

# A CASE STUDY OF LABOR-SERVICE MANAGEMENT PRACTICE IN RAILWAY CONSTRUCTION PROJECTS IN CHINA

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**ABSTRACT:** As the construction industry is highly dependent on its laborers and thus ought to seek for their benefits, much attention has been paid to construction labor force issues. Along with the rapid development of the construction industry in China these days, labor-service management has gradually been recognized as an urgent and fundamental issue regarding project objectives such as safety and quality, and further harmony not only between those involved parties, but also between the construction industry and society.

Concerning railway construction projects, labor-service management is becoming much more challenging, largely due to the huge number of migrant laborers involved on sites. Based on the investigation of two railway projects in process that are conducted by one large state-owned railway company in China, this paper summarizes the characteristics of construction laborers on site; compares the previous labor-service management mode (*baogongdui* in Chinese) and newly promoted mode called Frame Style Construction Team (*jiazidui* in Chinese); identifies the arising problems of new mode in practice according to experience of this company. Among those problems, insufficient communication between construction companies and their migrant laborers is found to be one of the most significant barriers to the achievement of effective labor-service management. This reveals that mutual understanding of not only fundamental needs but also deeper desires is critical for both construction companies and their migrant laborers. This finding points to a necessary next step: the establishment of a win-win relationship between the two parties, aiming at fundamental improvements in labor-service management.

**KEYWORDS:** labor-service management, migrant laborer, Frame Style Construction Team

## 1. INTRODUCTION

Generally speaking, the construction industry supports national economy and people's daily life by providing infrastructure in most countries all over the world. Infrastructure hereafter refers to basic physical and organizational structures needed for the operation of a society, or services and facilities necessary for an economy to function, such as roads, water supply, sewers, power grids, railways, bridges, ports, and so forth. Another significant function of the construction industry lies in its role of absorbing

a huge amount of labor force as an effective employment countermeasure during the development of economy in most cases. In other words, the construction industry is highly dependent on its laborers and thus ought to seek for their benefits. Much attention has been paid to construction labor force issues, such as employment relationship, accident prevention, long working hours, and so forth. In China, construction labor management has gradually been recognized as an urgent and fundamental issue regarding project objectives such as safety, quality, and schedule, especially in view of

frequent accidents, wage arrears, jerry-building. Furthermore, it is essential to the achievement of harmony not only between involved parties but also between the construction industry and society.

During the last three decades since Reform and Opening-up Policy was adopted in 1978, along with the tremendous institutional changes undergone in China, construction labor market has experienced two significant changes as well. One is that most construction operational laborers were released from state-owned companies into free employment labor market, mainly due to the state-owned companies restructuring. It led to the changes of employment relationship from permanent to optional, and subsequently the separation of operational laborers from most state-owned construction companies. The other change is that a huge number of surplus rural laborers poured into urban areas, which were largely absorbed by the construction industry. It is mainly due to the new Rural Land Contract System, which greatly increased the rural labor productivity, and then generated a surplus rural labor force.

Correspondingly, construction management on site has gradually been separated into two layers. One is focusing on technology and management in the whole construction process, mainly conducted by personnel from construction companies. The other is operational layer, including recruitment and management of operational laborers on site. The latter is called labor-service management in China, which gradually became a separated function in most construction companies. Various construction labor force issues emerged subsequently, revealing that labor-service business is problematic. Concerning railway construction projects in China, labor-service management is becoming much more challenging, as it usually involves a huge number of laborers on site. Based on the investigation of two projects in process

that are conducted by one large state-owned railway company in China (hereinafter Company A), this paper is trying to

- 1) summarize the characteristics of construction laborers on sites;
- 2) explain the newly promoted labor-service management mode called Frame Style Construction Team (FSCT), and compare it with the conventional mode; and
- 3) identify the arising problems of FSCT in practice, and point the key factors to improve construction labor-service management in China.

## **2. DIFFICULTIES IN LABOR-SERVICE MANAGEMENT OF RAILWAY CONSTRUCTION PROJECTS IN CHINA**

At present, China is in the period of economic and social transformation, accompanying a big change in management practices especially in construction state-owned companies. The original highly centralized planned economic system and management style are no longer suitable for those state-owned companies to develop themselves and enter the global market. The construction industry of China has been introducing and learning experience from international practices, while some of the original systems and practices continue to exist. Thus, the actual situation must be recognized first before China adapts itself to the needs of open market and then develops those introduced practices to merge with Chinese characteristics. It points to the necessity of clarifying the Chinese characteristics of construction labor-service group in this research.

### **2.1 General characteristics of construction laborers on sites**

Labor-service group is the concrete operational party on sites, with main features as follows:

- (1) Large number

For example, in section 2 and section 3 of civil

engineering works of Beijing-Shanghai High-speed railway, the numbers of construction laborers on site once reached approximately 18000 and 29000, respectively. More than 80% of them came from rural areas, called Chinese migrant laborers. Migrant laborer here is a term that has appeared during the period of economic and social transformation in China. It refers to the labor force that has a peasant identification and farmland, but the main income is from other sources rather than farming in the countryside.

(2) Significant difference

Generally speaking, laborers recruited in one construction project usually come from different parts of China, and thus have significant differences in customs and living habits. It can easily result in communication difficulties and even conflicts, which are inconsistent with the concentrated construction management.

(3) Seasonality

As most construction laborers come from rural areas, they would like to return to hometown especially in the harvest seasons and traditional festivals. It is likely to lead to high risk of labor shortage and project delay during those periods.

(4) Low quality of service

Most migrant laborers are poorly educated with a distinctive individualism among them. Lack of

consciousness of overall project performance especially regarding quality and safety, makes it extremely difficult to implement management among them. Moreover, since most migrant laborers just left their hoes for entering the construction site without any vocational training, most of them could not meet the construction skill requirements.

All characteristics above make it extremely difficult to conduct labor-service management in practice.

**2.2 Analysis of the game between construction company and labor-service group**

The ideal labor-service management is supposed to be a win-win relationship between construction company and labor-service group, aiming at accomplishing project objectives effectively through mutual understanding. However, it is extremely hard to achieve it in practice considering numerous contradictions shown in Table 1. In view of the unsatisfactory status of labor-service management, much effort has been done in China.

**3. THE MODE OF FRAME STYLE CONSTRUCTION TEAM IN RAILWAY CONSTRUCTION PROJECTS**

According to *Medium and Long Term Railway*

Table 1 Contradictions between construction company and labor service group

main contradictions	Construction company's interest	Labor service group's interest	Interpretation
wage	reduce wages and lower project cost	increase wages	as part of project cost, labor wage is easy to be cut
productivity	extend working hours and increase labor intensity to increase productivity	reduce working hours and labor intensity without wages deduction	inefficient way to increase productivity and no respect to laborers
quality	build excellent project without increasing cost	just complete workload	workload-based labor wage, neglecting the quality of service
safety	decrease accidents but reluctant to pay for security facilities and safety training	secure working environment	laborers' weak awareness of safety
Treatment	only care for company staff	same treatment as company staff	unequal treatment even no basic human respect

*Network Plan (2004~2020)* and *Railway Eleventh Five-Year Planning (2006~2010)*, the railway construction in China has entered a rapid development era, while the number of construction accidents also increased. In most cases, it is labor-service team (*baogongdui* in Chinese) that has been blamed to be the culprit. Labor-service team (hereinafter LST) developed in a large scale in the late 1980s, and has been the main body dealing with labor-service management then. In LST, the leader (*baogongtou* in Chinese) usually plays an active role in recruiting migrant laborers from his relatives, fellow-villagers or other resources involved, and then takes charge of their living and working. First, since management of LST relies on social relationship rather than any legal contract, laborers' rights could be easily infringed by arbitrary team leaders. Second, considering insufficient experience, capability, and responsibility of most LST leaders, project safety and quality are usually under high risks. All above has aroused great concern of the government and the whole society.

It is urgent to regulate labor-service management on site regarding not only project objectives but also laborers' legal rights in order to motivate more social resources to participate in the construction industry. Under such background, a new labor-service management mode called Frame Style

Construction Team (hereinafter FSCT) was proposed by Company A, which then spread widely with its promotion by Ministry of Housing and Urban-Rural Development of the People's Republic of China since 2008.

### 3.1 General description of FSCT

FSCT (*jiazidui* in Chinese) is a concrete fieldwork construction team, which builds a bridge between Construction Management Team (hereinafter CMT) and labor-service group on site. FSCT has two layer functions. One layer is fieldwork management and supervision, conducted by managing and technical personnel of the construction company. The other layer is construction work, conducted by operational laborers who should be dispatched from formal Labor-service Enterprise rather than informal LST. In addition, sometimes there are also some special engineering laborers who directly contract with the construction company. The organizing process of FSCT is shown in Figure 1.

### 3.2 Internal structure of FSCT

According to construction organization designing documents that were obtained from Company A, internal structure of FSCT is shown in Figure 2. The corresponding responsibilities of each post are interpreted as follows:

(1) Team leader

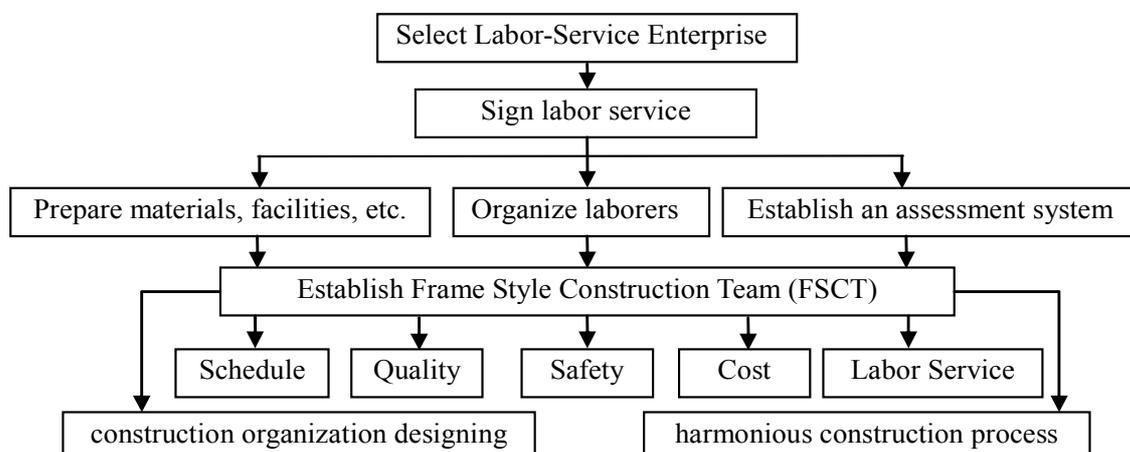


Figure 1 Organizing process of Frame Style Construction Team by CMT

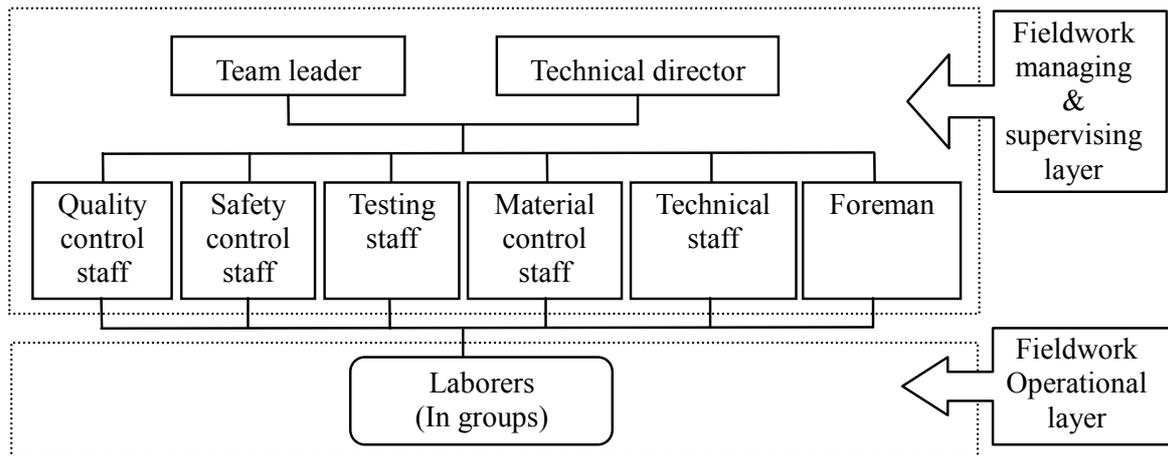


Figure 2 Internal structure of frame-style construction team

Take the overall responsibility for coordinating, organizing, managing and supervising the whole team; ensure project objectives to be achieved.

(2) Technical director

Implement technical management based on CMT requirements and technical drawings; inspect and modify existing technology concerning quality, safety, work procedure, construction technology, etc; participate in inspection on engineering quality and safety.

(3) Technical staff

Assist the technical director to implement technical management including supervision on fulfillment of technical measures; participate in investigation on engineering quality.

(4) Quality control staff

Take the overall quality control on site; participate in investigation on engineering quality; establish countermeasures to prevent quality problems; take charge of inspection on concealed works.

(5) Safety control staff

Monitor the overall safety status on site; conduct safety training for laborers; take charge of maintaining security facilities; participate in accident investigation.

(6) Testing staff

Take charge of testing raw materials on site; provide testing document for complete survey; participate in investigation on engineering quality.

(7) Material control staff

Carry out material consumption quota, statistics and regular assessment; make a ledger; assist testing staff by submittal of raw material for inspection.

(8) Foreman

Organize laborers to complete assigned works in groups; conduct direct fieldwork management concerning project quality, safety, schedule, working environment, and labor-service; act on behalf of technical staff and safety control staff temporarily in their absence.

### 3.3 Supporting routine management systems for FSCT

There are several particular routine systems assisting FSCT in practice as follows:

(1) Personnel training and certification

Only those who have accepted professional orientation, particularly training in safety and quality, and gained basic competencies, can get access to those corresponding posts. The training should be conducted by CMT and then recorded in details. Corresponding professional certification is required in order to engage in technical posts, especially in some special engineering posts.

(2) Technical explanation

Technical director should provide technical explanation in writing form to foreman of each group, such as working procedures. The data must be

classified and archived for future reference. Then each foreman should convey operational and safety requirements to his laborers before working.

(3) Material consumption quota

Based on the contract with Labor-service Enterprise, CMT should set a quota on material consumption for FSCT, endeavor to check up every day, and settle accounts at the end of every month.

(4) Standby supervision

Technical staff, safety control staff, and group foreman must conduct standby supervision to ensure all works under continuous supervision.

(5) Attendance checking

Daily count and monthly report of fieldworkers' attendance should be implemented. Data should be provided by foremen in each group, and collected by CMT corresponding staff that will make a ledger on work attendance then.

(6) Labor payment

At the end of each month, payroll sheet should be made by CMT staff based on working hours, service quality, wage standards, etc. After confirmed by Labor-service Enterprise, wages will be issued by CMT financial sector to migrant laborers. In this way, laborers' wages are less likely to be deducted and defaulted intermediately.

**FRAME STYLE CONSTRUCTION TEAM IN PRACTICE**

Considering the motivation of promoting FSCT in railway construction projects, it has a positive value in ensuring labor payment and project objectives more concretely through labor contract and greater intervention and supervision of construction company than previous mode (see Figure 3). However, there still exist problems in practice. Some reflections on the implementation of FSCT in practice will be given concerning migrant laborers and construction companies respectively.

(1) Concerning migrant laborers

As a new mode of fieldwork team with labor-service business, FSCT could make a more normative use of social resources (mostly migrant laborers) through labor contract, although it is difficult to implement in practice. For example, migrant laborers become less worried about wage arrear, as under FSCT wages will be counted and issued by CMT instead of brokers according to labor-service contract.

However, as Labor-service Enterprises have not yet developed well enough to meet the market demands, implementation of FSCT is largely restricted, and situation of migrant laborers remains to be severe.

**4. REFLECTION ON IMPLEMENTATION OF**

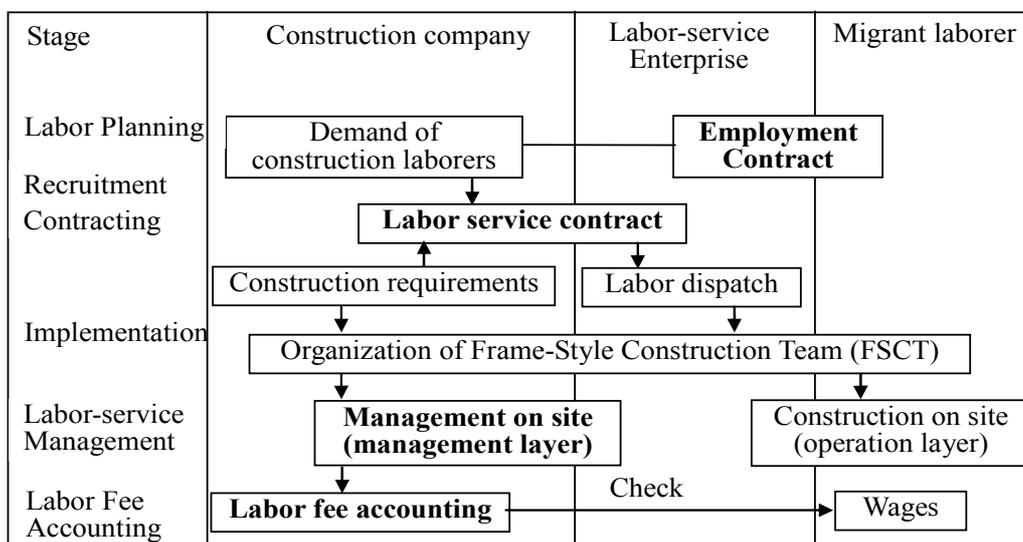


Figure 3 Improvement of Labor-service Management by FSCT in principle

In addition, with the improvement of society and people's living, migrant laborers also begin to have deeper needs, such as self-respect, desire to improve ability and social status, compared with the previous only concern of income. However, even the basic human respect for migrant laborers could not be felt during the investigation. For example, the interviewees from company A generally thought that it was nonsense to conduct training or communicate with migrant laborers. One probable reason lies in the deeply-rooted conception on migrant laborers that they have a low-level cultural quality. Another reason may lie in the project cost. The construction company is reluctant to pay any bill for laborers' training in view of intangible return.

## (2) Concerning construction companies

Construction companies have been bothered with jerry-building by dishonest LST for a long time. Under the conventional mode, responsibility for procurement of materials and laborers was usually arbitrarily given to LST leaders. Sometimes they cheated on labor and materials, in ways such as using inferior materials, taking a cut on material fees and wages. Also construction companies were often subsequently harshly criticized for insufficient management and supervision, especially when safety and quality problems occurred. Compared with the conventional mode, FSCT can ensure quality and safety management on site more concretely through greater intervention and supervision by construction companies. In other words, this new mode can lower risks concerning quality and safety to a certain extent for construction companies.

However, as pointed by one staff member from Company A, in practice they could not or would not like to follow guidelines of organizing FSCT as there are not enough and capable Labor-service Enterprises, and furthermore labor costs of

Labor-service Enterprise are usually higher than for other 'informal' labor resources such as LST, which leads to a vitally disadvantageous position in the current low-price bidding market.

In this investigation, it was also found that the management of FSCT was far from satisfactory, largely owing to low quality of service by migrant laborers. Laborers on site did not follow the instructions from CMT of company A. Sometimes CMT had to give orders to fieldworkers through Labor-service Enterprise. This management style is obviously inefficient. Perhaps sincere preliminary communication between the construction companies and their migrant laborers is necessary for the two parties to know each other's needs.

## 5. REMARKS

This paper demonstrates the newly developed mode of labor-service management in railway construction projects, called frame-style construction team. In principle, it has a certain positive value for the improvement of the migrant laborers' situation and for project management as well. However, in practice, multiple practical problems exist, partly due to insufficient communication between construction companies and their migrant laborers. For further research, it is urgent to clearly identify not only the basic needs but also the deep desires of both parties. Only then can the next step of establishing a win-win relationship between the two parties be taken, leading to fundamental improvements in labor-service management.

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