

The Impact of Health and Safety Committees

A Study Based on Survey, Interview, and Occupational Safety and Health Administration Data

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In a study conducted to determine if the existence of a joint labor-management health and safety committee (HSC) was correlated with either the number of Occupational Safety and Health Administration (OSHA) complaints or hazardousness, as measured by OSHA serious citations, virtually no effect could be detected in a sample of 127 Massachusetts manufacturing firms. At a sample of 13 firms, interviews of HSC members were conducted. Committee attributes and perceptions about committee effectiveness were compared with the number of OSHA complaints and serious citations. There were fewer complaints and fewer serious citations at firms with HSCs that were perceived as effective. Results of the study suggest that the objective attributes of the committee may be less important to its success than the commitment of management and labor to solving workplace safety problems.

Limited resources are available for government regulation of workplace hazards. Inevitably, great reliance must be placed on private measures to protect the health and safety of American workers. By developing and enforcing health and safety standards, the Occupational Safety and Health Administration (OSHA) creates incentives for employers to reduce workplace hazards. At the same time, the active interest of the federal government in occupational health and safety provides support and encouragement to

workers' efforts to eliminate unsafe conditions. One important tool available to both employers and workers for improving working conditions is collective bargaining. Two elements of this system that have a direct, day-to-day impact on occupational safety and health are the grievance system and joint labor-management health and safety committees (HSCs). (Note that there are several types of HSCs, such as management-only or union-only committees. In this article, unless otherwise stated, we will be discussing only joint union-management committees.) The Bureau of National Affairs has reported that in 1970 31% of industrial contracts covering 1,000 or more workers had provisions establishing joint HSCs; the prevalence of such contract provisions had risen to 39% by 1975; by 1983 it had increased to 45%.^{1,2}

Several articles describe existing HSCs from a case-study or journalistic approach.^{3,4} However, few empirical studies have been conducted that address issues comparable with the questions raised in the present investigation. The principal study, by Kochan et al,⁵ was based on interviews with union members of joint union-management committees from the International Association of Machinists union and management members from the same plants.

The investigators identified several factors that they found to be associated with committee effectiveness as indicated by either the number of committee recommendations made within the previous six months or the number of major changes in the plant made to improve safety and health in the previous year. These factors were frequency of meetings; cooperative behavior on the part of management and union committee members, as perceived by the union; rank and file input to its safety and health representatives; active feedback to the rank and file through local union meetings; and OSHA pressure and effectiveness, as perceived by the union.

Cooke and Gautschi⁶ utilized data from the state of Maine for compensated injuries and OSHA citations in 113 manufacturing firms during the period 1970 to 1976. Con-

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trolling for the number of production employees, business cycle effects, and OSHA citation experience, they found that the establishment of a joint HSC was associated with a small (and not statistically significant) decrease in lost time caused by injuries between 1970 and 1976. They did not examine specific program characteristics as predictors of injury rates.

Thus, while national health and safety policy is being established to encourage HSCs and other voluntary participation programs,⁷ it is generally agreed that little evidence exists on the effectiveness of HSCs, or the attributes of HSCs that contribute to their effectiveness as evaluated by changes in workplace safety.

The Role of HSCs

The joint labor-management HSC is an instrument through which labor and management can engage in problem-solving behavior to improve workplace safety and health conditions. As such, a committee can have two distinct effects. It can improve *objective* safety and health conditions; and it can reduce *perceived* hazardousness.

If a committee is perceived as part of an adequate procedure for resolving health and safety problems, then workers will generally prefer to use it, rather than to file a complaint with a third party, like OSHA. This increased reliance on internal dispute resolution mechanisms can be seen as a measure of committee effectiveness. Whether a committee is effective by any of these definitions may depend on a variety of factors in the HSC's environment and internal to the committee. These factors include the following:

1. *The economic environment of the firm.* A prosperous firm in a growing industry is more likely to devote time and other resources to the workplace safety and health problems than a firm with meager profitability. The union in the prosperous firm is also more likely to focus on health and safety issues and, thus, to support an active, effective HSC.
2. *The regulatory environment.* The pressure from OSHA to control workplace hazards creates support for problem solving in this area. Managers generally prefer to avoid outside intervention in workplace decisions. If OSHA is perceived as responsive to worker complaints, then managers will be motivated to increase their responsiveness to recommendations from a safety committee to avoid complaint inspections.
3. *The industrial relations climate of the firm.* Cooperative labor-management relations may provide a necessary precondition for effective problem-solving behavior in an HSC.
4. *The commitment of management to reducing hazards.* We are aware of no HSCs that have independent power to make changes in capital equipment or work practices. Management commitment to improving workplace conditions would thus seem to be a necessary condition for HSC effectiveness.
5. *The structure and functioning of the HSC.* Size, management and union representation, frequency of meeting, and other structural characteristics of committees may affect their ability to influence perceptions and workplace conditions. In addition, the interpersonal relationships and skills of committee members may influence the committee's ability to accomplish its goals.

Aims of This Study

This study is designed to provide basic information about the prevalence and effectiveness of joint labor-management HSCs in Massachusetts. A second goal is to determine whether industrial relations climate, management commitment to workplace safety and health, and HSC structure and functioning are correlated with perceived and actual impact on workplace hazards. Finally, the impact of these predictions, as well as perceived HSC effectiveness on the frequency of OSHA complaint inspections, is examined.

Method

Survey — In September, 1981, a letter and short survey were sent to a member of upper management in all firms in the 1980-1981 *Directory of Massachusetts Manufacturers* that were listed as having more than 500 employees and greater than \$10 million in sales. (Even though the survey was targeted at firms with more than 500 employees, many workplaces in the study population were smaller than this. We attribute this to downward employment trends and to the propensity of some firms to exaggerate their size.) In the survey, respondents were asked to indicate whether their firm had a joint union-management HSC, a management-only committee, a union-only committee, or no committee at all and whether they would be willing to discuss their participation in an interview follow-up. The response rate was 44% (127/290). Of the 99 respondents who indicated whether they were willing to discuss being interviewed, 79 replied in the affirmative. The response rate to the mailed survey was low, and replies may have come from a biased sample of the contacted firms. For example, firms with no program or a program perceived to be ineffective may have been less likely to respond. Thus, the sample distribution reported in Table 1 should be interpreted with caution.

Data Obtained From Interview Sample — From the unionized respondents who indicated interest in further participation, 13 firms with joint HSCs were selected. The purpose was to compare safety conditions within the group of firms with committees to see if differences in committee attributes were correlated with workplace hazardousness.

Individual 30- to 90-minute interviews were conducted with management and union representatives in these 13 firms. In each HSC firm, an attempt was made to interview two management and two union committee members. This was not possible in all cases. In all but one firm, however, at least one management and one union member were interviewed. Altogether 41 interviews were conducted at the 13 firms.

The following variables were created by coding the interview questions:

1. *Industrial relations environment.* The level of labor-management cooperation at the workplace.
2. *Management commitment to health and safety.*
3. *HSC structure.* Size, number of management and union members, identity of chairperson, and method of choosing members.
4. *HSC functioning.* Frequency of meetings; number of powers of members, such as to investigate accidents, respond to complaints, and shut down dangerous jobs; exis-

Table 1 – Distribution of Types of Health and Safety Committees in Survey Sample*

	Union (n = 74)	Nonunion (n = 53)
Joint union-management Management committee	67%	..
Employee-management committee	28%	38%
Union committee	1%	49%
Other, or not specified	15%	..
None	7%	13%
	14%	6%

* Columns do not sum to 100% because firms may have more than one type of committee

tence of a formal agenda; number of routine activities; and number of items regularly reviewed, such as accident reports, workers' compensation data, and industrial hygiene monitoring.

5. *Outcome measures.* Positive impact of HSC on industrial relations, perceived HSC effectiveness in improving health and safety, and perceived safety level.

Management and union HSC members were interviewed separately. Generally, the agreement among their responses was very high, with correlations between management and union respondents generally over .70 on those questions for which responses were coded on an ordinal scale. (When there were two respondents from management or unions, their responses were averaged before reliability was assessed.) When there was disagreement, union members tended to be more negative about plant safety, management commitment to health and safety, the level of labor-management cooperation, and the impact of the HSC. While it would be interesting to look more carefully at workplaces where labor and management have different views of their HSCs, in view of the small sample, we used mean (or modal) responses to the interview questions to derive descriptive variables.

We were not able to obtain accident records from enough firms to warrant analysis. In addition, the U.S. Bureau of Labor Statistics denied permission to use their firm-specific injury data. However, OSHA inspection records were obtained, from which objective measures of firm safety were derived.

While OSHA data were used because direct measures of accident rates were unavailable, these data only indirectly measure the hazardousness of inspected firms. Citation rates have varied over time, in response to changes in OSHA policies. In addition, variations among inspectors may also affect the number of citations issued. Finally, although OSHA regulations are written to reduce workplace hazards, there may be important hazards not covered by regulations or regulations covering relatively minor hazards.

OSHA Inspection Data – Records of OSHA inspections in Massachusetts for the period 1973 through 1980 were obtained. These records contain information on the total number of inspections and the number of complaint inspections at a firm, the number of serious hazards cited, and the penalties assessed. They are of interest for three reasons.

First, the number of complaint inspections is a measure of how well a plant's health and safety structure and procedures have satisfied workers and their unions. Second, the results of the noncomplaint (random) inspections are a measure, albeit imperfect, of safety conditions. Finally, the results of complaint inspections may indicate whether the HSC resolves health and safety issues well enough so that only occasional, important problems are referred to an outside regulatory agency.

Two kinds of measures were derived from the OSHA inspection data: complaint experience and citation experience. Our measures of complaint experience are (1) the proportion of all inspections that resulted from complaints and (2) the number of complaint inspections in the data file.

The appropriate way to measure OSHA citation experience poses some problems. Since OSHA inspections may take only one or two hours or many days' time, the total number of citations may reflect the extensiveness of the inspection. For this reason, the number of citations issued per hour of inspection is a better measure of hazardousness than the total number of citations issued. Moreover, cited hazards may be minimally dangerous, or very dangerous. OSHA is supposed to issue a citation for a serious violation if "there is a substantial probability that death or serious physical harm could result." To focus on the most important safety problems, we used the number of serious citations per hour of inspection as a measure of workplace hazardousness. This measure should reduce the importance in our data of regulations only weakly related to workplace hazards.

One statistical problem in comparing firms with and without joint HSCs is that unmeasured characteristics of firms may be associated with both the existence of a joint HSC and with outcome measures. Such an association could induce a statistical relationship between the presence of a HSC and an outcome measure when none existed, or it could mask a real relationship. One workplace characteristic of particular concern is the underlying hazardousness of the production process. Since different industries have substantial differences in intrinsic hazards, any statistical relationship between safety and other firm characteristics could be influenced by the industry mix. We attempted to reduce the confounding due to industry by transforming our OSHA inspection measures into deviations from industry means. From the entire sample of 8,662 OSHA inspections of manufacturing firms in Massachusetts from 1973 through 1980, we computed means of the inspection variables (proportion of complaint inspections, number of complaint inspections, and serious citations per hour) for each manufacturing industry within a three-digit Standard Industrial Classification and all workplaces with more than 25 employees. For each sample firm, the mean value for its industry of each inspection variable was subtracted from the observed value, in an attempt to remove the "industry effect" from the cross-sectional variation.

Results

Survey Sample – The prevalence of HSCs among survey respondents is summarized in Table 1. Among the unionized respondents, 67% had joint union-management com-

mittees, 28% had a management-only committee, while 14% had no committee. Almost half of nonunion employers had employee-management committees, 38% had management-only committees, and only 6% had no committee at all. The percentage of HSCs for union firms are higher than those found in surveys by the Bureau of National Affairs, probably because our survey counts all HSCs, whether or not they are specified in a contract. In addition, our survey may overestimate prevalence because of self-selection bias. There are no similar surveys covering non-union firms.

For this sample, we hypothesized that unionized workplaces with joint labor-management committees will have fewer complaint inspections, a smaller proportion of inspections arising from complaints, and fewer serious citations per inspection hour. To test these hypotheses, the levels of the adjusted OSHA variables described in the "Methods" section were compared for firms with and without joint HSCs. The null hypothesis of no relationship could not be rejected at reasonable levels of statistical significance. Within the sample of 74 unionized firms that had OSHA inspections from 1973 to 1981, there was no relationship between the existence of joint HSCs and either the number of or the proportion of inspections arising from complaints. For noncomplaint inspections, the correlation with serious citations per hour of inspection was positive but not significant.

Interview Sample – Description – Our study revealed no "typical" HSC. Joint committees that we investigated ranged from mere formal arrangements that no one considered effective to those with strong management and union commitment to solving health and safety problems via the committee.

Within the interview sample of 13 firms, the median number of years the HSC had been in existence was seven (range, four months to 25 years). Member selection for all management members was determined by job function (personnel department, industrial relations, plant manager, plant engineer, safety director, safety inspector, and nurse). In six cases a personnel department or industrial relations representative was the chairman of the committee; other chairs were safety director (three), present or past plant engineer (two), safety inspector (one), and plant manager (one).

Although union members were selected primarily by union appointment, they were also appointed by management or volunteered. Members were frequently union officers. The HSC's existence was definitely stipulated in union contracts in only three cases.

Eleven of the 13 HSCs met every four to five weeks; two met weekly. Meetings lasted between one and two hours in most cases. Minutes were kept in 12 of 13 cases; committees were split fairly evenly on the use of a formal agenda.

In nine of the 13 HSCs, one or more respondents said the HSC had no formal powers: it could suggest or recommend only. The median number of powers named was two. Powers identified were control over a health and safety budget, change in production methods and/or work rules, ordering industrial hygiene monitoring and/or medical surveillance, hiring consultants, and education.

Common committee activities were to review industrial hygiene and medical surveillance data, workers' compen-

sation claims, and accident reports and statistics, with the accidents category being most frequent. In several cases members made periodic tours of the plant. Routines typically included discussing old business, hearing about accidents, hearing reports, and opening the floor to discussion of new problems.

Atmosphere of the HSC meetings was judged to be generally lively, according to 42% of respondents, with 15% saying they were boring. Meetings were also seen as cooperative, with 52% giving this response and only 10% saying they were contentious. Management was seen as highly committed to health and safety by 63% of the respondents (5% said the opposite) and to have cooperative relations with the unions over health and safety by 60% of the respondents (7% disagreed). Respondents' evaluations of the HSC's actual impact were also on the positive side: 50% said the HSC had had a beneficial effect on labor-management relations, and a full 94% of respondents said the HSC had an effect on health and safety, in the form of many important improvements (24%), a few important improvements (33%), or many slight improvements (37%).

Correlates of Perceived HSC Value – The small number of firms at which interviews were conducted means that the power of this part of the study is limited. Nevertheless, the patterns that emerge below strongly suggest some hypotheses to be tested in future research. Table 2 presents relationships between interview variables and respondents' perceptions of the HSC's impact on health and safety. Reported committee effectiveness was strongly correlated with the HSC's impact on industrial relations, management commitment to occupational safety and health, the total number of topics (e.g., accident data, industrial hygiene monitoring data, and workers' compensation reports) regularly reviewed in meetings, and the liveliness of HSC meetings. Reported effectiveness was also positively, but not significantly, correlated with the quality of industrial relations, with significant member powers, and with perceived workplace safety. Other variables that measure objective features of the HSCs were not associated with perceived effectiveness. These include the length of time the committee had existed, the frequency and length of meetings, the number of members, how members were selected,

Table 2 – Correlations With Perceived HSC Effectiveness
(*p* Value Given in Parentheses)

HSC impact on industrial relations	.80 (.001)
Quality of industrial relations	.34 (.26)
Management commitment to health and safety	.76 (.002)
Level of safety	.46 (.13)
Liveliness of meetings	.68 (.01)
No. of members' powers	.43 (.14)
No. of items reviewed by HSC	.69 (.01)

the existence of an agenda, and whether the committee is part of the collective-bargaining agreement.

Correlates of OSHA Inspection Outcomes — In the last stage of data analysis, the interview data were merged with OSHA inspection results for examination of the relationship among complaints, serious citations, and the descriptive variables derived from our interviews. At this stage, there were only 12 workplaces in the sample, since one of the 13 interview sites had not been inspected by OSHA. As described above, OSHA inspection measures are adjusted by industry means to correct for the bias introduced by inter-industry variation in hazardousness.

The relationships between the complaint variables and interview data are presented in Table 3. Perceived HSC effectiveness had a strong negative correlation with both the proportion of inspections arising from complaints and the number of complaint inspections. In addition, the variables correlated with HSC effectiveness generally had negative associations with the complaint inspection variables, although the associations were sometimes weak for proportion of complaint inspections. Perceived safety was more weakly correlated with complaint inspections than was perceived HSC effectiveness. This suggests that OSHA complaints may be principally a response to an unsatisfactory mechanism for resolving health and safety problems, rather than simply a response to perceived hazards.

The relationships between serious citations per hour in noncomplaint inspections and interview variables are shown in Table 4. This subset was restricted to noncomplaint inspections because complaint inspections occur under special circumstances, so their outcomes may be less reflective of underlying safety conditions than those of noncomplaint inspections. Serious citations per inspection-hour were negatively associated with HSC effectiveness, with perceived safety, with HSC impact on labor-management rela-

Table 3 — Correlations of Interview Variables With Complaint Variables (p Value Given in Parentheses)

	Proportion of Complaint Inspections	No. of Complaint Inspections
HSC effectiveness	-.52 (.08)	-.81 (.002)
HSC impact on industrial relations	-.71 (.001)	-.61 (.04)
Quality of industrial relations	-.18 (.57)	-.51 (.09)
Management commitment to health and safety	-.20 (.54)	-.71 (.01)
Safety	-.17 (.63)	-.30 (.36)
Liveliness of meetings	-.35 (.27)	-.56 (.06)
No. of members' powers	-.43 (.16)	-.78 (.004)
No. of items reviewed	-.29 (.37)	-.88 (.0001)

Table 4 — Correlations of Interview Variables With Serious Citations: Noncomplaint Inspections ($n = 11$) (p Value Given in Parentheses)

HSC effectiveness	-.58 (.10)
HSC impact on industrial relations	-.50 (.17)
Quality of industrial relations	-.03 (.94)
Management commitment to health and safety	-.43 (.25)
Safety	-.58 (.13)
Liveliness of meetings	.23 (.55)
No. of members' powers	.42 (.26)
No. of items reviewed	.64 (.06)

tions, and with management commitment to health and safety. However, contrary to expectation, other variables associated with perceived HSC effectiveness had no association or even a *positive* association with our hazardousness index. That is, HSCs with interesting meetings, which reviewed many items regularly, and whose members had many powers tended to receive more serious citations from OSHA inspectors. This suggests that these characteristics of HSCs may be associated with *perceived* effectiveness, but not with a reduction in actual hazardousness.

The relationship between interview variables and inspection outcomes for complaint inspections was also examined. It was hypothesized that the effective committees that have fewer complaint inspections were screening out less serious complaints. This would have led to fewer serious violations per inspection-hour in firms with effective HSCs. The correlations provided no support for this.

Discussion

In this study, 290 Massachusetts manufacturing companies were surveyed. From information on the 127 respondents, we attempted to determine if the existence of a joint labor-management HSC affected either the number of OSHA complaints or workplace hazardousness, as measured by OSHA serious citations. Virtually no effect could be detected. This is consistent with results reported by Cooke and Gautschi.⁶

Data derived from interviewing HSC members in a sample of firms were then examined. Because interviews were conducted in only 13 firms, the power of this survey is quite limited. Nevertheless, these data suggest that, while the mere existence of an HSC may have no impact on safety, there are HSCs that seem to improve workplace safety. HSCs perceived as effective had fewer OSHA complaint inspections. In addition, OSHA inspectors found fewer serious hazards at these firms. This indicates that HSCs with high perceived effectiveness may not only increase *perceived* safety, they may also increase safety as measured by OSHA inspection results. However, there was no evidence that the OSHA complaints that came from

firms with effective HSCs were any better — that is, more serious — than those that came from other firms.

Finally, our results suggest the hypothesis that the objective attributes of the committee may be less important to its success than the commitment of management and labor to solving workplace safety problems. Most of the variables that were correlated with perceived HSC effectiveness, complaints, and citations can be interpreted as reflecting such commitment. Variables that failed to predict tended to describe objective attributes of the HSCs, such as the frequency and length of meetings, the number of members, the existence of an agenda, and whether the committee was mandated by the collective-bargaining agreement. If these findings are borne out by other studies, there would seem to be no simple formula to follow for creating a successful committee. Committees may facilitate occupational safety programs where a supportive environment already exists, but may have little or no impact in situations where they are only formalities.

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Third Party Displeasure

Delta is for diagnosis and a myriad of other terms in the language of medicine that we have inherited from the Greeks — generally, if somewhat unfairly, credited with being the first Westerners to approach the related problems of the identification and treatment of disease in a systematic, scientific way. After all, according to the Greeks themselves, the Egyptians had already made great strides in the classification of humankind's various physical ills; and the ancient Persians, like many ancient peoples, believed that the chief cause of human ills was diabolopsy ("possession by an unkind spirit") and had what was arguably a reasonable way of treating disease: Call in the local priests and have them utter incantations and prayers for the recovery of the patient. And why not? If disease was caused by angry spirits, prayer was the obvious course of cure. Besides, as Dr. Benjamin Lee Gordon points out in his fascinating work, "Medicine throughout Antiquity," there was something to be said for the fact that the Persians "resorted more frequently to spells than to drugs on the grounds that, although spells might not cure the disease, they at least would not kill the patient." In addition, Herodotus tells us that the Persian sick who wanted to hedge their bets would have their bedsteads set up in a public place and would ask passersby had they ever had a similar disease and, if so, what had they done to be cured of it — a far from irrational approach, really.

The tradition of Greek medicine begins with Aesculapius, the legendary semidivine offspring of the god Apollo and the utterly mortal Princess Koronis. Koronis later suffered the ill-fortune of being shot down (literally) by Apollo's sister, Artemis, the virgin huntress . . . who, in an unusual display of paternal feeling, snatched the yet unborn Aesculapius from the funeral fires. Aesculapius was then placed under the tutelage of the centaur Chiron who raised the lad, instructing him in the arts of healing. Unfortunately, Chiron did his work too well, teaching Aesculapius not only how to cure the sick but how to bring the very dead back to life. Zeus, sensing disastrous consequences for the divine order that propagation of this knowledge would entail, promptly and definitively took away Aesculapius's license to practice by blowing him away with a thunderbolt.

—From *Alpha to Omega — The Life and Times of the Greek Alphabet*, by A. Humez and N. Humez. David Godine, Publisher, Boston, 1981, pp 23-24.