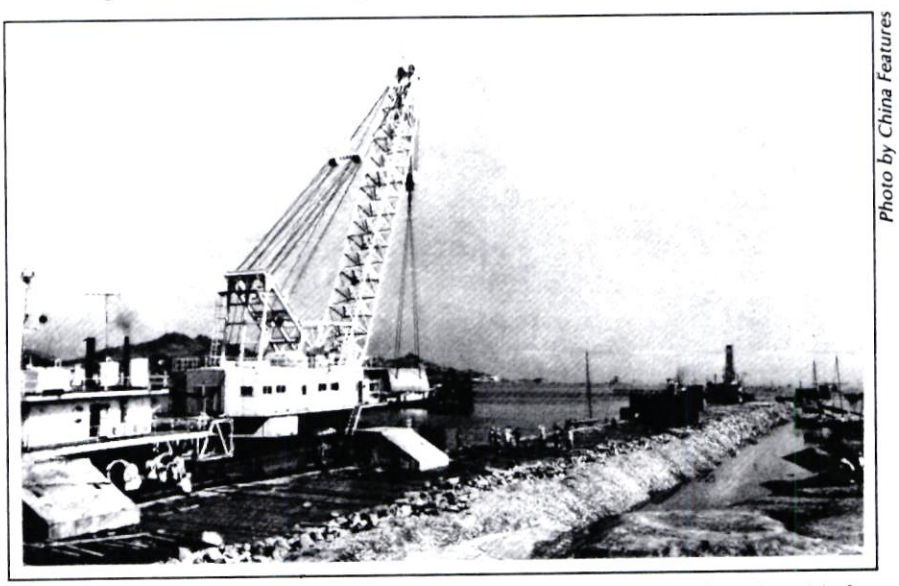


Photo by China Features

Phase 1 of the new Dongdu port includes four berths for ships of up to 50,000 dwt. The original completion date has been moved back from 1982 to 1985.

Phase Two

The second construction stage for Dongdu harbor, according to Xing, consists of a container wharf capable of handling 100,000 TEUs of containers each year, a coal wharf with an annual handling capacity of 1 million tons, a bulk grain wharf able to handle 800,000 tons annually, and a ship repair dock capable of repairing oceangoing ships of up to 50,000 tons. All of these projects are planned as joint ventures. When completed in 1990, Dongdu will be able to handle 4.02 million tons of cargo and 100,000 TEUs of containers annually.

"We are also planning to use foreign investment to support a joint oceangoing mercantile fleet to meet the needs for container transportation," adds Xing.

Xiamen port has regular trade relations with Japan, Singapore, Malaysia, Thailand, the Philippines, and Hong Kong, and irregular service to the US, Australia, and northern Europe. The port's domestic routes radiate out to Shantou, Guangzhou, and Zhanjiang to the south, and Quanzhou, Fuzhou, Shanghai, and Dalian to the north. The volume of imported and exported cargo handled at Xiamen has increased from 584,000 tons in 1979 to 764,000 tons in 1980, and 796,000 tons in 1981.

The Old Port

The existing harbor at Xiamen has seven anchorages, nine wharves, and an operational zone.

The seven anchorages are situated along the strait between Xiamen Peninsula and Gulangyu Island, and have a water depth of more than 10 meters. The anchorages have five mooring pontoons—two for 3,000-ton ships, two for 5,000-ton ships, and one for 10,000-ton-class ships. All cargo from ships of 5,000 tons and above are loaded and unloaded at the anchorages.

The Heping (Peace) wharf, stretching along a 200-meter section of the coast in Xiamen proper, has two steel-structured landing stages or anchored platforms. Each is equipped with several one-ton cranes to handle general goods. They can berth two 3,000-ton-class vessels simultaneously. Behind the landing stages are two storehouses with a total floor space of 4,500 square meters. Two elevators operate at these platforms to transport trucks and other goods-carrying vehicles to and from the shore. Feeder railways, served by two 340-meter loading and unloading lines, run from the storehouses to the Yingtan–Xiamen railway.

The 200-meter Mazugong wharf, with a water depth of two meters, has four berths for cargo ships up to 300 tons. The remaining seven wharves, located on a 394-meter coastal section, are used for even smaller ships sailing on both offshore and inland river routes. Each wharf has a berth equipped with cranes.

The Gaozi Operational Zone at the northwestern corner of Xiamen Peninsula has nine berths connected with the Yingtan–Xiamen railway. The zone sprawls across a 530-meter coastal section protected by a stone embankment. Since the water is shallow, the berths can accommodate only sailing boats during high tide. There are nine cranes and 32,271 square meters of goods yards in this zone.

In all, the old harbor has four storehouses with a total floor space of 11,356 square meters, as well as temporary goods yards. The largest tire cranes can lift 16 tons. Xiamen also has 34 barges with a total loading capacity of 6,850 tons, three water supply ships, tankers, and ships for pilotage, sea salvage, and communications.

Xiamen port is administered by the Xiamen Port Administration under the province's Department of Communications. It is the Xiamen City Supply Corporation that supplies incoming foreign ships with fresh water, food, and consumer goods. The China Foreign Ship Agency and the China Foreign Ship Tally Corporation have branches at Xiamen. The shipyard has facilities to repair foreign ships.

Since the old harbor does not have enough berths and other facilities, congestion has been a serious problem for years, according to Xing. Sometimes 20,000- and 30,000-ton-class ships carrying imported wheat or chemical fertilizers have to stay at the port for one month to discharge their cargoes, he added. "So, improvements and expansion are essential if foreign trade is to develop at the SEZ."

The Dongdu project is a step toward that goal, says Xing: "While trying to upgrade the existing wharves of the old harbor by revamping berths and ancillary facilities, the port will concentrate on the construction of the new Dongdu harbor in the next few years to create good conditions for overseas investors." ₹

By 1985 the new harbor will be competing with Shanghai as China's busiest, most modern container port.

TIANJIN

Cong Wenzi
China Features correspondent

Tianjin harbor, China's first container facility and one of the world's largest man-made harbors, is steadily expanding to meet the needs of modern shipping and the rapid growth of China's foreign trade.

Between 1973 and 1981, the Chinese government added 15 berths to the port and allocated four times as much money for its development as in the previous 20 years. A large part of the commitment went to accommodate the growth of containerized traffic.

In 1981 three new berths were added to the port's 25 existing berths. The new berths included two 35,000-ton class, sundry goods wharfs, and a container wharf capa-

Photo by China Features

A 30.5-ton Hitachi transtainer at the container yard in Tianjin.

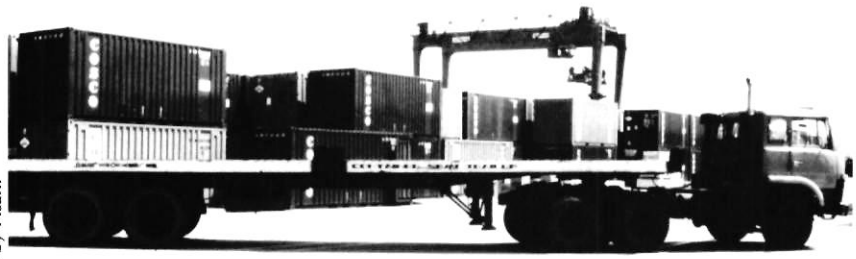


Photo by Pisani

A Ford tractor pulls a Chinese-built trailer modified to handle 20′ and 40′ demountable containers.

ble of handling 100,000 TEUs annually. The port can now handle 12 million tons of cargo annually, 40 times its capacity in the early 1950s.

Ships previously had to navigate a 60-meter-wide channel before they were able to load or unload. With the completion of the first stage of a project to widen the harbor's main navigation channel in 1981, the channel has now been broadened to 120 meters. Plans have been drawn to further widen the channel to 150 meters in 1985.

General Cargo Facilities

Tianjin is now second only to Shanghai in the volume of its exports and imports of general cargo, which accounts for 50 percent of its commerce. A total of 908 ships called at Tianjin during the first half of 1982, 122 more than during the same period last year. Their average waiting period at anchor was reduced to 7.6 days, 7 days less than a year ago.

Tianjin harbor eventually will be able to handle an annual turnover of 400,000 TEUs, according to Liu Jiazhen, assistant manager of the Tianjin Harbor Container Service Company.

Work is currently underway on three additional container berths, which are scheduled for completion by 1987. Renovation is taking place on a salt wharf, which is expected to go into operation in 1983. Construction is also underway on 19,164 square meters of warehouse space, 7,900 square meters of auxiliary buildings, and water, electricity, heat, and communications facilities.

The port of Tianjin, established more than a century ago, had only four 3,000-ton-vessel berths and one coal wharf with an annual capacity of 5,000 tons, before the founding of the PRC in 1949. It now has three operation centers, covering a total land area of 10 square kilometers. The three centers are equipped with more than 1,000 loading and unloading machines, including portal, bridge, and floating cranes, and forklift trucks, most of which are Chinese-made. There are 138,000 square meters of warehouse space, and 470,000 square meters of stocking yards.

The four 3,000-ton-vessel berths at the Haihe operation center, which is linked with Tianjin proper, have been out of operation since a sluice was built during the 1970s at the mouth of the Hai River to protect drinking water from pollution by sea water. The center will not reopen until 1984, when a water diversion facility from the Luan River to Tianjin will be completed, according to the chief engineer for Tianjin Harbor, Xu Xian.

The Tanggu operation center, 8.7 kilometers from the Hai River mouth, has five 3,000-ton-vessel berths, and two passenger wharfs.

The New Harbor, located in the coastal area of Bohai Gulf, is the biggest of the three centers. It has 28 berths, 13 of which have capacities of 10,000 tons. All ocean-going ships dock there for loading and unloading.

The New Harbor serves dozens of transoceanic routes and handles trade with 168 countries and other localities around the world. It accommodates annually more than 2,000 Chinese and foreign cargo ships, and dozens of international tourist passenger liners.

Container Operations

China's first container berth began operations in the New Harbor in 1981, according to Wang Haiping, manager of the Tianjin Harbor Container Service Corporation. When it opened, the container wharf only performed at one-third capacity, due to delays in completing some parts of the project. Power, for example, was provided only by a temporary source which limited the efficiency of the gantry cranes. The berth is currently operated in two shifts, and handles an average of 15 containers per hour.

In January 1982, the wharf handled 3,200 containers, an increase of 40 percent over the same period in 1981. A total throughput of 50,000 containers is expected in 1982.

The container berth is 397 meters long and 12 meters deep, and can accommodate 1,300-TEU vessels. Its stacking yard has an area of 92,200 square meters and can hold up to 6,828 containers. Two warehouses are available for stuffing and devanning.

The wharf's equipment includes a 30.5-ton shore-based crane for lifting containers onto and off vessels; it is the largest piece of shoreside loading equipment ever used in a Chinese port. The 22-meter-tall crane was designed and manufactured in China and can hoist more than 10 containers per hour.

Tianjin Harbor is linked by railway to the Tanggu marshalling station, from which several lines lead to the south and northeast; highways connect the port with Tianjin proper, Beijing, and cities throughout Hebei province.

Tianjin's summer weather is warm, but in the winter the temperature may drop as low as 18.3 degrees centigrade below zero. Ice sheets between 20 and 40 mm thick pose difficulties for ships between December and March, but icebreakers stationed in the port keep the channels open.

Three of the Ministry of Communication's 15 major ports are in Hainan. All desperately need expansion.

HAIKOU, SANYA, AND BASUO

Christopher M. Clarke

Hainan's largest port facility is in fact two separate ports at Haikou. The outer port (or Xiuying port) is operated by the Ministry of Communications.

The inner port, operated by the Guangdong government, possesses only one 500-dwt berth, and handles just 300,000 tons of cargo per year.

Xiuying handles almost all of Hainan's general cargo. Domestic imports consist mainly of food, building materials, coal, and consumer articles. Some American soybeans are transshipped from Guangzhou, and Haikou received foreign shipments of chemical fertilizer. Outgoing ships are loaded with sugar, lumber, and rubber. Passenger liners make daily runs to Guangzhou and occasional trips to Hong Kong and Singapore. The Hainan Foreign Trade Corporation operates its own fleet of six ships, the largest a 500-dwt vessel.

Xiuying port has 10 berths, including three for ships of 3,000 to 5,000 dwt, and three for ships of 1,000 to 3,000 dwt. In addition, vessels can tie up at two offshore anchorages for 5,000 dwt and one for 10,000 dwt vessels, where they are unloaded by barge. Between 200 and 400 Chinese vessels and about 25 foreign ships visit the outer port each year. Roughly 40 of these are 10,000 dwt or more.

The port's 2,500 workers handle more than 800,000 tons of freight per year. Three 10-ton cranes are in operation, although port officials admitted they are not of the best quality. The port does not have the capability of handling international shipping containers, but does make use of smaller Chinese containers.

Much of Xiuying's cargo handling is still done manually. In September 1982, the 1,900-ton *Hongqi No. 187*, destined for Dalian, was seen being loaded with rubber pallets by hand. The pallets were pushed in hand carts to ship-side, where they were loaded on a net to be lowered into the hold. Loading operations had been suspended the day before by rain. At best the facility is a semi-mechanized operation.

Despite these problems, port chief Shan Huairong said that the average loading or unloading time was one or two days, and seldom exceeded a week.

About 80 percent of Xiuying's incoming freight is dispersed by truck. Goods are stored in 14,000 square meters of warehouse space, or in 25,000 square meters of open storage, until vehicles can be found to transport them the 18 miles to Haikou. The small railway from the city to the port was shut down in 1970 as being too inefficient. There are no plans to replace it. About 20 percent of Xiuying's freight is reloaded onto coastal vessels and shipped to one of Hainan's seven smaller ports, which together handle almost 5 million tons of cargo per year.

A major expansion of Xiuying is about to begin. Hainan officials are looking for $2 million in foreign investment, but port officials told me that development of Haikou's harbor will take place with or without foreign investment. The expansion will include a pier extended to one of two new 10,000-dwt berths. Currently the berths are 3 to 5 meters deep at low tide. After port expansion they will be 9 meters deep. In addition, two new 5,000-dwt berths will also be constructed, and storage space increased to 30,000 square meters.

Sanya. Hainan officials hope that offshore oil development will mean major expansion of Sanya's facilities. The port presently specializes in exporting salt from Yinggehai, and handles a mere 410,000 tons of freight a year. Only one of its three piers is capable of handling 5,000-dwt vessels. One expert estimates that at least $100 million would be needed to convert Sanya (also called Yaxian) into a supply base for nearby offshore operations (*see The CBR* March–April 1981, pp. 8–19). Currently Sanya warehouses contain some parts and equipment for the Nanhai II, but it is unlikely that facilities on Hainan's southern tip will go beyond providing a refueling station and emergency base, unless ARCO makes a big strike in nearby waters.

ARCO officials have visited Sanya a number of times to size up its potential, and Mobil Oil has sent at least three investigative teams to Hainan to explore possibilities for land-based petroleum operations and other cooperative businesses.

Despite the importance of offshore petroleum development to the local economy, Hainan authorities do not appear to have much knowledge about, or influence over, these decisions. When the author recently asked local officials about their plans to develop an off-shore rear supply base, they responded, "Oh, those decisions are all being made up in Guangzhou. You'd better ask them."

Basuo. Hainan's second-largest port after Xiuying is Basuo (also called Dongfang) on the western tip of the island. Basuo specializes in minerals—mainly iron ore—and lumber. Its four berths include a 5,000-dwt berth for freighters, and two berths over 10,000 dwt. One of these is a 20,000-dwt berth for iron ore vessels. Basuo annually handles more than 3 million tons of freight, and reportedly is visited each year by more than 200 ships of foreign registry. Its storage capacity exceeds 40,000 square meters. ☒

The author interviewed Hainan trade officials, and visited Haikou's Xiuying port in September 1982.

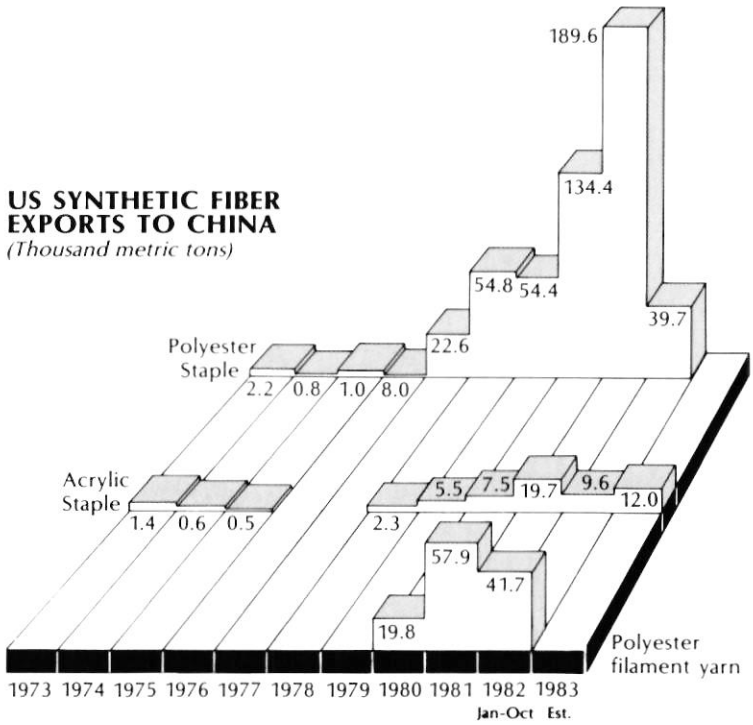
The Polyester Debacle

US companies could never have anticipated a total cut-off—but then again any hint of trouble was concealed from them.

Martin Weil

Nothing better highlights the volatility and uncertainty of trading with China than polyester. Polyester traders in 1972 were among the earliest of all US businesspeople to deal with China. By 1976, US exports of polyester staple (short fibers) for the textile industry had become an important item in bilateral trade. A tremendous expansion followed between 1979 and 1981, with sales of polyester staple, texturized filament yarn, and cloth skyrocketing to over $460 million in 1981. That year alone, China purchased about 16 percent of total US staple output.

US SYNTHETIC FIBER EXPORTS TO CHINA
(Thousand metric tons)



But without warning, China halted its polyester purchases from the US (and the rest of the world) in 1982, accepting only deliveries for materials bought earlier. And there are strong indications that in 1983 as well, China may buy no polyester.

China has embarked on an ambitious program to develop domestic polyester production, but the import cutoff was not the result of a sudden leap in domestic output. The real reason was the accumulation of massive stockpiles, which forced sudden changes in both foreign trade policy and textile production policy. The ultimate causes of the stockpiling and the changes are numerous and complex. They include:

▶ The growing power of Chinese consumers and the Textile Ministry's failure to predict their tastes.

▶ The irrationality and rigidity of China's pricing system.

▶ The economic reforms of 1979–1980, which gave enterprises incentives to switch to profitable products like polyester apparel.

▶ The new autonomy given to localities to engage in foreign trade, and the backlash against this autonomy at the end of 1981.

Obviously, the quirks of a command economy, which responds primarily to bureaucrats' orders, had something to do with the polyester debacle. But paradoxically, the halfway attempts to introduce more market-type features into the economy seem to have played an equally important role.

The Early Years

Historically, China has been overwhelmingly dependent on cotton as a source of textile fibers, using it even for heavy winter jackets. The synthetic fiber industry began with the development of rayon cellulosic fiber factories, first during the Japanese occupation, and subsequently with East European assistance in the 1950s. The largest rayon plant, located in Baoding, probably has a capacity of only several tens of thousands of tons, and total production has probably never topped 100,000 tons—a drop in the bucket compared with cotton.

In the 1960s, China began to turn to the West for the fibers derived from hydrocarbons which had been developed there in the 1940s and 1950s. As early as 1965, two thousand tons of polyester staple were purchased from Japan. But domestic development of polyester was still ignored, and polyvinyl alcohol, or "vinylon" fibers were developed as the cotton substitute. Vinylon fibers, also known as the "poor man's polyester," are cheaper to produce, but inferior in quality. They have never caught on in the US as a consumer textile fiber, but Japan developed them, and sold China two plants with a combined capacity of about 30,000 tons. One small acrylic and polypropylene fiber plant along with upstream chemical facilities were also purchased for the Lanzhou petrochemical complex. But all the added capacity was still minute in comparison with cotton output.

In the early 1970s, China began to pursue synthetic fibers, polyester in

particular, more vigorously. Cotton production, it seemed at the time, was constrained by the limits of arable land, and the priority attached to growing grain. (Recent increases in cotton output show this was an overly pessimistic view.) At the same time, China's oil industry was in its spectacular growth phase, and seemed to provide the obvious raw material for expanding clothing production.

Textile planners were attracted by polyester's known superiority over vinylon as a cotton substitute in terms of ease of care, dyability, and durability. And petroleum interests, which were well-represented in a planning apparatus that was headed by former Petroleum Minister and Daqing hero Yu Qiuli, were ready and eager to take on the task of building the more complicated petrochemical plants needed to produce polyester.

Two additional vinylon plants, as well as an acrylic and a nylon facility, were bought from the West in 1973, yet the bulk of new capacity went to polyester. Contracts were signed in 1973 and 1974 with Japanese and European interests for three polyester-chip plants, along with assorted upstream facilities, with capacity totaling about 200,000 tons for three new petrochemical complexes in Liaoyang, Liaoning Province, Tianjin, and the Shanghai suburb of Jinshan. For the most part, China elected to build the staple fiber spinning facilities for these plants itself. No textured filament yarn capacity was included.

At the same time, China began increasing its foreign polyester staple purchases from about 7,000 tons in 1971 to over 60,000 in 1975, with Japan as the main supplier. The US broke into the market at this time, but only sold an average of 1,000–2,000 tons per year during 1973–1975.

The Polyester Explosion

In the post-Mao years, the full ambitions of synthetic fiber planners became clear. The original 1978–1985 plan unveiled by then-Chairman Hua Guofeng called for chemical fiber to rise from 10 to 40 percent of total inputs to the textile industry by 1985, and probably envisaged polyester accounting for about two-thirds of chemical fiber output, or about 1 million tons.

As money became available, the Yanshan Petrochemical complex purchased a 40,000-ton polyester-chip plant from Zimmer in 1977. Then, in the 1978 wave of giant turnkey purchases, China signed contracts for two new polyester-chip plants with capacities of 200,000 tons and 540,000 tons, to be located respectively at Jinshan and at Yizheng, near Nanjing. The planned capacity for the second plant is the largest in the world. Including the associated upstream facilities, China spent close to $1 billion on polyester production capacity at this time.

At the same time, polyester staple purchases from the US rose steadily from about 8,000 tons in 1976 to 55,000 tons in 1978–1979, reaching and then surpassing the Japanese level. Overall trading was rising, and the post-Mao leadership was willing to spend more on consumer goods than it had previously. Another factor must have been the failure of the imported plants to come on stream as scheduled. Only the 25,000-ton plant in Jinshan was in operation by 1979. The staple imports would have been higher still by 1979, except that China began buying chips to convert into staple and filament fiber on its own.

Changing consumer preferences eventually brought the boom to an abrupt halt. Quite simply, consumers were unwilling to buy the large amounts of poly-cotton cloth and texturized woven cloth that textile enterprises had decreed they should enjoy.

But the biggest boom of all was in 1980–1981. China's polyester staple imports increased by a 180 percent margin from about 125,000 tons in 1979, to an estimated 350,000 tons in 1981, with the US share rising from 55,000 to 190,000 tons. In 1981, China purchased nearly 10 percent of the the world's polyester staple output. Meanwhile, domestic staple output was increasing at a more modest, but nonetheless impressive rate, achieving 125,000 tons in 1981.

Suddenly there was a rush to buy textured filament yarn, which has a different look and feel than staple, and resembles silk more than cotton. Imports rose from close to zero in 1979 to about 125,000 tons in 1981—including 58,000 tons from the US, or 10 percent of US output. Even texturized woven cloth was purchased, with US sales reaching $30 million.

China was turning to most of the world's polyester producers, in addition to traditional Japanese and American suppliers. Taiwan, and to some extent South Korea, sold considerable volumes through Hong Kong and Japanese middlemen. Even Malaysian, Thai, Mexican, and Brazilian polyester found its way to China.

It was becoming obvious that no coherent central plan was governing the trade. Polyester previously had been purchased only according to the state plan by the head office of CHINATEX (the textiles trading company under what is now the Ministry of Foreign Economic Relations and Trade). But beginning in 1980, provincial governments, particularly Shanghai and Guangdong, began to buy on their own, using foreign exchange they were permitted to retain under the new foreign trade reforms. As much as 25 percent of imported staple began to go through their hands, and possibly a higher percentage of the texturized filament yarn. In some cases, the purchasing provinces sold at higher prices to interior provinces that had no direct access to the outside, according to charges printed last year in the Hong Kong magazine *Ming Pao*.

US companies, at least as far as staple was concerned, continued to do business almost solely with the CHINATEX head office, which strongly opposed the moves of the provinces, but could not stop them. Much of the Asian materials, on the other hand, went to the local authorities.

The 'Profit Motive' Launches a Boom

The main reason everybody was so eager to buy polyester, aside from the desire to export more and improve living standards, was its profitability. Polyester staple in China typically is blended with 33 percent cotton and spun into yarn in mills which can handle either material interchangeably. The price of poly-cotton

Polyester's Growing Pains

Polyester represents one of China's most ambitious attempts to build a world-class industry using Western technology. At the same time, it graphically illustrates some of the major difficulties encountered in trying to put the technology to use, and the gap between expectations and results.

Today China theoretically has the capacity to produce about 235,000 tons of polyester chips, or raw polyester, a substantial capacity that is probably only half-utilized. An additional 700,000 tons of capacity is under construction, but it is likely to come on stream only in the second half of the 1980s.

The reasons for the slow and uneven performance of the polyester industry varies from plant to plant, but some of the problems are fairly widespread. To name a few:

Construction Delays

Of the three complexes contracted for in the early 1970s, only one—a 25,000-tons-per-year chips-staple finishing combination at Jinshan near Shanghai supplied by the Japanese companies, Toray and Teijin—was completed within five years. The other two, located in Tianjin and Liaoyang, were officially commissioned only in 1981. They are still operating at full capacity. (Outsiders estimate 70 percent at Liaoyang, and 40 percent at Tianjin.) Aside from the delays, these plants were probably affected by the political turmoil inspired by the 'Gang of Four'. The 1976 earthquake must have affected the Tianjin plant. Rumors undoubtedly originating with the Chinese suggest that inferior technology selected for Liaoyang from a French consortium took its toll there. The 40,000-ton plant purchased from Zimmer for the Yanshan petrochemical complex in 1977 must still use imported raw material, and is also not running at capacity.

The new 540,000-ton, Zimmer-equipped plant at Yizheng near Nanjing was one of the prime victims of the 1979 readjustment. Limited oil supplies and infrastructure problems would have slowed it down even in the absence of a policy decision to do so. Only 180,000 tons of its capacity is currently targeted to be on stream by 1985. Because of delays in the construction of its upstream feedstocks, it may have to rely on imports at first. Full capacity probably will not be achieved until the end of the decade, observers believe. Even the new 200,000-ton plant purchased from Kanebo in 1978 for Jinshan, which was never halted during readjustment, will take seven years to complete.

Bureaucratic Snafus

Control of polyester production has been part of larger struggles between the ministries of Chemicals, Textiles, and to some extent Petroleum, over the petrochemicals turf. Polyester polymer itself, as well as downstream spinning plants, are officially the responsibility of the Ministry of Textiles. Yet somehow, the Ministry of Chemicals managed to convince the State Council to give it the 40,000-ton Zimmer polymer plant at Yanshan.

Control over upstream feedstocks is even less clearcut. In 1978, the Chemicals Ministry was theoretically given the prime responsibility for Dimethylterephthalate (DMT), and terephthalic acid (TPA), either of which, when mixed with ethylene glycol, yields polyester. It will own the Nanjing TPA plant, and probably the ethylene glycol plants that will feed Yizheng. But in practice, the Textiles Ministry controls the DMT and TPA at Shanghai, Tianjin, and Liaoyang, as a result of decisions made years earlier.

There are reasons why this is of more than academic interest. For one thing, squabbles between the ministries have undoubtedly delayed projects. More importantly, bureaucratic infighting has provided a strong incentive to build completely integrated facilities to make all the upstream petrochemical derivatives, along with the polyester. Perhaps the only way the Textiles Ministry could gain control of upstream facilities was to have these facilities serve polyester production only. Thus, the upstream facility to produce DMT or TPA, or the aromatics products from which DMT or TPA are made, have exactly enough capacity to produce the desired amount of polyester needed by the Textile Ministry. The most extreme case of this is Liaoyang, where all products from naphtha to polyester are made in exact balance in a self-contained facility. Tianjin and Jinshan also are completely integrated aromatics-DMT/TPA-polyester facilities.

What this means is that when one plant in the chain experiences difficulties, the whole nexus slows down. This has already happened at Liaoyang, for example, when an explosion put the ethylene glycol unit out of action.

In the US, textile fiber companies will usually produce the polyester polymer and fiber, but purchase the intermediates like TPA and ethylene glycol from a petrochemicals company such as Shell or Amoco. But in China the interministerial transfer of goods under the bureaucratic allocation system is fraught with very real risks. Allocation plans change with the whims of higher ups, and a supplier in another ministry cannot always be relied on, particularly if its ministry does not place high priority on meeting the needs of the rival ministry.

Domestic Equipment Comes First

Though the Ministry of Textiles has been eager to buy foreign petrochemical equipment, it has proven reluctant to buy machinery it thinks it can make itself. In the case of polyester, this means spinning and stretching equipment that turns chips into staple fibers.

The ministry gained some knowledge of spinning technology through its work with vinylon and rayon in the 1950s and 1960s. At most of its polymer plants, the ministry has insisted on using mainly Chinese equipment—100 percent in the case of Liaoyang, and half at Tianjin. A substantial proportion of chips are sent for spinning to smaller facilities under a wide variety of government

jurisdictions. Provincial pressures for a piece of the polyester action is undoubtedly one reason why small-scale domestic technology is used.

But the truth is that Chinese technology has proved inadequate. The problem is worst at Tianjin, where the Chinese first experimented with "direct spinning," whereby hot polymer is put directly into spinning facilities to save energy. The half of the plant using Chinese equipment is reported almost totally inoperative, because of stretching of the staple. Low-capacity Chinese plants, which are at least operating, tend to produce inferior-quality staple, in terms of color, dyability, and strength. Productivity of the equipment is much lower, as well.

The key question is whether the situation will improve at the plants under construction at Jinshan and Yizheng, both of which will use the direct-spinning process. At Yizheng, the Chinese are buying a small part of the spinning capacity from Toyobo in Japan, and building the rest themselves. Negotiations are in full swing to license the technology for key components such as spinarets from foreign equipment suppliers. At Jinshan, the Chinese are apparently buying key components for staple-spinning plants from Japanese suppliers. A $15-million contract was reported in 1982.

Although the outlook is somewhat better for these plants than for earlier ones, a number of foreign observers still predict bottlenecks in spinning, which is, ironically, the cheapest part of polyester production. About half of Jinshan output, for example, will still be sent out to small, antiquated plants for spinning.

In polyester-filament spinning, unlike staple, the Chinese are more willing to buy abroad. A 10,000-ton plant was purchased from Japan for Jinshan; Jiangsu and Guangdong provinces, apparently on their own authority, bought two 5,000-ton plants in 1982 from Zimmer and Elms-Inventa of Switzerland.

Compared with Taiwan and South Korea, China has been somewhat slow to absorb polyester technology. Nevertheless, some of the problems encountered are merely the growing pains of a polyester industry that is destined in the not-too-distant future to be the largest in the world.

—Martin Weil

cloth, however, historically has been fixed at levels 2–3 times that of cotton cloth (which, according to Chinese citizen reports, runs approximately 6–8 yuan per meter), because of high initial costs of early Chinese polyester plants. Therefore, it was much more profitable in 1980 and 1981 for mills to produce poly-cotton yarn and cloth than pure cotton. Cloth made of polyester textured filament yarn, priced at 5–6 times the cost of cotton cloth, was even more profitable.

The profit motive probably had the greatest impact on units which were allowed, under the 1979 reforms, to retain some of their earnings. While the intention was to increase efficiency and motivation, the effect was all too often to simply shift the product mix toward items that had high fixed prices. This was exactly what had happened with poly-cotton cloth, and with poly-textured-yarn cloth. The state plan in textiles for all intents and purposes broke down, as local textile bureaus arbitrarily increased their proportion of polyester output.

The failure to deal frankly with the problem, rather than the cutoffs, is to many the more unpleasant legacy. It would probably improve China's relations with foreign companies if Chinese trade organizations were more open about internal debates and problems.

A general scramble for polyester ensued. Bureaus which did not trust the central government to allocate them an adequate amount went to their provincial governments. There were probably cases of bureaus going to both central and local governments for the same need, with both sources coming through. Foreign polyester was particularly sought-after, not only because of domestic shortages, but also because of its superior quality and, according to one trade source, the fact that it was actually cheaper for mills to buy foreign polyester than domestic at that time.

China published a figure of "over 2 billion" square meters of poly-cotton cloth output in 1980, already about one-seventh of cotton cloth output. This would account for about two-thirds of the estimated total supply of 300,000 tons of polyester staple that year, with the rest going to poly-rayon and other blends, as well as for some industrial uses such as bicycle tires. No such figure is available for 1981, but it could have been as much as 50 percent higher. Despite rising exports, the vast majority was for the profitable home market.

The Bust

Changing consumer preferences eventually brought the boom to an abrupt halt. Quite simply, consumers were unwilling to buy the large amounts of poly-cotton cloth and texturized woven cloth (from filament yarn) that textile enterprises had decreed they should enjoy. The State Economic Commission indicated in early 1982 that unsold stockpiles of poly-cotton cloth totaled 1.8 billion square meters, almost equal to the country's total 1980 output. As much as 800 million square meters, or 25–30 percent of 1982 poly-cotton cloth output found no market, and the situation was probably worse for other forms of polyester.

Trade sources suggest that the ease of care offered by poly-cotton as compared with cotton is not so important to Chinese, who possess few washing machines and driers. Nor are Chinese consumers probably aware of polyester's greater durability.

But the most important reason for consumer rejection of polyester is exactly the same one that created the incentives to produce it: price. Poly-cotton cloth often is printed and dyed in the same patterns as cotton cloth, and since the two look identical, there is no prestige to be gained from wearing the poly-cotton products that cost two or three times more.

Visitors have noted that there was a time when double-knit or woven apparel made from 100 percent texturized filament yarn had great appeal in big cities like Shanghai and Guangzhou. But after the initial fad wore off, the average consumer was apparently unwilling to pay the high price, or to put up with a texturized filament material that is very uncom-

fortable in hot weather.

Sales fell even though polyester, unlike cotton, is not rationed. (The cotton ration is reportedly 3–7 meters per year, depending on the region and climate.) The growing stockpiles may have jolted the Textiles Ministry into the realization that for the first time in PRC history, it does not have a monopoly on the consumer yuan; no longer will every good it puts on the market automatically be snapped up. In all big Chinese cities today, there is a wide variety of goods to choose from, including formerly unavailable luxuries such as TVs, watches, and cassette-recorders.

Although it often happens that Chinese factories for years will go on producing unsaleable products, this has not been the case with polyester. Trade sources report that the Textile Ministry ran into cash flow problems by 1982, suggesting that the Ministry of Commerce was refusing to buy polyester products.

The central government intervened at this point to deal with the gigantic polyester surplus. One of its first moves was to take away the power of local governments to buy polyester. At the same time, the CHINATEX head office was ordered to suspend all foreign purchases. The suspension lasted the whole year. Some filament yarn was bought from Japan, but this is believed to have been for industrial, rather than apparel use. The government also enforced production cutbacks of polyester cloth.

Disposing of the stockpiled goods became a major preoccupation. Some poly-cotton cloth was sold abroad in 1982. This inspired a dumping petition in the US by the domestic industry, and the exports stopped.

More poly-cotton apparel was exported, as well. Synthetic apparel exports to the US probably rose 125 percent in 1982. But these, at most, could have accounted for about 10 percent of China's stockpiled cloth. New US restrictions on Chinese textile exports make that kind of growth very unlikely in the future.

Probably the only move that could really break the polyester log-jam would be a price reduction. A downward adjustment was in fact made by the State Council in 1981, but it was for an average of only .66 yuan per meter which, for a product that costs as much as 8 yuan per meter, clearly does not go far enough. Trade sources believe the Textiles Ministry is lobbying hard for further cuts, which are by no means guaranteed. The central planners are naturally cautious about major price changes for fear that they will ripple throughout the economy and produce chaos.

No Imports in 1983

For the time being, Beijing has decided to limit polyester staple consumption somewhere near 1980 levels, or possibly even lower. The fourth consecutive record cotton harvest in 1982 makes this an attractive option, as mills can simply switch back to cotton cloth. The cotton crop in 1982 rose 11 percent to 3.3 million tons.

The Textiles Ministry has told the National Council that there will be no need for new imported polyester staple in 1983.

CHINATEX has been advertising to US producers that it will begin negotiations in the second or third

The (Relatively) Stable Acrylic Fibers Market

After polyester, acrylic staple is America's highest volume synthetic fiber export to China. Acrylic sales also rose substantially during 1980 and 1981 (although not to nearly the level of polyester), reaching 20,000 tons worth $29 million in 1981, or probably about 25–30 percent of China's total purchases.

Unlike polyester, however, acrylic sales have continued in 1982, if at somewhat lower levels. The Chinese now estimate their annual import needs at about 45,000 tons, traders report. The US should continue to sell a major share, unless the Chinese decide to pressure the US government in bilateral textile negotiations by cutting off purchases.

One reason why acrylic did not spin out of control, as polyester did, is that its end use is quite different. Acrylic is sold mainly in the form of yarn, often blended with wool, for knitting blankets or sweaters. Blankets do not appear to have been a major item in China's consumer revolution. And the Chinese textile industry historically has been oriented towards weaving, rather than knitting. Also, since acrylics are priced lower than wool, which is quite scarce, there probably were not the same incentives for producers to switch from wool to acrylic as there were from cotton to polyester.

US acrylic exports consist largely of low denier, light materials. According to one trade source, they are allocated to "government use," which includes, among other things, thermal underwear for People's Liberation Army soldiers stationed in the north. Such a market would not appear to be subject to such sudden changes.

Domestic acrylic production is centered mainly around the 50,000-ton acrylonitrile plant imported from Japan in 1973 for Jinshan, which is operating over capacity, according to trade sources. The raw acrylonitrile is polymerized and spun into staple fiber at another plant in the complex, a copy of an 8,000-ton unit purchased from England for the Lanzhou Petrochemical Complex in the 1960s.

In addition to the facilities at Lanzhou and Jinshan, there are about six very small acrylonitrile plants scattered around the country, including sites at Maoming and Daqing. Most of these are probably not operating to capacity, and total output probably does not exceed 10,000–20,000 tons. There may well be a number of small spinning plants scattered around the country, as with polyester. The quality of China's acrylic staple reportedly is not up to international standards.

New additions to acrylonitrile capacity center around Daqing, where a 50,000-ton complex is planned in the near future. The fact that this is a Petroleum Ministry complex probably does not sit well with the Textiles Ministry. As for acrylic staple spinning, the Chinese are seriously considering purchasing a used 30,000-ton facility from Kanebo of Japan, according to a report in the *Japan Economic Journal*. The company is no longer competitive, and wants to get out of the business. If and when these additions are made, China's acrylic imports could decrease.—MW

quarter of 1983 for new staple purchases. (No mention is made of texturized filament yarn, which is generally believed to be more overstocked than staple.) This is not necessarily inconsistent with the ministry's statements, in that deliveries on new contracts might not reach China until 1984. But CHINATEX's statements to companies in late 1982 that staple purchases will stabilize at around 200,000 tons from all sources starting around 1984 must be taken with a grain of salt.

CHINATEX does not make the purchase decisions; it only implements them. It is in CHINATEX's interests to reassure jittery foreign suppliers that the market is accessible and stabilized. CHINATEX may also be motivated by the desire to make it appear that the US has something to lose if China decides to retaliate against hard-line US tactics in bilateral textile negotiations (see *The CBR* Nov.–Dec. 1982, p. 31) by cutting back on textile fiber purchases from the US.

The status of the Yizheng project near Nanjing is a more solid indication of the uncertain nature of long-term polyester planning. Only one-third of its projected 540,000 tons of capacity is being built, though all the equipment has been paid for. According to at least one trade source, a major reason is insufficient projected demand.

China and US Suppliers

The lessons of the polyester fiasco for Western companies is that any number of factors, which can be very difficult for the outsider to spot, can create sudden, major changes in the China business environment. Most of the companies involved suspected that the 1981 polyester-buying patterns were unusual, and that decreases were likely in 1982. But none of them anticipated the total cutoff.

For the two largest companies supplying polyester to China, Celanese and Dupont, the cutoff has contributed to the idling of about 25–30 percent of staple production capacity, and numerous layoffs. As these were not planned reductions, the costs incurred are greater.

The companies are not, of course, unwilling to sell to China again when the opportunity arises. But it is quite possible that they will take harder lines on price, and that they will be more reluctant to commit as high a proportion of production capacity to China. As one company executive points out, CHINATEX will not be able to go out and immediately buy the quantities purchased in 1981, if only because it will take time to crank up the capacity. He points out that it would be risky to add new capacity solely to fill Chinese orders.

To have anticipated the halt in purchases would have required a fairly sophisticated understanding of internal Chinese economic and bureaucratic dynamics. But CHINATEX made little effort to clue the companies into what was going on. (This is all the more ironic since US firms had tried to play by CHINATEX rules by not selling to the provinces.) Indeed, there was apparently never an open statement that purchases would be cut off for 1982—just a request to spread deliveries contracted for in late 1981 over a constantly lengthening period of time.

China's Worldwide Imports of Polyester Staple

	Thousand metric tons imported	US share
1972	18.4	0
1973	28.0	7.9
1974	48.1	1.7
1975	67.3	1.5
1976	94.2	8.5
1977	141.7	15.9
1978	179.7	30.5
1979	125.8	43.2
1980	251.0	53.8
1981	330–350	54–57

SOURCES: US and Chinese government statistics and private company estimates.

The failure to level, rather than the cutoffs, is to many the most unpleasant legacy. The phenomenon is remarkably similar to the suspension of complete plant contracts with Europe and Japan (for polyester production, among other commodities), which happened without warning or explanation. In both cases, internal Chinese stresses and strains were responsible for the abrupt turnarounds, but the Chinese organizations responsible for dealing with the outside world did their best to avoid talking about them.

The desire to conceal the full extent of internal disequilibrium and debate is understandable. It is also quite possible that in a society where information is provided on a need-to-know basis if at all, CHINATEX, like TECHIMPORT in 1981, was not aware of all the dynamics behind the policy it was executing.

It would probably improve China's relations with foreign companies if Chinese trade organizations were more open about internal debates and problems. But whether they are or not, it is almost inevitable that internal problems will be converted into international ones, as happened with polyester, and that companies will continue to be buffeted by China's internal changes.

POSTSCRIPT: On January 17, the Chinese State Council reduced the price of polyester and other synthetic fibers and fabrics by an average of 20–30 percent, and raised the price of cotton textiles by 20 percent. Acrylic yarn and flannel, and even nylon socks and stockings, are among the items that are now cheaper. Thus, the price of polyester fabric will drop to an average of ¥4.2 per meter ($2.20), a level that is just 40 percent above the price of cotton. The previous ratio, according to New China News Agency, was 2.4:1.

The new 1.4:1 ratio, industry experts point out, is quite in line with polyester-to-cotton price ratios in developing countries with market economies. Even more importantly, the price change indicates that Beijing no longer considers price adjustments taboo, even when it means radically altering the prices Chinese consumers must pay for important consumer goods such as cotton and polyester fabrics. Observers believe that a significant consumer shift toward polyester is likely, which could conceivably lead to a quicker resumption of foreign purchases than is now planned.

It may not be entirely accidental that the price increase coincided with the deadlock of US–China textile agreement negotiations. The negotiations provide ample proof for PRC leaders that their synthetic fiber exports will be sharply limited, and that the only solution to the polyester problem lies at home. ₹

CORRECTION

Page 42 of the November–December 1982 *CBR* incorrectly states that China purchased one French Mirage 2000. An agreement to purchase or jointly produce Mirage 2000 jets in China has yet to be concluded.

HAINAN

The country's least developed foreign investment zone is perhaps the most eager to catch up.

Christopher M. Clarke

Hainan Island is a veritable treasure trove of business opportunities. Roughly the size of Taiwan, Hainan has only one-third as many inhabitants and generates only a fraction of Taiwan's economic activity. A former victim of neglect, interference, and irrational government policy, the island is now embarking on a major development program which Hainan officials hope will build on the island's natural advantages.

Foreign Trade and Investment

In the effort to fuel rapid economic development, national and provincial officials have turned the island into a special economic zone (SEZ) in all but name. In some respects, Hainan's investment incentives exceed even those of Shenzhen or Zhuhai. Yet the opportunities for investment and trade on Hainan remain relatively unexplored by Western companies. Of some 100 foreign delegations to Hainan since 1979, only about a dozen were American.

In July 1979, the State Council, recognizing Hainan's unique geographical, climatological, and economic circumstances, granted the island expanded authority over investment policy. After further discussion by provincial leaders in Guangzhou, it was announced in late 1981 that Hainan officials could approve joint ventures or foreign investment projects which involve no borrowing from the central government, require less than $5 million in direct investment, do not upset "the balanced supply of energy and other raw materials," and have a duration of 15 years or less. Profit taxes on foreign enterprises will be the same as in the SEZs—15 percent. But Hainan is willing to take a smaller equity position in foreign investments, or accept a smaller profit share, in order to give the foreign side a somewhat larger share of an enterprise's profits than would be the case in an SEZ. Low land rates (averaging ¥12–15 per square meter) and labor rates (¥100–120 per month) are offered, and foreign managers reportedly will be given more authority than is customary in SEZs. They have flexibility in recruiting labor, and may renegotiate labor contracts annually, local officials report. The Hainan labor bureau claims it will take responsibility for finding other work for employees dismissed by foreign managers.

In addition, Guangdong Province has authorized Hainan officials to negotiate and approve foreign loans up to $3 million (compared with the limit of $1.5 million in Guangdong's prefectures of Zhanjiang, Foshan, and Shaoguan), and to retain up to 70 percent of its foreign currency earnings.

Hainan officials ultimately hope to attract more than $1 billion in foreign investment. Their original list of 98 projects has been pared down to a core of 34. The sectors cover agriculture, animal husbandry, aquaculture, light industry (especially electronics and rubber), building materials, min-

HAINAN ISLAND

Population (1980):	5,525,200
Of which:	
Rural	4,662,300
Urban	862,900
Workforce	2,596,800

Capital: Haikou; pop: 250,000.

Administrative divisions: Two special administrative districts, 17 counties, 1 municipality, 120 state farms, and 308 communes.

Area: 34,189 square km.; coastline 1,369 km.; Haikou, 218 square km.

Climate: Tropical; average annual temperature 22–26° C; annual average rainfall 1,500–2,000 mm; sunshine 2,000 hours per year.

Foreign trade (1981): $30 million (of which half was with Haikou)

Gross value of industrial output (1980): ¥686.3 million (of which Haikou accounted for 31.2%)

Gross value of agricultural output (1980): ¥1,024.3 million (of which tropical and subtropical crops accounted for 56.6%)

ing, tourism, and transportation.

In order to coordinate this large-scale investment program, the island established the Hainan International Trust and Investment Corporation (HITIC) in March 1980. Capitalized at ¥50 million, HITIC is authorized to absorb foreign investment, sponsor all types of investment projects (it may serve as the Chinese partner), handle credit and trust business, and engage in consulting work. HITIC's largest single investment to date is $7 million in an Overseas Chinese hotel—located in Guangzhou. The company has also invested almost $3 million in four Hainan facilities: a chicken farm, nylon zipper factory, tea bag plant, and prawn farm.

Examples of HITIC's direct involvement in foreign trade are the purchases by the company's foreign trade department in 1981 of motor vehicles for one Hainan company, and 200 tons of American nylon for another.

So far Hainan authorities have reported signing between 25 and 50 letters of intent and contracts with foreign businesses worth $160–180 million. These include 11 agreements in agriculture (valued at $44 million); 13 in industry ($30 million); and a number of tourism projects ($33 million). Of these, 18 projects worth $78 million had received formal approval, with eight already in production.

Agriculture

Hainan Island, China's only year-round tropical area, enjoys abundant sunlight, heat, and rain. Only about 1.24 million hectares are currently under cultivation, out of some 2 million hectares of potential farmland.

Much of the island's farmland unfortunately was converted to rice culture between 1966 and 1979 because of Beijing's insistence that each region of China become self-sufficient in grain. Hainan is much better suited to the cultivation of tropical cash crops than to growing grain. For example, the per-hectare output of rubber or coffee is worth about three times that of wheat, while pepper yields 20–30 times the value of wheat. To encourage the cultivation of valuable tropical crops, the central government is now shipping 225,000 tons of grain to Hainan each year.

In the past two years, some 10,000 hectares of additional farmland have been planted in tropical crops such as rubber, oil palm, lemon grass, coconut, pepper, and pineapple. Plans are underway to extend the cashew fields of Ledong County in the southwest from 13,000 hectares to more than 20,000 hectares. Coffee production, cut from 180,000 tons to 20,000 tons per year during the Cultural Revolution, is now perking up. Coffee cultivation in east and southwest Hainan is increasing.

Oil palm is another major expansion area. The Xinglong Overseas Chinese Farm is conducting experiments on improved palm-growing techniques, and the Singapore Nanhai Plantations Corporation is investing $30–35 million over its 20-year contract on an 8,000-hectare oil palm farm in Chengmai County. The farm has already planted 200,000 young palm trees, and will ultimately produce 28,800 tons of oil per year. The Singapore partner will get 75 percent of the profits through the exportation of 70 percent of the oil produced. Less is known about the British Guthrie Corporation's investment of some £20 million in another Chengmai plantation.

Some 6,700 hectares of Hainan are now planted with pineapple strains imported from Sarawak, Bali, and, more recently, Hawaii. The island, China's number-one pineapple-producing area, also boasts six canning plants with a combined annual output of 20,000–30,000 tons. The American United Brands Corporation visited the island three times in 1981 to discuss cooperative pineapple production for export. Hainan authorities are seeking a partner with $1 million to invest in a 3,300-hectare expansion of a Qiongshan County pineapple farm. Of the expected 15,000 annual tons of canned pineapple, half would be for export. Also grown on Hainan are grapes, papayas, pomegranates, longans, bananas, oranges, and other tropical fruits.

Hainan *hongcha* (black tea) is well known in China for its quality. Much of the 30,000–40,000 tons produced each year comes from minority nationality areas in the central mountains and the south. Island officials plan to triple the current acreage of 6,700 hectares by major reclamation efforts in Dan and Dongfang counties.

Rubber is another major product of Hainan. More than 100 state farms, plus some local farms, produce about 70,000 tons of dry rubber

HAINAN'S FOREIGN TRADE OFFICES

Hainan Special Administrative District Office
Regional Commissioner: Lei Yu
Vice-Commissioners: Yu Xinli (in charge of economic affairs), Zhao Guangju
Subordinate agencies:
Foreign Affairs Office
Deputy Director: Huang Zigui
Economic Administrative Commission
Vice-Chairman: Chen Yinghao
Hainan Administrative District External Economics Committee
Director: Yin Zhongfu
Deputy director: Chu Shi
Economic development bureau:
Director: Liang Dinggui
Deputies: Fu Hongzhu, Lin Biquan, Xie Rongmei
Address: Overseas Chinese Hotel, Haikou
Cable: 2611 HAIKOU
Telephone: 443
Guangzhou liaison office:
Address: 161 Renmin Lu, Guangzhou
Cable: 0046 GUANGZHOU
Telephone: 82292, 88900
Deputy Director: Lu Liang
Hainan Administrative District Foreign Trade Bureau
Vice-President: Liu Yong (Lau Yun)
Administrative Office:
Director: Feng Huanchao
Address: 3/F, Foreign Trade Building, Datong Lu, Haikou
Cable: 1120 HAIKOU
Telephone: 978 x24
Foreign Trade Corporations (under the Hainan Foreign Trade Bureau; all are located in Foreign Trade Building, Datong Lu, Haikou)
CEROILFOODS
Cable: 0589 HAIKOU
Telephone: 340, 348, 539
Sub-Manager: Feng Yucai
CHINATUHSU
Manager: Han Guodong
Three branches: native produce, animal by-products, and tea
Tea Corporation
Deputy Manager: Qiu Kelong
MINMETALS, CHINAPACK, and SINOTRANS also in Haikou.
Hainan International Trust and Investment Corporation
Manager: Li Hanwen
Deputy Manager: Zhou Jinshen
Business Section Director: Wu Yueen
Address: Overseas Chinese Hotel, Haikou
Cable: 0019 HAIKOU
Telephone: 543
Haikou (Xiuying) Port Office (under the Ministry of Communications)
Chairman of Port Office: Shan Huairong
Supervisor of Haikou Port Administration: Feng Erzhou
Chief of Haikou Port Office planning section: Wu Qinggui
Manager, Foreign Ship Agent Company: Chen Jihan

per year, representing about two-thirds of the nation's output. Five factories process the rubber, some of which is shipped to the mainland and some processed locally into bicycle inner tubes, rubber shoes, tubing, and gloves. The further development of rubber-processing industries is a major focus of Hainan's foreign investment effort.

About 1.5 million tons of sugar cane is produced yearly on Hainan, but much room for expansion still exists. Officials are looking for almost $2.4 million in foreign investments to expand three projects in sugar cane farming and refining. The projects involve increasing sugar cane acreage by 17,000 hectares in four counties, and constructing a 2,000-ton-per-year capacity sugar mill. In a separate development, the California Land, Farming, and Animal Husbandry Corporation reportedly has signed a letter of intent to invest in a 3,300-hectare sugar cane farm, complete with refineries, to be located near Lingao City.

Also tagged for development is forestry. Hainan has considerable forest reserves in the mountainous central section of the island, where officials plan to develop rosewood, teak, sandalwood, and other tropical specialty trees for both export and domestic use, and plan to construct a plywood factory.

Animal Husbandry and Aquatic Products

Hainan boasts of extensive range lands exceeding 200,000 hectares and supporting more than 700,000 head of cattle. From 30,000 to 40,000 head of live animals are exported annually, mostly to Hong Kong. An Australian concern is already involved in a cattle ranching venture in Dongfeng County, according to one source. Hainan officials have discussed similar ventures with Japanese and British firms. The California Land, Farming, and Animal Husbandry Corporation has also discussed a cattle-ranching project involving a capital investment of $6 million and the introduction of 1,000–1,500 breeding animals. The ranch, to be set up in Qiongshan County, would open more than 13,000 hectares of range, and would increase sales of live animals to Hong Kong by some 50,000 head per year. Island ranchers have already purchased British and American breeding stock. Beyond improving their herds, however, Hainan authorities wish to dramatically expand slaughtering, tanning, and leather goods manufacturing facilities, as well as meat packing and animal byproducts processing.

Pig raising represents another investment opportunity. At least two American delegations have visited the island to look into pig farming. The PIC Corporation discussed a $2.8 million investment in a Xinglong farm to provide 30,000 pigs per year for Hong Kong tables, and a group of three US concerns visited Hainan in April 1982 to discuss the introduction of swine breeding stock and techniques of artificial insemination. Similarly, joint ventures for raising chickens and ducks have attracted some interest. For example, the Hong Kong Yongli Company has invested $280,000 in a duck-raising compensation trade venture in Wenchang, which will supply 1.2 million ducks per year for sale in Hong Kong. Hainan is now looking for $1 million to build a duck-processing factory which will process more than 2,400 tons of frozen duck and 135 tons of feather and down each year. Forty percent of the factory's output will be exported. In addition, HITIC is investing $1.35 million in a Hainan chicken farm with an unidentified foreign partner.

HAINAN STATISTICS
(metric tons)

Agricultural Output	1981	1982
Grain *(mil.)*	1.19	1.28
Oil crops *(thou.)*	19.53	30.01
Sugar cane *(mil.)*	0.85	1.0
Rubber pieces *(thou.)*	9.60	10.77
Pepper *(mil.)*	1.27	1.64
Pineapple *(mil.)*	12.5	22.5
Cashew nut *(thou.)*	340.5	681.0

Hainan's 1,400-kilometer coastline enfolds more than 25,000 hectares of bays and beaches with abundant marine resources. So far, less than 1,000 hectares are being exploited. In addition, the island contains in excess of 35,000 hectares of freshwater fisheries, most of which is already stocked.

This varied aquatic environment yields rich harvests of pearls, prawns, shrimp, sea cucumbers, oysters, and a wide variety of fish. Several foreign projects are under discussion or are already in operation. The Puqian fishing commune of Wenchang County attracted three Hong Kong companies which together invested $150,000 for fishing vessels. The Hong Kong New World Aquatic Products Company will provide $290,000 in ships and machinery to the Wenchang Fishing Company in exchange for seafood. An American company visited Hainan in November 1981 to discuss the cultivation of spirulina, a type of seaweed. Discussions concerning a saltwater breeding farm in Qiongshan County, and the expansion of pearl cultivation in Lingao and Lingshui counties, are also underway.

Industry and Construction

Hainan industry remains largely underdeveloped. Some 136 enterprises in Haikou form the nucleus of the island's industrial capacity. The city has five rubber factories, as well as plants producing machinery, electric motors, chemicals, farm equipment, electronics, textiles, food products, and handicrafts. Major local products include canned pineapple, coconut candy, bicycle inner tubes, electronic parts, coconut shell carvings, coconut matting, rattan ware, wood furniture, and garments. In 1982, Hainan was the only prefecture in Guangdong Province to show no increase in the value of industrial output. Apparently counting on foreign investment to spur development, island officials are looking for a 9–10 percent growth in industrial output value next year.

So far, relatively little activity has taken place in foreign investment in Hainan's industry, despite the desire on the part of local officials to set up foreign-financed projects in rubber processing and tire manufacturing, among other areas. Only a few foreign processing arrangements making ceiling fans, bicycle parts, and electronic components are already operating. In one venture, Thai investors put up $100,000 in tea bag processing equipment, while HITIC invested $300,000 plus land and labor. The foreign partner will be repaid in tea. Another Thai investor is spending $1 million to build a theater in Haikou. In an interesting twist, this 50–50 joint venture will not remit any profits to Thailand. The Thai partner's profit will be distributed in RMB to Hainan Overseas Chinese—the investor's relatives.

Even more interesting is the agreement between HITIC and the Japa-

nese Marubeni Corporation. Marubeni is providing irrigation and drainage equipment, farm trucks, and chemical fertilizer. It is reportedly being paid back with sugar cane, coffee, cashew nuts, and sesame. The total value of the deal, which required approval by the provincial government, is $4.5 million.

The Haikou Travel Service and a Hong Kong firm have set up a joint venture to purchase $150,000 worth of taxis. How the Hong Kong investor will be repaid is unclear. Similarly, the Japanese Sankishoji Company invested $460,000 in a car and bus repair shop in Haikou. Since this venture will earn no foreign exchange, the Hainan government will foot the foreign currency bill. Other developments include an $820,000 investment by Japanese Overseas Chinese for a cement and brick factory and a $250,000 investment by the Ande Company of Hong Kong (with $1 million from HITIC) to construct a nylon zipper plant in Dingan County.

Tourism

The most interesting investment projects, however, are in tourism. Hainan's beautiful beaches are well known throughout Asia. Two agreements have been reached with the Jingcheng Business Company of Hong Kong, the first involving a foreign investment of $1.1 million to enlarge and modernize the Hainan No. 1 Guesthouse in Haikou. Currently providing only rudimentary accommodations, the guesthouse will be expanded to 46 rooms and the quality of services will be upgraded.

The largest investment project in Hainan is the projected Qiongzhou Binguan (Qiongzhou Hotel). The Jingcheng Company will provide $10 million, while Hainan will provide the site and labor. This jointly managed hotel will be located on the beach a few miles outside of Haikou, and will offer all the modern amenities including air conditioning, horse racing, a rifle range, swimming beach, and yachting. The 300-room international hotel is expected to be completed in early 1984 and, previous rumors notwithstanding, will contain no gambling casino. It is expected that with the inauguration of direct air links to Hong Kong some time next year, the hotel will attract a large Overseas Chinese clientele and serve as an R&R base for oil workers.

Tourist facilities on the island's south shore at Sanya and at the Xinglong hot springs are also under consideration.

Minerals and Mining

One of Hainan's most abundant and least-developed sectors is minerals and mining. The island possesses over 50 minerals, including the highest quality iron ore found in China. Other significant deposits include bauxite, barium, cobalt, copper, crystal, granite, graphite, limestone, marble, molybdenum, niobium, porcelain clay, potash feldspar, quartzite, quartz sand, salt, tantalum, tin, titanium, tungsten, and zirconium. At present, Hainan's mining efforts center around iron and titanium exploitation. Iron ore is shipped to major mainland works, and some 25,000 tons per year are exported to Thailand. One day, a substantial share of the island's iron ore reserves will feed Baoshan's blast furnaces, one US delegation has learned. Approximately 3,000 tons of aluminum were shipped to Hong Kong last year for reexport.

Hainan authorities are particularly eager to attract foreign investors for processing titanium ore and titanium sponge, and to expand a graphite mine in Qionghai County. Hainan is seeking foreign assistance to open quartz, marble, and granite quarries, and a porcelain clay mine.

Hainan Island mines a small amount of low-quality coal, but has about 2.8 billion tons of oil shale and 157 million tons of lignite deposits in western Luxian County. Coal production contributes little to Hainan's electric generation, most of which comes from three major hydroelectric stations at Songtao, Niululing, and Xiaguangba (combined capacity: 50,000 kw). Another 100,000 kw is provided by more than 250 small- and medium-sized stations. Yet only about one-fifth of the island's hydroelectric potential is being tapped. To expand this, a $240 million hydro project at Daguangba is under long-term consideration. High-quality coal for industrial use was formerly imported from Vietnam; now coal is shipped in from Guizhou.

Norwegian, Swedish, and West German firms are studying plans for the expansion of Hainan's lignite mines. Long-range development plans envision the construction of a new port at Yangpu, 90 kilometers west of Haikou, to accommodate ships of up to 50,000 dwt for the export of lignite. This project would cost about $100 million and would open a total of eight new berths of 10,000 dwt or more.

Transportation

Transportation is the weakest link in Hainan's economy. The island has only about 1,400 kilometers of paved roads (compared with almost 9,000 kilometers on Taiwan). Truck transportation is slow and expensive, with all gasoline being brought over from the mainland. Only a few local railroads exist. One links the Shilu Iron Mine at Changjiang to Dongfang (Basuo port). Another runs along the southern coast connecting the Yinggehai salt fields to Sanya harbor. One of Hainan's long-term goals is the construction of a railroad around the island.

Hainan has only one civilian airport, at Haikou, with flights to only Guangzhou and Zhanjiang. Officials plan a 200-meter extension of the runway, and hope to initiate direct links to Hong Kong in 1983, followed later by direct flights to Singapore and Thailand. The Chinese navy operates an airport at Sanya, which is the headquarters for much of China's Tonkin Gulf defense force, including the units assigned to the sensitive Nansha and Xisha islands. For security reasons, the Sanya airport is open to civilian craft on only the most restricted basis. At present, this includes only limited use for helicopter transit and refueling. If the Atlantic Richfield petroleum development zone south of Hainan begins to produce oil in commercial quantities, these facilities may be expanded, but the opening of Sanya air and sea port facilities to extensive civilian and foreign use will undoubtedly be resisted by the navy.

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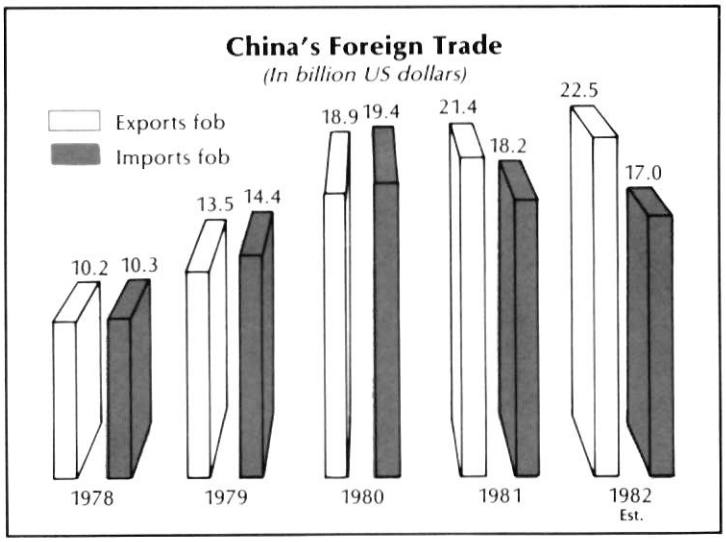
The Benefits of Financial Conservatism

China's remarkable financial position is the envy of its recession-weary trading partners.

China's strong international financial situation puts Beijing in a position to undertake a major import program over the next few years. From virtual balance in 1978, China's current account (the country's total trade in goods and services) registered billion dollar deficits in 1979 and 1980 before scoring consecutive record surpluses in each of the last two years. Foreign exchange reserves, which were reportedly dangerously low in early 1979, are now at record levels. The level of debt outstanding to foreigners doubled between 1978 and 1980 before dropping back in 1981 and 1982.



Trade Policy

Dramatic growth on all fronts

China's strong position in part stems from its consistent emphasis in recent years on boosting exports to generate foreign exchange. Since 1977, China's commodity exports have grown at an average annual rate of more than 25 percent, despite worldwide recession. The service sector has also made significant gains. Earnings from tourism rose from $250 million in 1978 to nearly $800 million in 1981, while income from China's rapidly growing merchant fleet probably more than doubled to about $1 billion. China is also now earning foreign exchange from the export of labor services. Overseas construction projects signed last year alone amounted to $490 million. Since 1979, more than 30,000 Chinese workers have been sent abroad.

China's import policy underwent a dramatic shift in 1979 but has remained unchanged since. In 1978, when national economic policy dictated that the shortest road to modernization was through massive investments in the heavy industrial sector, China's foreign trade corporations went on an unprecedented buying spree. In a matter of months, orders were placed for more than $7 billion worth of Western and Japanese whole-plants. The delivery of machinery and equipment under these contracts was a major factor in the near doubling of import value from $10.3 billion in 1978, to $19.4 billion in 1980. The rise also offset the steady gains in exports and left China with trade deficits of $900 million in 1979, and $429 million the following year.

A complete reversal of economic priorities in early 1979 shifted import emphasis away from heavy industry toward infrastructure, energy, and light industry. A concomitant foreign exchange shortage, brought on in part by the whole-plant signings, led policymakers to order major cutbacks in the import program. Steel purchases dropped immediately and all ongoing negotiations for new plants and equipment were halted. Despite the cutbacks, imports rose during the next two years partly due to the strength of 1978 whole-plant contracts.

In 1981, however, when the program had fully taken effect, imports fell more than a billion dollars, to $18.2 billion. Expenditures for foreign services, including freight and technology, followed basically the same pattern as imports, rising sharply between 1978 and 1980, but showing little growth last year.

Although dwindling foreign exchange reserves were undoubtedly a factor in China's 1978 decision to cut back imports, there has been no shortage of willing foreign lenders. In 1979 alone, Beijing was offered nearly $30 billion in credit, about two-thirds of it at concessionary rates. In keeping with traditionally conservative practices, however, Beijing's gross borrowings probably rose by only about $2 billion in both 1979 and 1980. As a result, at its peak in late 1980, China's total outstanding debt was less than $6 billion, giving Beijing one of the lowest debt–service ratios—8 percent that year—of any country in the world.

The burgeoning trade surplus in 1981 enabled Beijing to build its foreign exchange reserves, and at the same time trim its already small debt. By year-end 1981, foreign exchange reserves stood at $4.8 billion, more than twice the level at the end of 1980. Outstanding foreign debt was down $300 million from 1980 as Bei-

jing repaid commercial loans. The early payment boosted China's debt-service ratio to a high of 11 percent, compared to the usual 7–8 percent.

1983 and Beyond

Major import program in the offing?

The continued steady increase in exports, and another decline in imports, should give China a record $5 billion trade surplus in 1982. The surplus will put China in its strongest international financial position ever. Foreign exchange reserves should exceed $8 billion by year-end, while outstanding foreign debt will decline to the early 1979 level of $3.7 billion. With much of China's outstanding commercial debt retired last year, the debt–service ratio for 1982 should fall below 8 percent.

Historically, whenever their international financial position has strengthened significantly, the Chinese have elected to invest in Western equipment and technology, rather than let their funds lie fallow on financial markets. Although there are indications that this practice will continue, the Chinese are sending mixed signals. Some orders for whole-plants have resumed, and Western firms are being approached to co-operate on major infrastructure and energy-related projects valued in the billions of dollars. The new Five Year Plan, however, projects growth rates for trade that would have China importing only slightly more than it exports by 1985, a trend inconsistent with a major import program.

If a policy decision were made to resume imports of heavy industrial equipment, China's foreign exchange reserves could drop quickly. Thus, Chinese negotiators discussing major projects are looking hard at accompanying financial arrangements. Credit terms are likely to be as important as prices in future contract signings, and government-backed loans will probably be essential for major projects with long pay-back periods. As world interest rates fall, Beijing may add substantially to its commercial debt. Conservative banking practices are likely to prevail, however, in which case borrowing levels would remain well below levels considered desirable by the Western banking community.

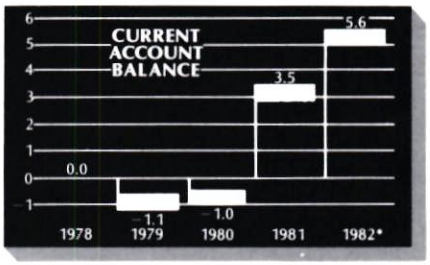
This report was prepared by US Government trade analysts, and released in December by the Overseas Private Investment Corporation.

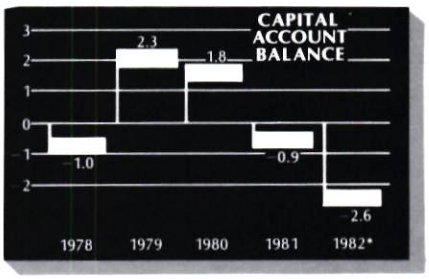
China's Balance of Payments

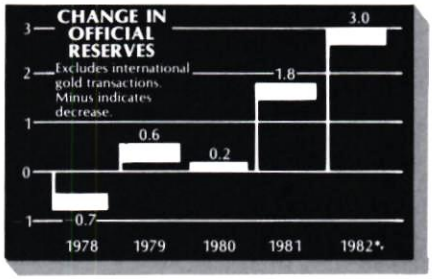
(In billion US dollars)

	1978	1979	1980	1981
Current account	0	−1.1	−1.0	3.5
Trade balance	−0.2	−0.9	−0.4	3.2
Exports (fob)	10.2	13.5	18.9	21.4
Imports (fob)	10.3	14.4	19.4	18.2
Services (Net)	−0.3	−0.7	−1.1	−0.3
Earnings (Total)	1.0	1.7	2.5	3.5
Interest (incl. earnings from HK)	0.2	0.3	0.6	0.8
Tourism	0.3	0.4	0.6	0.8
Labor	0.1	0.2	0.2	0.4
Freight and other	0.4	0.7	1.1	1.5
Expenditures (Total)	−1.4	−2.5	−3.6	−3.8
Technology Payments	−0.2	−0.5	−0.8	−0.4
Interest	−0.2	−0.5	−0.4	−0.6
Freight and other	−1.0	−1.5	−2.4	−2.8
Unrequited transfer (Net)	0.5	0.6	0.6	0.6
Capital account	−1.0	2.3	1.8	−0.9
Direct investment	0	0	0.1	0.3
Government-backed loans	0	0	0.4	0.5
Supplier credits	0.1	0	−0.1	−0.4
Processing and compensation trade arrangements	0	0	0.2	0
IMF trust fund loan	0	0	0	0.4
Commercial, and other	−1.1	2.3	1.2	−1.7
Reserves (Negative sign indicates increase)	0.7	−0.6	−0.2	−1.8
Monetary gold	0	0	0	0.1
Special Drawing Rights	0	0	0.1	0
Total Change in Holdings	0	0	−0.1	−0.2
Counterpart to allocation to SDRs	0	0	0.1	0.1
Reserve position in IMF	0	0	−0.2	0.2
Use of IMF credit	0	0	0	0.5
Foreign exchange assets	0.8	−0.6	−0.1	−2.5
Net errors and omissions	0.3	−0.6	−0.7	−0.8

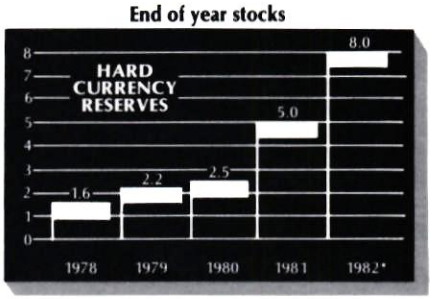
Flows during year

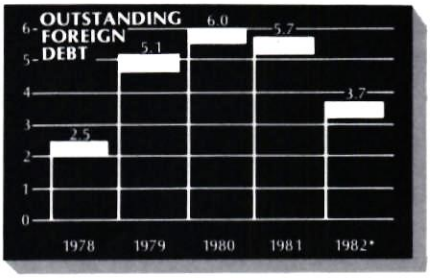


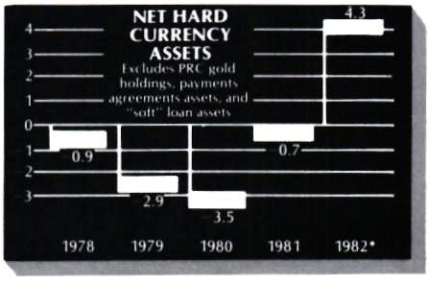




End of year stocks







* 1982 figures projected from half-year data.

Note: Data in billion U.S. dollars.

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Jennifer Little
Research Assistant

The following tables contain recent press reports of business arrangements 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 Jennifer Little.

中外贸易

EXPORTS TO CHINA: 1982 SALES AND NEGOTIATIONS THROUGH DECEMBER 8

Foreign Party/ Chinese Party	Product/Value/ Date Reported
Agricultural Commodities	
(Bangladesh)	248,400 bales of raw jute. $13.8 million (308.6 million taka). 8/19/82.
(France)	875,000 tons of wheat (700,000 tons to be covered by a $170 million loan). 8/22/82.
(Brazil)	1,000 tons of cocoa. $1.5 million. 9/4/82.
(Thailand)	500,000 tons of sugar, 100,000 tons of maize, and perhaps 20,000 tons of green mung beans. 9/15/82.
TAT (USA) Corp.	One million board feet of softwood, including 20,000 board feet of California incense cedar for the manufacture of pencils. 10/82.
Bord Bainne (Ireland)	Butter. $1.04 million (£750,000). 10/12/82.
Sealaska Timber Corp. (US)	3 million board feet of round and trimmed logs. 11/82.
(EEC)	800,000 tons of white sugar for shipment in 1982 and 1983. 11/30/82.
Agricultural Technology	
Food and Agricultural Organization of the United Nations	Has approved two water conservancy aid projects for Ningxia and Gansu provinces. $16 million. 10/18/82.
ACIL International Pty. Ltd. and Department of Agriculture (Australia)/Jiangsu Province	Are cooperating on a dairy development project in Dongxin. 10/27/82.
Food and Agricultural Organization of the United Nations	Has signed two protocols to develop the fishery industry in Jiangsu and reforest portions of Shandong and Sichuan. 11/5/82.
Chemicals	
NA (Europe)	300,000 tons of urea. 10/18/82.
Mitsui Toatsu Chemicals Inc., plus others (Japan)/China National Chemicals Import and Export Corp.	Have won orders to supply 54,000 tons of ammonium sulphate and 100,000 tons of urea. $25 million. 10/19/82.
Chemical Plants and Equipment	
Monsanto Co. (US)/ Wu Jing Chemical Works, Shanghai	Have signed a contract for a Prism separators system to recover hydrogen from purge gas. 10/3/82.
Engineering-Science Co. (US); C. Itoh & Co. Inc. and Kubota Ltd. (Japan)/Yanshan Petrochemical General Corp.	Have contracts for engineering, procurement, and construction management services to upgrade air and water pollution control facilities at the complex. 11/15/82.
Machinery	
Sunds Defibrator (US)	Has received orders for a complete medium density fiberboard plant to be constructed in Nancha, and equipment for MDF plants in Beijing, Tianjin, and Shanghai. $14 million. 10/82.
Morehouse Industries Inc. (US)	Have a contract for the sale of high-shear dispensers and automated sand mills used in making coatings for magnetic tape. $366,000. 11/8/82.
Thermo Electron Corp. (US)	Has received orders for equipment for the Jiang Han Rock Drill Plant in Hubei, being built under a license from Hughes Tools. 11/18/82.
Hitachi (Japan)/ Guangzhou Household Electrical Appliances Manufacturing Corp.	Have signed a contract for the supply of refrigerator-making equipment for a factory with an annual production capacity of 50,000. $3.09 million (¥800 million). 11/19/82.
Holset Engineering Co., subsidiary of Cummins Engine Co./ China National Technical Import Corp.	Licensing: Have signed an agreement for manufacturing and application know-how for turbochargers to be built at the Wuxi Engine Works for diesel engines built under Cummins license in Dongqing. 9/82.
Sino-American Economic Development Corp. and Gladix Corp./Guangming Plastic Factory	Joint Venture: Are discussing a project for producing 4 m double axis directional polypropelene film. 10/4/82.
Meiwa Trading Co. Ltd. (Japan)/Dalian International Trust and Investment Corp. and Shenyang Plastics Factory	Leasing: Have signed a contract for the leasing of a plastic extrusion machine production line. 11/1/82.

Medical Equipment

Warner-Lambert Ltd. (US)/Xinhua Medical Apparatus and Instruments Factory	Have signed a letter of intent for the joint production of surgical scissors and forceps. 10/18/82.
MEL, subsidiary of Philips Electronic (UK)/Beijing Medical Equipment Institute and Beijing Economic Development Corp.	Have signed a contract to coproduce six 20MeV medical linear accelerators for cancer treatment. $5 million (£3 million). 11/82.
Physio-Control, subsidiary of Eli Lilly (US)	Has a contract to supply 170 electronic acute cardiac care systems. $12 million. 11/1/82.
Portex Ltd. (UK)/Ministry of Public Health	Licensing: Are negotiating the manufacture of plastic anesthetic equipment in Tianjin. 11/82.

Military Equipment

Vosper Thorneycraft and British Aerospace (UK)	Have signed a contract to refit Chinese navy destroyers with Sea Dart missiles and advanced electronics. $170 million. 11/12/82.

Metals and Minerals

Nippon Light Metal Co. Ltd. (Japan)	Is negotiating to supply 30,000 tons of alumina to the smeltery operating in Guizhou. 10/19/82.

Petroleum

Vetco Offshore Inc., subsidiary of Combustion Engineering (US)	Has sold a complete oil drilling system for use on the Kantan 3. 11/5/82.
Singapore Petroleum Co.	Has been approached by the Chinese about a direct petroleum processing agreement. 11/8/82.
Fitzpatricks (Singapore)/China Nanhai Oil Joint Services Corp.	Joint Venture: Are negotiating a catering contract. 10/15/82.
Jurong Town Corp. (Singapore)/China Nanhai Oil Joint Services Corp.	Joint Venture: Are negotiating a contract for supply bases. 10/15/82.
Halliburton, Hughes Tool, and Dowell Schlumberger (US)/China National Offshore Oil Corp.	Joint Venture: Are finalizing an agreement to provide mud and casing services out of the Zhanjiang supply base. 11/5/82.
Jardine, Matheson & Co. and Dairy Farm Ice & Cold Storage Co. (Hong Kong)/China Nanhai Oil Joint Service Corp.	Joint Venture: Signed a letter of intent in August 1982 to provide daily living services to oil exploration and production facilities off China's southern coast. 11/9/82.

Pharmaceuticals

E.R. Squibb & Sons Inc. (US)/Shanghai Pharmaceutical Industrial Corp.	Joint Venture: Will set up the Sino-American Squibb Pharmaceuticals Ltd. plant to begin production of 20 medical products in 1985. 11/5/82.

Coal

Shell Coal International Ltd. (UK)/China National Coal Development Corp.	Have signed a draft agreement for a feasibility study of the development of the Jining No. 2 Coal Mine, Shandong. 10/29/82.
Mount Sopris Instruments Co. (US)/China National Technical Import and Export Corp.	Have finalized a contract for three complete borehole logging systems and field computers. $2 million. 11/12/82.
Toko Bussan Co. and Mitsui Miike Machinery Co. (Japan)/China National Technical Import Corp.	Have signed a contract for coal loading and unloading equipment for the Shijiusuo Port, Shandong. $42.5 million (¥11 billion). 11/16/82.

Construction Materials and Planning

(Malaysia)	1,000 cu. m. of plywood. $212,000 (500,000 ringgit). 8/23/82.
First National Bank of Chicago, Pan Am, Intercontinental Hotels (US)/Beijing Economic Development Corp.	Are said to be participating in the Changhan Hotel project which will include residential apartments, offices, and a tourist hotel. 10/26/82.
(Kuwait)	Has agreed to lend $25 million to build a wood products plant in Hunan. 11/8/82.
NA (Spain)/Jiawang Ceramic Factory	Joint Venture: Have signed an initial agreement for producing glazed bricks in Xizhou. 10/4/82.
China Trade Co. (Hong Kong)/China Merchant Steam Navigation Co.	Joint Venture: Have begun the construction of a large residential complex in Shekou. 10/17/82.
Fujitec Co. (Japan)/Shenyang City, Liaoning	Joint Venture: Have reached a basic accord to create a joint elevator manufacturing plant called Fujitec China. It will be 60% owned by Fujitec and 40% Chinese. 11/30/82.

Consumer Goods

Magdeburg Brewery Machinery Plant (E. Germany)/Shenyang Brewery	Has sold a beer-bottling production line. 10/25/82.
Asahi Glass Co. (Japan)	Has agreed to export its know-how for black and white picture tube-grade glass bulbs to Shaanxi plant originally designed for color. $3.86 million (¥1 billion). 11/16/82.

Electronics and Electrical Equipment

Pacific Data Services (US)/Qinghua University, Beijing	Are offering data entry services for internal processing by individual companies, as well as conversion to online data. Processed information is then air-freighted to Dallas or Beijing. 9/8/82.
Shinyei Kaisha (Japan)	Will export a film capacitor plant which will produce polypropylene and polyester film capacitors. $772,700 (¥200 million). 10/82.
Hitachi (Japan)	Will ship 200 sample units of the Hitachi thermal recording medium speed facsimile of the HIFAX700 series. 10/1/82.
Nabu Manufacturing Corp. (Canada)	Have an order for 16-bit microcomputers for university use (pending approval of Canadian government). $400,000 (C$500,000). 10/28/82.
Ai Electronics (Japan)	Have a contract for the sale of 108 16-bit microcomputers and peripherals. $2.09 million (¥540 million). 11/1/82.
Matsushita Electrical Industrial Co. Ltd., Matsushita Electric Trading Co. Ltd., Matsushita Battery Industrial Co. Ltd., and Nissho Iwai Co. Ltd. (Japan)/China National Technical Import Corp.	Will resume implementation of a contract to provide technology and equipment for the production of paper plate dry batteries at a plant in Shanghai. 11/1/82.

National Semiconductor Corp. (US)	Joint Venture: Have proposed a semiconductor manufacturing agreement which is awaiting US export license approval. 9/24/82.

Food Processing

Itco (Italy)	Has won a contract to supply a turnkey vegetable oil plant with an annual production capacity of 55,000 mt per year. $10 million. 11/12/82.
Mitsubishi Heavy Industries Ltd. (Japan)/ China National Machinery Import Corp.	Has received orders for bottling equipment. 11/15/82.

Power

Evans Engineering and GP Electronics (UK)/ China General Electric Co.	Have received orders for 13 load controllers in the 5–100 kw range. $35,000 (£20,000). 11/82.

Scientific Instruments

Fisons Scientific Apparatus (UK)	Has received an order for two environmental test cabinets for checking altimeters and aircraft engines. $86,000 (£50,000). 9/29/82.
Nautilus Environmentals (US)/China Ocean Engineering Services	Have signed a contract for the design, technology transfer, and engineering training for a 300-meter saturation diving system. 10/82.
Ealing Beck Ltd. (UK)/ National Institute of Metrology	Has received an order for an optical transfer function system financed by UNESCO. $268,000 (£155,000). 10/27/82.
VG Analytical (UK)/ China National Technical Import Corp.	Have signed a contract for mass spectrometers for universities in China. $3.45 million (£2 million). 11/3/82.
Nicolet Instrument Corp. (US)	Has received orders for instruments from the company's Fourier transform infrared spectrometer product line. $4 million. 11/4/82.
EG&G Princeton Applied Research (US)	Has signed a contract to provide instruments and systems for the study and measurement of obscured electrical signals and lights. $2.6 million. 11/12/82.
EG&G Geometrics (US)/China Nuclear Energy Industry Corp.	Have negotiated a contract to supply two complete airborne systems for magnetic and radiometric geophysical surveys. $7.5 million. 11/12/82.

Shipping

Mitsui Engineering & Shipbuilding Co., Imamura Zosensyo Co., and Kanematsu-Gosho Ltd. (Japan)/ South Sea Offshore Oil Joint Services Co.	Have signed letters of intent to provide eight supply vessels. $31 million. 9/13/82.
British Shipbuilders (UK)/China State Shipbuilding Corp.	Have signed a 5-year agreement to cooperate on the design, construction, and sale of ships. 11/19/82.
Yue Lian Shipyard and Hongkong United Dockyards (HK)/China National Offshore Oil Corporation, South Sea Branch	Have contracted to repair two supply boats. 11/26/82.
Seatrade Group (Hong Kong)/China Ocean Shipping Co.	Have signed an agreement to produce *Maritime China*, a new magazine published in English and Mandarin and devoted to China's sea transportation industries. 12/1/82.
Sin-Hi Offshore Services Ltd., a US–Singapore joint venture/ China South Sea Oil Field Joint Venture Service Corp.	Joint Venture: Plans to form the Zhong Chang Offshore Marine Services Co. to supply vessels for South China Sea exploration. $40–50 million. 11/4/82.

Steel

Nippon Steel Corp. + others (Japan)	1.2 million mt of steel products for shipment during the first half of 1983. 11/2/82.
Japan Steel Works Ltd./China Machine Building International Corp.	Licensing: Have signed a 5-year contract to provide technology for the manufacture of large-sized steel castings and forgings. Will also remodel two Chinese factories. 11/30/82.

Telecommunications

Spar Aerospace Ltd. (Canada)	Has been awarded a contract to modify RCA earth stations located in Beijing and Shanghai. $318,000 (C$396,000). 10/18/82.

Textile Plants and Equipment

Showa Leasing (Hong Kong) Ltd. (Japan)/ Dalian International Trust and Investment Corporation and the Dalian Dyeing and Printing Mill	Leasing: Have signed a contract to lease a set of R-BOX dyeing and printing after-treatment equipment for two years. $614,000 (¥158.99 million). 11/1/82.

Textile Products

NA (Italy)/Ningbo Artificial Leather Plant, Zhejiang	Have signed a letter of intent to produce adhesive bonded fabrics and PVC artificial leather. Total investment $4 million. 10/11/82.

Tourism

Osaka Mitsubishi (Japan) and Transport Engineering Co. (Hong Kong)	Have signed a cooperation agreement with Guangdong officials to build a 150-room hotel in Zhongshan. $5.2 million. 9/29/82.
Club Méditerranée (France)/Ministry of Tourism	Have signed an agreement to facilitate European travel to China. 10/3/82.
Sun's Finance Co. (Hong Kong)/Zhuhai Special Economic Zone Development Co.	Has won approval to build a large resort in Zhuhai. $16.9 million (HK$110 million). 10/10/82.
Xin Gang Co. Ltd. (Hong Kong)/Xinhua Enterprising General Corp.	Joint Venture: Have commenced construction of the Beijing Kulun Hotel. $9.2 million (HK$60 million) in return for the use of 500 rooms for 11 years. 10/17/82.
Wing Ming Enterprise Development Co. Ltd. (Hong Kong)/Shahe Huqiao Enterprises, Guangdong	Joint Venture: Will construct a Shenzhen holiday resort center. $13.8 million (HK$90 million). 10/24/82.
Philippine Airlines and Manila Hotel/ Yancheng Service Development Corp.	Joint Venture: Have signed an agreement to construct a 350-room luxury hotel in Guangzhou. (51% Chinese, 49% Philippine). $60 million. 11/18/82.

Transportation	
Boeing Aircraft Co. (US)/General Administration of Civil Aviation	Sold ten Boeing 737-200 jetliners. $160 million. 11/24/82.
McDonnell Douglas Corp. (US)/General Administration of Civil Aviation	Are negotiating an agreement for two DC-9 planes. $32 million. 10/29/82.
British Airways (UK)	Is discussing the sale of used Trident aircraft. 12/7/82.
Volkswagenwerk AG (W. Germany)/Shanghai Tractor and Automobile Corp. and Bank of China, Shanghai Branch	Joint Venture: Have signed a preliminary agreement to produce VW's Santana mid-size passenger car. A second Shanghai plant will provide VW engines. 12/7/82.

Miscellaneous	
Shelby Williams Industries (US)	Furniture for the White Swan Hotel in Guangzhou. $175,000. 9/3/82.
Jones Lang Wooten (Hong Kong)	Will serve as exclusive leasing consultant for the new China Resources office building in Hong Kong. 9/28/82.
Simon Fraser University (Canada)	Plans to establish two English-language colleges in China. 10/10/82.
(Denmark)	Has signed a protocol with China to jointly establish a medical-biological post-graduate college in Beijing. 10/10/82.
(Japan)	Has extended a grant to China for teaching Japanese in China through television. 10/29/82.
Kyotaru Co. (Japan)/Beijing Hotel	Will exchange know-how on restaurant operation. 11/3/82.

中外贸易

CHINA'S EXPORTS: 1982 SALES AND NEGOTIATIONS THROUGH DECEMBER 8

Foreign Party/ Chinese Party	Product/Value/ Date Reported
Agriculture	
Kaneko Seeds Co. Ltd., Mikado Seed Growers Co. Ltd., Takii & Co., T. Sakata & Co., and Tokita Seed Co., Ltd. (Japan)/China National Seed Corp.	Have signed agreements to import Chinese seeds. 10/4/82.
Dairy Farm (Hong Kong)/Guangdong Overseas Chinese Farming Group and Guangdong Overseas Chinese Enterprise	Have signed a 5-year contract to supply fresh milk from China. $12.3 million (HK$80 million). 10/11/82.
Construction	
(Gabon)	China will aid in the construction of a medical center in Libreville. 10/82.
(Senegal)	China will help build a 60,000 seat sports stadium. 10/82.
(Comoros)	Has signed a contract in which China will help Comoros build a "people's palace." 10/7/82.
Electronics	
AEG-Telefunken (W. Germany)/China National Metals and Minerals Import and Export Corp., Sichuan Branch	Mica paper for insulation. $1.19 million (3 million marks). 11/2/82.
Foreign Aid	
(Nepal)	2,000 mt. of maize. 10/28/82.
(Fiji)	China will help promote rice production in Fiji under a protocol signed 11/22/82.

Foreign Party/ Chinese Party	Product/Value/ Date Reported
Machinery	
(Egypt)	Turbines which simultaneously generate electricity and pump water. 8/4/82.
Carman Tool and Abrasives (US)	Machine tools from Chengdu. 10/18/82.
Fanuc Ltd. (Japan)	A machine center and other numerically controlled machine tools. 10/19/82.
NA	Ten numerical control machine tools. 10/28/82.
Minerals and Metals	
(Japan)	35,215 tons of ferrous scrap during the first half of 1982. 8/20/82.
(Japan)	China may supply uranium. 10/22/82.
(Japan)	12,000 tons of fine tungsten mud. 10/25/82.
Petroleum	
(Thailand)	Is planning to buy 200,000 tons of crude and diesel oil from China. 10/17/82.
Tourism	
Haidao Tourism Development Co. (a Hong Kong-Macao joint venture)/Xiexing Construction Co.	Joint Venture: Have contracted to build a 450-room Macao Holiday Inn Hotel. 10/24/82.
Trade Agreements	
(Thailand), (Sri Lanka), and (N. Korea)	Have signed agreements with China during October 1982.

NA = Not Available
NOTES: Contract 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.*

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Hebei preserved and dried fruits include: Dried Pear, Dried Apple, Dried Apricot, Preserved Pear, Preserved Apple, Preserved Peach, Preserved Apricot, Preserved Dates, Preserved Cherry-Apple and Haw Flakes. All are prepared from the fruits produced in Hebei Province.

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