An Evolution of Work Organization of the US Automobile Industry: From the Perspective of Japanese Automobile Plants

by

Kenichi Shinohara
Faculty of Business Administration,
Kyoto Sangyo University, Kyoto, Japan,
(Visiting Scholar: Institute for Research on Labor and Employment,
University of California, Berkeley)
E-mail: shinoken@cc.kyoto-su.ac.jp

Abstract

The study aims to: 1) comprehend the actual conditions of work organizational change in the Detroit 3 (GM, Ford and Chrysler), 2) analyze and compare their work organization with Japanese automobile industry, and 3) discuss the problems of their related reforms. Till now, only few attempts have been made at the hearing investigations and analysis of work rules such as labor-management agreements at the shop floor of the plants in Detroit 3.My detailed research is the first to analyze both the management policy concerning work deployments and the job controls by unions, of the Detroit 3, at some automobile plants in Michigan. This research on the conflict itself, as well as its changes over the last 20 years, is the first in this field. Originally, until the 1970s, the United Autoworkers Union (UAW) gradually developed their controls against the work conditions on the shop floor in auto plants. In particular, these union controls mainly comprised strengthening the job classifications and seniority system at the shop floor. They have succeeded to improve the work conditions of rank-file workers from the discretion by management in many cases. On the other hand, workers' deployment has become rigid, and their work organization often became inefficient in cost and quality control. However, since the 1980s, the Detroit 3 faced more harsh market conditions against competitors mainly from Japan, and obliged to improve their work organization and wage system flexibility. Although they tried to adapt themselves to the changing market conditions, due to such difficult experiences, the Detroit 3 introduced the management crisis in 2009. This study shows that work organization and wage system reforms are still being implemented. The plant management system is still confronting the actual conditions of their inefficient cost and quality control practices in various ways, although they have already recovered their sales performance in 2015.

Keywords: Automobile Industry, Work Organization, General Motors, Toyota, Employment Relations

1. Introduction

Has the US automobile industry really regained its competitive edge after the financial crisis of 2009? Have shop floor level reforms been successful in the assembly plant? The purpose of this paper is to examine the actual factory working conditions, as well as the problems of industry business reforms—mainly to the work organization—from the viewpoint of comparison with the Japanese automobile industry.

Since the 1980s, the US automobile industry has been challenged by Japanese auto manufacturers such as Toyota, Honda, Nissan and Mazda. To survive global competition, the former were obliged to reform and restructure their business in several ways, and, in particular, were required to implement reforms of work organization in assembly plants.

Since the 1980s, the auto factories of Detroit's Big Three have been trying to reform their work organizations. As we observe in this paper, there are three steps to understanding the evolution of work organization in the US auto industry:

1. The reforms taking place in the US auto industry are being implemented using the Japanese auto factories as a benchmark.
2. However, because of labor-management constraints, there are two crucial points that the US auto industry cannot introduce. One is the concept of "Kaizen (Continuous improvement)" and the other is the "merit system" in Japanese terms.
3. The US auto industry has tried to reform their work organization without the concepts of "kaizen" and the "merit system," and their reforms are still developing and in a fluid condition. Thus, the working conditions of their work organization have become unique.

As we see from the discussion above, the US auto industry is struggling to reform their work organization, but faces unique working conditions due to labor-management constraints. In order to fully understand the situation at the shop floor level of the US auto factory, we must analyze the facts of the case from the perspective of labor-management. First, we see that the nature of "labor relations" is the "exchange between work and wage." In the case of the US auto industry, UAW (United Autoworkers Union) and the factory managements collectively exchange detailed and enormous amounts of work and wages under the basis of their work rules. UAW and management bargain both work and wages (collective bargaining), and often remain in conflict (grievance and arbitration). In the research procedures of this paper, we include the following steps:

1. Analyzing work rules (labor-management agreement and other documents)
2. Hearing investigations of both parties.

2. Literature Review

Since the 1970s, the Japanese auto industry has been stepping up its presence in the US auto market. At the same time, Detroit's Big Three have been trying to remain aware of their new competitors, use the Japanese auto industry as their benchmark, and reform their work organizations accordingly. For the first time, Womack, Roos, and Jones have argued that Japanese automakers are superior in performances such as cost, quality and delivery in plant operations. They and many other researchers have performed field research on Japanese auto work organizations.

However, most of them did not deeply analyze labor-management relations in Japan. Womack et.al. and most other researchers in the US rarely paid attention to Kaizen or the merit system (or the pay system itself in detail), which are the key factors to understanding Japanese labor-management relations.

Instead, US researchers weighed heavily the role of "team work" by production workers, and most believed that "team work" would lead to improved productivity and quality. When researchers observed the Japanese work organization only on the surface, they may have noticed that the workers seemed to work together more cooperatively compared to workers in US organizations. These

researchers failed to notice the most important element- that Japanese work organization are based on a workers' merit system and the real meaning of Kaizen[1].

Though the Japanese work organization is a major benchmark for the US auto industry, most US researchers have not given much thought to the Japanese merit system or the real meaning of Kaizen. Accordingly, we have been investigating US auto industry organizations from their own point of view until now[2].

3. Findings and Discussion

As we discussed in the previous section, most US auto factories use the work organization of Japan as their benchmark. Hence, many Japanese key words such as "Kaizen" (continuous improvement), "Andon" (an electric light board), or "method of 5S [Seiri (Sorting), Seiton (Setting-in-order), Seiso (Shining), Seiketsu (Standardizing), Shitsuke (Sustaining the Discipline)]" have become very popular and are now being used in US auto factories. US auto factories have been making efforts to introduce the management styles usually seen in Japanese auto factories.

However, there are very important elements usually seen in the Japanese auto factory that the US auto factory could not introduce. These are the "Merit system" for workers and real "Kaizen."

In the Japanese auto factory, capable production workers can attain promotions to higher levels and management positions. Most workers are eager to climb the career ladder due to incentives like higher wages, and the distinction of being recognized for higher capability and a kind of honor among their colleagues. Labor-management relations systems in Japan have followed their original path historically, and presently, in most industries, workers and management have agreed to introduce blue collars promotions along with those received by white collar workers[3].

In contrast, US production workers do not have the opportunity to attain such promotions, and there is virtually no career route for them. In the US and most European countries, the status gap between white collar and blue collar workers is enormous. It is common for promotions to be available only to white collar workers, with blue collar having much less potential to make career moves. This status gap is especially notable between the work systems of the US and Japan.

Even academic researchers who study employment relations in the US often do not understand the real meaning of Kaizen, or of the Japanese merit system[4]. Kaizen means "continuous improvement" at the shop floor level. Generally speaking in the case of the US, blue collar workers are strictly regulated by their job descriptions and work in the scheduled routine ways; however, white collar workers are needed to commit themselves to managerial decisions and operating processes flexibly, and have less scheduled and routine ways. Therefore, we can generally say that Kaizen is not a part of the blue collar worker's job, but is primarily the white collar worker's job in US organizations. The most important fact is that Kaizen is part of both blue and white collar jobs in Japanese organizations. We can express the character of the Japanese organizational model as the "White collarization of Blue collar workers."

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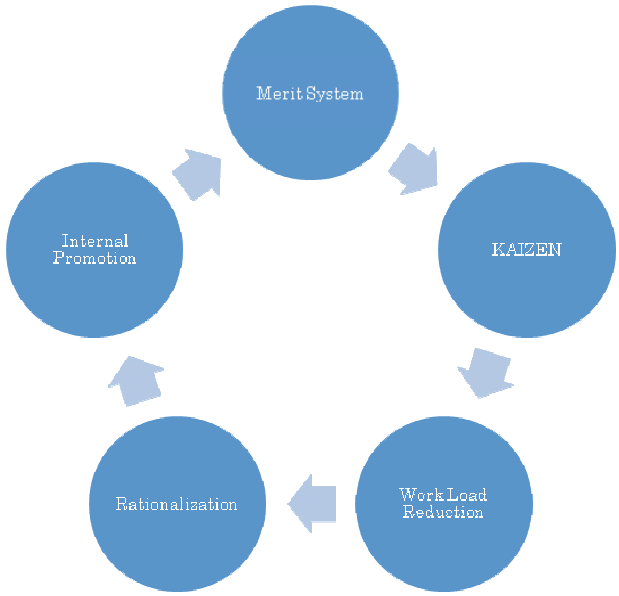
[1] Many researches in the US see the characteristics of Japanese workers as a "group mentality" and "seniority system." However, this viewpoint may cause misunderstanding. To be sure, Japanese society is often characterized by these two features (group mentality and seniority system).
[2] Shinohara (2003), Ishida and Shinohara (2010), Shinohara (2014).
[3] Shinohara (2003).
[4] Ishida and Shinohara (2010).

In the Japanese auto factory, the most important fact is that there is an operating cycle as follows and as shown in Figure 1:
1. The "Merit system" for blue collar workers results in effective "Kaizen."
2. Effective "Kaizen" results in "reducing Work Load (the number of component and the number of work process)."
3. Work Load reduction results in "rationalization," that is, reducing the total number of workers.
4. Workers who have a good understanding of and active role in "Kaizen" attain "promotion" from production work to upper managerial levels.
5. The promotion system itself reinforces the "merit system."



Note: This figure is conceptualized by the Author

Figure 1 Operating Cycle: Merit System and Kaizen in Japan

Very simplified example is as follows: one work team at the assembly process is comprised of 10 workers, and each cycle time (the period required to complete one cycle of an operation) is set to 50 seconds for each worker. The supervisor asks his subordinates to reduce each cycle time from 50 seconds to 45 seconds "without increasing each workload and speed-up." From a commonsense viewpoint, reducing cycle time usually requires increasing each workload or speeding up work. However, the most important fact in this example is that Japanese factories use the system of "cycle time reduction without speed-up and increasing workload." This reflects the true meaning of "Kaizen" in Japan.

Before Kaizen, the cycle time of 50 seconds included 8 seconds needed to walk and pick up parts to material boxes on average for each worker. If a member of the work team conceives of a good idea to reduce the cycle time as a Kaizen, he suggests that the team should move the material boxes to an area closer to the assembly line and correct the design of their workplace. As a result, the production team succeeds in cutting 5 seconds (from 8 seconds to 3 seconds) from the time spent walking and picking up parts for each other. This results in a reduction in each cycle time from 50 seconds to 45 seconds.

Once the work team reduces each individual work cycle by 5 seconds, they succeed in reducing production cycle time by a total of 50 seconds, as there are 10 workers on the team.

*5 (seconds) * 10 (workers in a team) =50 seconds (total reduction of seconds in a team)*

After that, their supervisor asks the subordinates to suggest the next steps. The supervisor proposes to rearrange the design of the work place in order to decrease the number of team worker from 10 to 9 "without increasing each workload and speed-up." If the Kaizen leads to reducing the team number from 10 to 9, the worker who conceived of the idea will be promoted to supervisor.

While this is a kind of manpower reduction at the shopfloor, the merit of the system is that no layoffs occur. In return, surplus workers are reduced by means of promoting excellent workers. In Japanese auto factories, such internal promotion systems have been institutionalized historically. This is a key difference between the operation of Japanese auto factories and US auto factories.

However, this internal promotion system needs a merit system by which capable workers can be promoted. Because of space limitations, this paper cannot fully describe the relationship between the Japanese merit system and job control unionism. Historically, Japanese unions generally do not focus on "Equal pay for equal job," but on "fairness and objectivity of merit system and its appraisal system." This difference between Japanese unionism and US unionism is quite distinct, as Japanese unions subscribe and commit to the process of the merit system.

On the other hand, UAW has never attempted to implement a merit system until now, and is facing difficulty in doing so. Our previous research revealed that both labor and management of the Detroit's Big Three have been trying to reform their work organization, and their reforms are modeled after the structure of the Japanese auto factory. Until now, they remain in their attempts to reform their work organizations with the Japanese system in mind, but "without internal promotion system" for production workers. They are attempting "reforms without internal promotion system." This is the chief difficulty faced by the US automobile industry today.

Actual Conditions of Work Organization in the US Auto Factory

So what are the actual conditions of work organization in US auto factories compared to those in Japan? US organizations are trying to implement Japanese work system, but do not accept the "internal promotion system" of the Japanese auto factory.

Before 1990, there were nearly 200 job classifications within a plant, along with 200 wage patterns and job descriptions, and no merit system for production workers. This fragmented classification of jobs prevented flexible use of labor, as the system made changing from one job classification to another more difficult than changing allocation within the same job classification. This difficulty was made worse by the fact that transfer from one job classification to another required working under a new job description from the beginning of employment. According to the labor-management agreement, transfer to another job classification is done by worker seniority order, but job allocation change within the same job classification is an easier task.

Figure 2 shows the historical evolution of job classifications at the body shop in GM "A" plant. At the Body shop, there were 15 job classifications in 1990, 6 in 1993, and in 2003 the number of job classification decrease to only one except for team leaders' job[5].

[5]Ishida and Shinohara (2010) and Shinohara (2014).

All workers within the same job classification were paid equal wages. Organizations could not introduce merit-based or personal appraisal pay systems, as UAW negotiators feared that these systems would lead to wrongful influence of management discretion and favoritism.

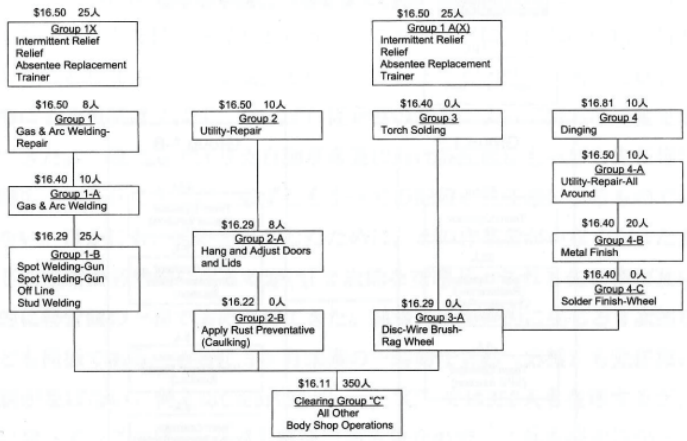
Traditionally, the relationship between labor and management has been very adversarial, as UAW displays very little trust in management. Concerned about loss of employment, UAW has historically protected jobs by regulating work organizations by means of increasing job classifications and seniority rule.

In this context, it is still difficult for UAW to cooperate with management, and they cannot accept management's request for job combinations for fear that the change would lead to workers should losing their jobs, even if management shouldpropose policies to promote job security.

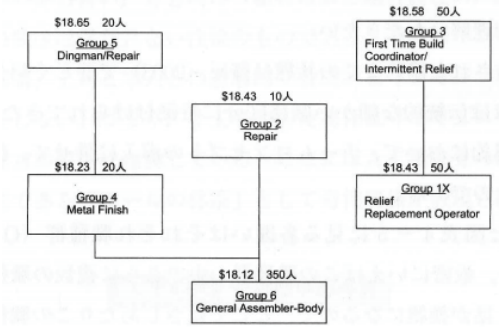
This is the reason why UAW rarely agrees with management over the real meaning of Kaizen in the Japanese model. UAW officials believe that Kaizen should not be associated with job combination, but should ease employee workload. Until now, industrial engineers have tried to execute job combinations that lead to lay-off on a mandatory basis, but UAW feel resistance to such "top-down style" compulsory job combinations.

Both labor and management in the US auto industry are seeking cooperative relations, which both parties welcome in order to help the US auto industry survive. For example, they are trying to introduce a kind of "Joint consultation system," which Japan and German employment system use. Joint consultation systems allow workers to contribute to management decisions through consultation. However, the operation of this type of system is not yet secure.
At the shop floor level, since the 1990's, both parties have agreed to introduce "PDT (Product-Development Team)" which aims to bring cooperation between production workers and development employees. Though the name of PDT was changed to "Core team" after their management crisis in 2009, the "Core team" has continued to develop slowly until now.

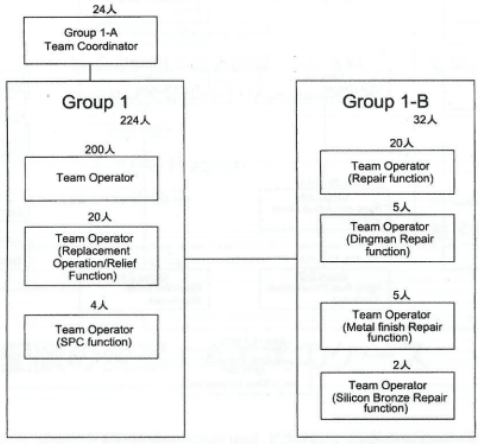
1990



1993



2003



2015

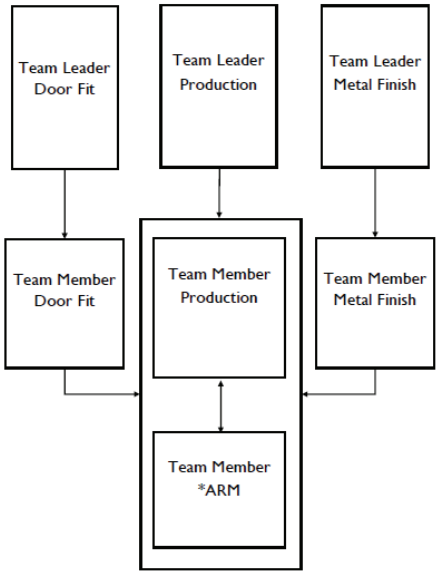


Figure 2 Transition of Job Classifications at the Body Shop in GM Plant 'A'

Source: Author added, altered and tinkered with the original figures in A Assembly, Body and Local A, U.A.W., *Local Agreement between A Assembly, Body Plant and Local A, U. A. W.*(October 1990), (October 1993), (October 2003), (December 2015).

Thus, the characteristics of work in the automobile factory are not based on competitive principles, but on a system of egalitarianism and seniority, as organizations have hardly introduced merit-based systems. On the other hand, the pay system in the Japanese auto factory is based completely on the merit system. We can conclude that there is a tremendous difference between the US and Japanese systems.

4. Conclusion

Since the 1980s, US auto factories have been making efforts to reform their work systems. Due to space limitation, this paper cannot fully recount the historical development of these reforms, but we can conclude that they reduce the number of job classification from 200 to1, while retaining a seniority system. We can also observe that actual work organization in the US auto factory represented a mixture of single rate wages and a strong seniority system until their management crisis in 2009. Since the crisis in 2009, the factories have experienced two major labor-management negotiations. The first was held in 2011, and the last is still under negotiation today. We are strictly observing the current negotiations in the GM "A" plant, and they seem to remain committed to their seniority system. Presently, the UAW and Detroit's Big Three are conducting negotiations. This paper demonstrates the tendency of US auto factory reforms to be modest in nature, and observes that the single rate wage system is a very distinctive and constant trait of the US work organization. As we can see from the transition of work organizations from 2003 to 2015 in figure 1, they are still implementing effective work organizational reforms and must continue to be observed in the future.

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