

INSTITUTE OF CURRENT WORLD AFFAIRS

JYB-9

The Steel Monster

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Mr. Peter B. Martin
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Dear Peter:

In 1977, China decided to double its steel production to 60 million tons annually by 1985, and to build a steel mill complex with an annual capacity of 6 million tons at Baoshan, a few miles north of Shanghai. **These decisions were part of the over ambitious Four Modernizations Program.**

In 1979, even before plans were final, many of my Chinese colleagues criticized the Baoshan project on a number of points. Located in the Yangzi River delta, the ground on which the complex was to be built was swampy, therefore too soft to take such a huge industrial facility. Baoshan **was** 20 miles upwind from Shanghai, and the steel complex would further aggravate the serious pollution problem of the city. The choice of importing iron ore at high cost from abroad, mainly Australia, would make the foreign exchange problem even more acute, and would create a dependency on foreign sourcing of raw materials. Baoshan **did** not have a harbor to receive the ships carrying the ore from overseas, and **was** located on the bank of the shallow Yangzi River estuary. My colleagues warned me that all the weaknesses they had mentioned would create great technical difficulties, and would make the complex too expensive. One point which my colleagues did not mention, however, but was interesting to note, was that the steel complex had displaced thousands of peasants from their land just outside the largest food market in China, namely the city of Shanghai.

In September 1979, I met in Beijing with leaders of the Economics of Technology Research Society, headed by Comrade Ma Jian-zhang. The Society, which belonged to the China Science and Technology Association, promoted the application

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of Engineering Economics in China, helped develop skills in that field, and provided consulting services to large industrial and governmental organizations. Naturally the conversation turned to the Baoshan project. In answer to questions I put to Comrade Ma, he informed me that to his knowledge no feasibility study worthy of that name had been performed for the Baoshan project, and no other **options had been** seriously considered. When warnings were raised regarding the weaknesses of the project, they were brushed aside, and quick-fixes were offered. I was told that the decision had been a political and administrative one, and that economic and technical considerations had taken a backseat. Members of the Society I talked to went even further in their criticism by questioning the need to double the steel production by 1985 and to build a steel complex such as Baoshan.

A few weeks later, I visited the Baoshan site. One of the Chief Engineers, Comrade Huang, played the host. With great delight he told us that all the problems encountered at Baoshan were being solved satisfactorily. Steel piles, 300,000 to 400,000 tons of them, were being sunk to strengthen the swampy ground. Australian iron ore would be transhipped onto less than 25,000-ton ships in the specially built port of Beilun, south of Shanghai, and would be transported 130 nautical miles north to Baoshan. This was necessary, since the Baoshan harbor being constructed on the bank of the Yangzi River would initially only take small tonnage ships. A second stage to deepen the harbor was planned to eliminate the need for transshipment. Pollution control devices would be installed as part of the imported equipment. The dislodged peasants had been relocated and had received adequate indemnities. Comrade Huang even said that despite all these problems, Baoshan was still the right location for such a huge steel complex.

I asked Comrade Huang whether a feasibility study was performed for the Baoshan project. His answer was: "A study was done on the project." And to allay any remaining doubts in my mind, he added: "Chairman Hua Guo-feng approved the report himself."

I had no doubt that the report went all the way to Chairman Hua. In a sense, it seemed that the decision had already been made, and the report, however complete or incomplete, was only incidental to the whole decision-making process. This process was principally driven by political considerations. Grandiose programs had to be undertaken to celebrate the beginning of a new era: a new Party chairman after 40 years of Mao's uninterrupted leadership. Also, the Shanghai political circles lobbied for a substantial share of the projects, hence the site.

Whether the reservations about Baoshan were incorporated in the report, and if so to what extent, I do not know. However, every single one of them, and more, **is turning out to be a real problem now that the project is being implemented. The high price** (relative to artificially low internal prices) of Australian iron ore will make the pig iron production cost double that of the iron produced in other plants using domestic ore in China. Partial internal sourcing of ore is now being considered due to cost consideration and to the realization that the Australian ore supply may not be sufficient for Baoshan's production capacity. This option in itself **would** lead to problems, since some of the imported equipment is designed to use one type of ore only. The steel and concrete piles used to strengthen the ground are sinking too deep into the swamps to be retrieved.

The transshipment of the imported ore in the port of Beilun is turning out to be too costly. Because of the high content of silt carried by the Yangzi River, dredging the Baoshan harbor is a more complicated task than expected. The depression that the heavy industry is currently experiencing, the tremendous pressure felt from increasing demands on scarce foreign exchange, and national sentiment are making many Chinese quarters criticize the wholesale import of equipment for the steel complex. They contend that China has the internal expertise to manufacture **herself some of the imported equipment**, and are pressing for changes to this effect. The development of indigenous capacity and expertise to build modern industrial projects in the future will be an additional benefit to having China produce some of the equipment.

All these problems have caused delays and cost overruns. In June 1980, it was estimated that the first stage of Baoshan will go into operation in late summer of 1982, a year later than previously planned. The cost overrun is even more severe. Baoshan's total costs may run as high as 40 billion yuan (about US\$27 billion) double the original estimate. The exclusion by the Ministry of Metallurgy of the costs of many auxiliary projects made the original estimate low. Baoshan is now considered a financial burden and eats up 5% to 10% of the national capital construction budget.

Where the Baoshan project stands now is difficult to tell. Rumor has it that some Chinese leaders were of the opinion of cutting losses, and cancelling the whole thing. Others say that everything is going according to schedule (which schedule?). I guess the truth is somewhere in between, at least for now. The cancellation, or indefinite postponement as Chinese refer to it, of the second stage of the project, which would have increased the production capacity from 3 to 6 million tons annually, is now public knowledge.

The postponement of the second stage is not without its own problems. In doing so, some contracts have actually been cancelled. This has raised the question of credibility of the Chinese on the international market, and has met with the displeasure of affected foreign corporations, mainly Japanese. There is talk now for Japan to extend soft loans to China to reactivate the second stage. Also, with the infrastructure already set up for the first stage, the postponement of the second stage will make the Baoshan project more uneconomical.

One positive outcome of this extremely dear steel monster is the willingness **on the part of many Chinese decision-makers** to recognize the necessity for serious and detailed feasibility studies, and to take their results into consideration. There have been signs indicating that such a willingness is a genuine one. For example, **a massive project is currently being considered in China to move daily millions of cubic feet of the Yangzi River water over a thousand miles away** to irrigate fields in the dryer northern part of China. Such a mammoth undertaking, which was about to be decided on Baoshan style in 1979, has now been referred to a national multidisciplinary team for study.

The political repercussions of the Baoshan and other similarly ill-planned projects have been substantial. To address and attempt to solve the problems of China's extended economy caused by the Four Modernizations Program, a new leadership has gradually been put at the economic reins of the country since late 1978. This leadership, under the direction of Chen Yun, has introduced **new policies and measures** to bring the economy under control. Also, Hua Guo-feng has been linked with the overly ambitious, poorly designed Four Modernizations Program, including the Baoshan project. Today the Chinese press asks the people to avoid the "'left' practices in economic work of before 1979." This sting is directed at Hua, since he was promoting his economic program from the death of Mao in September 1976, till the economic readjustment program was announced in early 1979. Finally, during the National People's Congress held in September last year, the Minister of Metallurgy, Tang Ke, and his subordinates were grilled by delegates about the Baoshan project they were responsible for. The press at the time widely publicized this **action**, and hailed it as an exercise in democracy.

Even before the first ton of steel is produced, Baoshan has turned out an unexpected product: food for thought, at a very high cost.

Sincerely yours,



Joseph Y. Battat