

CASE STUDY

International Association of Machinists and Boeing Joint Quality Through Training Programs

*To provide opportunities for IAM-represented
Boeing employees to pursue lifelong learning
in a safe and healthy workplace.*

Mission Statement: IAM/Boeing Joint Programs

Summary

- Who:** International Association of Machinists/Boeing
- Where:** Tukwila, Washington
- When:** October 24-25, 2002
- Why:** Investigation of joint program effectiveness in knowledge management and educational problem-solving

Overview

The International Association of Machinists (IAM) and Boeing Company Quality Through Training Program (QTTP) is playing a vital role within the Boeing Company to cope with a complicated situation: reducing the workforce, implementing lean manufacturing, and the upcoming training of a new workforce as thousands of workers prepare for retirement in the coming years. QTTP Joint Training Programs were not created with these specific uses in mind, but because the programs are already established, they provide a foundation on which to build these new roles. Internal union and management groups are now relying on the credibility and connections of the QTTP leadership to facilitate organizational problem-solving. This case study describes how the joint program has responded to new organizational needs heightened by sudden changes in the aerospace industry.

The events of September 11, 2001 were devastating for the aerospace industry. One year after the tragic events, (you say below that airlines postponed or cancelled orders) business air travel had declined approximately 30% while air travel overall was off approximately 11%. The airline industry was projected to lose more than \$5 billion in 2002, on top of losing \$7.7 billion in 2001. United Airlines filed for bankruptcy, while most other airlines continue to post stunning losses. In response to the drop in air travel demand, the airlines reduced the number of flights – requiring less aircraft. As a result, airlines postponed or cancelled orders for new planes. Boeing’s commercial business was hit hard and the company has announced the layoff of 30,000 workers.

Despite this rather bleak picture, the QTTP leaders and representatives continue to skillfully promote joint, innovative activities that are mutually beneficial to those they represent. The activities described in this case are examples of the initiatives that

QTTP is promoting. Of note is the consideration and respect that form the basis upon which decisions are made within the group.

Joint Training Programs

The concept of a joint program was first introduced in the 1989 collective bargaining agreement between the International Association of Machinists and Aerospace Workers (IAM) and the Boeing Corporation. The contract language states;

The Union and the Company agree that workplace knowledge and skills training for bargaining unit employees will be the joint responsibility of the Union and the Company through the IAM/Boeing Quality Through Training Program (QTTP).

In 1995, the two components of this program – the Quality Through Training Program (QTTP) and the Health and Safety Institute (HSI) – were combined under one umbrella and are managed by both union and company representatives.

The IAM/Boeing Joint Programs are financed by a fund that receives 14 cents per payroll hour for all bargaining unit employees. In 1992, the company and union agreed to ensure a \$14 million minimum annual budget in the event the payroll formula falls below this threshold. Additional funds beyond these levels were provided in the 1999 contract to cover the costs of employee tuition assistance plan. Funds not spent in a calendar year were carried over to the next year. In 1999, the budget for the Joint Programs was approximately \$25 million.

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The activities supported through the joint programs are widely respected and have helped the joint programs develop credibility and respect in the organization with both the union and

management during the 1990s. The flexibility and responsiveness of the joint program representatives demonstrate the heightened effectiveness that can be created when union and management work together. There is tangible as well as intangible impact on the on the bottom line.

“Relationships between groups and people are changing”, says Spencer Graham, Union Administrator with the Health and Safety Institute, “these groups are thought of now as a resource, not an after thought”.

Gary Jackson, IAM Director of QTTP, says “A big change that has happened is that in the early days we were seen as a labor-relations thing, not an operations thing. Now we are really involved in operations. We are part of what is going on the shop floor now.” Gary’s comments capture the evolving role of the joint programs at Boeing. The programs build on their past efforts while carefully protecting the credibility that these efforts have given them. What started as a collective bargaining agreement item has developed into a tool that both the union and management can use to good purpose across the organization.

Joint Programs – Partners for Change

The following nine activities are supported by the Joint Programs with staff selected from union and management ranks:

- Career and Personal Development
- Job Combination
- Technology Change
- High Performance Work Organization Initiatives
- Laid-off and Reemployment Training Services
- Industrial Skill Training
- Certification and Regulatory Requirements Training
- Transfer Process Improvement and Support
- Support for “The Mutual Objectives of the Union and the Company”

Unlike the more strict constraints imposed on collective bargaining language and agreements, the joint programs have flexibility and can respond more quickly to a need for change. For example, QTTP began strictly as a collective bargaining, union driven entity. In an era of economic downturn, it has become important as a mutually beneficial mechanism. QTTP has the trust of the workers and credibility with management, which allows it to endorse

quality-related activities that would meet greater resistance if they were introduced by at a purely union or purely management group.

During layoffs, QTTP buffers the pressure on government agencies with activities that help employees with job searches and application for income protection and other support programs. One important effort works to prepare workers to start training under the provisions of the Worker Adjustment and Retraining Notification (WARN) act.¹ QTTP has responded to three major lay off events: 29,000 workers in 1993, 14,000 workers in 1999, and 17,660 workers from 2001 to late 2002.² Additionally, QTTP makes recommendations about labor market growth areas, teaches unemployment survival skills, and offers financial and retirement planning courses. It is a testament to QTTP effectiveness that from 1999 through 2002, \$84.78 million dollars in government funding has been made available to support laid-off Boeing workers through retraining assistance and income support.

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Training – Learning Education and Development

In mid-2000, the Joint Training Programs were contacted by Boeing’s training department, LEAD, (Learning Education and Development) and the Boeing Manufacturing and Quality function to aid with another internal Boeing initiative, Production System Improvement (PSI). PSI is a “personalized training program that is customized to each hourly employee.”³ As part of PSI, an assessment will be done for every hourly employee who touches the airplane looking at fundamental knowledge and skills, such as basic computer skills, introduction to blueprint reading, and Boeing specifications. Later phases of the training will be job and site specific.

Skills auditing is understandably a process that made the workforce very nervous. There were grave concerns about what would be done with the results of the individual assessments. PSI leadership asked QTTP to help, recognizing that through its

¹ QTTP held 16 job fairs from 1999 to 2001 with more planned. The job fairs are tailored to Boeing employees but are also open to the general public. Over 14,000 laid off workers have participated.

² Figures from Boeing Worker Retraining Program presentation.

³ Material taken from Boeing Production System Improvement Training materials.

understanding and relationship with the workforce it would be able to change worker perceptions or at least raise trust levels enough to allow the auditing to take place. QTTP was not only able to assist with the goals of PSI but their involvement also helped to build internal organizational bridges. “We changed this whole project from kind of a punitive, quick fix system, to one that gets long-term results”, says one QTTP member. As the importance of interpersonal skills to technological success became more apparent, operations manager’s perceptions of the importance of joint programs began to shift.

Ten years ago we focused on technology but now it’s more the people skills. Operations was never in training council before...(now) there are monthly meetings and the subcommittee weekly meetings.” reports Don Shove, QTTP representative.

Boeing is implementing lean manufacturing and this type of shift from one work organization system to another also means that many support functions must adapt.

Training is a one such example. QTTP does hourly training in Wichita and Portland and partners with LEAD in Seattle. This type of partnering can be an effective tool. For example, scheduling and conducting training must be done differently with the introduction of lean manufacturing. Before the introduction of lean techniques, training was scheduled on manufacturing “down” days. Workers could go off to training while machines were retooled or production realigned. Lean manufacturing processes preclude the use of this type of scheduling because down days are less frequent. Workers found that they were working longer stretches, so when a maintenance down day came along, most employees took the day off. Boeing found that up to 82% of those scheduled for training were not attending. This created an interesting dilemma: the new work organization allowed work to flow more smoothly and demanded fewer people but also required more training to be optimally effective. Employees were working harder and for longer periods so they were not using down time for training. QTTP’s commitment to appropriate training for the workforce drives its support and endorsement of LEAD’s introduction of new training techniques such as skill centers at the floor level and a mobile training unit that goes to the workers at their work area – the Lean Green Training Machine. A QTTP representative summed up this way, “The whole concept is that the closer we can get to the people on the shop floor, the easier it is to get that rear-end into the seat and actually get the training done.”

Health and Safety Institute

The Health and Safety Institute's mission is to reduce the cost of accidents to Boeing through its efforts at maintaining a safe workplace, and when workers are injured, working to return them productive tasks appropriate to their physical conditions. One of the programs that HSI manages is Return to Work (RTW). This program strives to get people back on the job more quickly after an injury. This was always important – but now with an aging workforce reduced by layoffs, it is even more important to Boeing.

The RTW program performs studies on a job and then tries to modify it so that the injured person can return to work more quickly and with less chance of being re-injured. Currently, 200-300 jobs are modified each year at a low average cost of \$768.55 per job for new/modified equipment. The Return to Work Program and the Job Site Modification Program are staffed with highly trained professionals who serve as vocational rehabilitation counselors for employees injured on the job.

The layoffs, combined with an aging workforce, are making the job of RTW more difficult. As the company downsizes, there are fewer jobs for injured workers to return to, hence, the workers may be placed in jobs with which they are less familiar, and the remaining workers are, on average, older – 48.5 years old versus 45 before the layoffs. Older workers may experience further injuries as their bodies have a more difficult time adjusting to the physical stresses of the new jobs. Pat Parmley, Boeing Co-Director of QTTP, explained,

RTW relies heavily upon being able to place a worker in a light duty work situation. Currently, those situations are gone. We don't have enough workforce out there to actually say we have light duty work to place this individual who has been injured back into. So it is really tough for them (RTW) to do what they are doing. It is really tough, at this time, for the company to give anybody special consideration.

The health and safety representatives are also concerned about the impact of work organization changes. The new work systems do not allow the same rotational opportunities or “breaks” that workers had under the previous system. In the past, occasionally workers needed to leave the work area to track down tools or parts

required to complete a job. Today in the lean manufacturing system, the parts are kitted and delivered to the work site. This improves productivity, but makes workers more vulnerable to repetitive stress injuries. The company will need to consider more than ergonomics and productivity in its work system design. Lean implementation in other companies includes job rotation and mechanisms for employee input such as team meetings that have a secondary effect of helping workers to vary their activities.

Bill Stanley, IAM representative to the Health and Safety Institute reported that, “There was a time when we (HSI) were ‘those guys over there’ and that’s the way it was. But in the last few years we’ve become part of the operations group, and instead of ‘you’re over there’, its now, ‘you are a part of what we need to get done and you are the right people to make this happen.’ As a result we’re right in the middle of the process, we’re part of negotiations, and we’re all working together. It has taken a lot of time to get here. Nothing happens overnight in the world we live in. We’ve come a long way.”

Career Guides

The most recent project that the joint programs have taken on is the development of Career Guides to assist hourly employees with the Employee Requested Transfer (ERT) process. The ERT process was the source of many complaints to the union because workers felt that they were being overlooked or skipped when they failed to receive a response to their requests for job transfers. The union decided that resolving these problems effectively would serve their members and the company. QTTP linked to this project because its network of career advisors has experience with the transfer process and knew about the problems through their interaction with the workforce. Gary Jackson explained,

Here you have this project that is normally a company function, and usually when the company undertakes a project of this size they pay consultants millions of dollars to come in and do it. We’ve pulled in a group of hourly people off the shop floor, who have the trust and the confidence of the other shop floor workers, to complete the task. The shop floor workers were more open and honest because they knew the information was going to be used for good. That is why it was so successful.

A brochure distributed by the Joint Programs describes the new process this way;

Employees now have an online resource to find out about the 480+ hourly jobs in the Collective Bargaining Agreement. The Quality Through Training Program Career Guides describe each of the jobs and list the targeted training that helps employees prepare for the next step in their career development with the Company. . . . Minimum skills and specific training have been identified for each of the jobs. Employees now have to meet minimum training requirements to file an ERT or take the challenge test if they already possess the skills.⁴

Managers filling positions will be required to use the ERT pool first before they hire someone from outside the company.

The requirements for each job were identified by subject matter experts (workers) actually doing the work. Each job was assigned to a skills team that chose the minimum skills required. Managers and subject matter experts verified the requirements and identified the appropriate training. The Career Guides contain links to the number of each job in the system at each facility, the number of existing ERTs for those jobs, a position summary, a listing of tasks, duties, and responsibilities, required knowledge skills and abilities, physical demands and potential hazards, and required as well as recommended training.

One sample Career Guide listing shown to LARA researchers as an illustration was four pages long. This is in contrast to the collective bargaining job description for the same position which is almost one full page. Clearly, the career guides provide workers with extensive information about the job as well as their potential opportunity to transfer into that position. With this information, the worker can decide whether to make the application for transfer and take the time to meet all the training requirements he or she might additionally need.

The Career Guides project is another instance where the credibility and relationship that the Joint Programs have developed with the company and the workforce paid off. Jackson describes it this way;

⁴ The New Hourly ERT Process for the Boeing Company, a brochure dated Summer 2001, published courtesy of the IAM/Boeing Joint Programs.

We are asked why the Union wants to get involved in the ERT system? That is a company system. But our members were pleading with us to fix this problem, and the management was frustrated too because of the problems with the old system...it took the union and the company working together to finally fix it.

A serious problem is being resolved for the workers, and the company has a pool of qualified people identified and ready to move into positions as they open up. The old system was cumbersome and positions were filled by hiring from the outside without identifying qualified current Boeing employees. At times, this has left the company open to lawsuits. When the Union joined the program, there were over 48,000 ERTs active for 5,800 employees. Now, an employee must have the required education before they can apply to a position, and management is contractually required to look at the candidate pool before hiring outside. In addition, the job description system is kept current by the employees as they use the system.

The joint nature of this program helped to make it more successful since it included shop floor worker involvement. It is interesting to note that the information in the career guides cannot be used in any part of the collective bargaining process – for example, it cannot be used in arbitration. The older job descriptions are used in this forum and while they are slowly being rewritten, many have remained unchanged since 1966.

Risk Taking

The QTTP activities described in this case study are helping to solve problems for the workforce as well as the company. It is easy to overlook the organizational dynamics that surround them. The program and its representatives must work carefully to avoid loss of the credibility and trust they have earned while still being open to challenges or opportunities that will serve the programs aims. The mission statement speaks to the goals of QTTP.

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It does not offer lessons in how to reach these goals. One QTTP representative explained some of the tensions that must be acknowledged and worked with when he said,

To give you an appreciation for how difficult this can be, some people just aren't wired to work from both perspectives. They are either very pro-company and anti-union or pro-union and anti-company. As administrators of the program, we have to constantly keep ourselves in check too because there are real political things that happen that can bend us one way or the other. It is a constant reminder everyday that we have to work together to get anywhere. We can work separately and go backwards or we can work together and go forward.

The politics in this situation can arise when people from the union or management are upset with the efforts of the QTTP. Leadership at the highest levels has the authority to take action against their representatives within the program. There can also be pressure from peers. For example, union members can complain to their leadership about program activities or vote them out of office at the next union election. Thriving within this environment can demand courage and thoughtful planning.

Gary Jackson sums up Joint Programs' attitude like this: "We get involved in areas where there are already existing groups doing that and some see it positively and some see it as a threat. We are meddling in someone else's business and we have to manage it by partnering with others. We do things that are problems for the workforce. If we don't take risks we don't go anywhere. So things we do involve risk." For example, he describes a major challenge in this way,

One of the biggest problems we have when we enter a new area, sometimes management might want pick a certain part of what we do – something that fits their plan. They'll invite us in and hear our concept and pick that one part they like (to implement). We have to take a stand and say 'you don't get to pick that one part, because just picking that one part won't work'. Sometimes it takes diplomacy to get them to understand the benefits of working together with us. Sometimes it takes their bosses to tell them that 'you need to work with these programs'. But that is the struggle that we have a lot of times.

It is easy to see a tension between a sense of urgency around innovative solutions and the concern over meeting the displeasure of those whom you represent. Those who work in the QTTP program appear to be quite adept at finding solutions which meet the needs of the workforce and serve to benefit the company.

Summary

Joint Programs started in 1989 as a collective bargaining agreement between Boeing and the IAM to advance workplace knowledge and skills training. Today Joint Programs sustains nine activities that provide substantial benefit to the company, as well as the employees. Many of the activities in which they are involved today were not what either party had envisioned when the programs were developed - nonetheless, these programs are successful. One critical point is that they existed prior to the specific needs of today's industry. Joint Programs has an existing relationship with both management and the hourly workforce that enables them to be flexible enough to respond to the new demands of the current market environment. Even through the latest difficult contract negotiation, Joint Programs not only remains intact, but it has expanded its services and usefulness to both the union and the company.

Teaching Notes

People are at the heart of new work systems, establishing stability and then driving continuous improvement. The Labor Aerospace Research Agenda (LARA) at MIT is committed to furthering our understanding of the human and institutional aspects of these new work systems, especially as they relate to broader issues of employment and vitality in the aerospace industry.

These case studies were written by a MIT-based research team and developed in conjunction with representatives from the site with help from representatives from the IAM. These case studies will be valuable to union leaders, labor educators, college professors, and human resource trainers as well as anyone interested in discussing current dilemmas in the aerospace industry around employment. They can be used as thought-starters in a classroom setting, in small discussion groups, or by individuals. This case study was prepared to exemplify the challenges of instability in the aerospace industry. It was written as a basis for dialogue and learning, not as an illustration of either effective or ineffective actions. There may be many possible answers to these questions. They are designed to foster constructive dialogue and action on these very challenging issues.

Potential Discussion Questions

- What are the strongest aspects of the programs described here? What are their greatest weaknesses/vulnerabilities? How would you overcome the vulnerabilities?
- When Boeing plans work system design, what will it need to consider in addition to ergonomics and production?
- If you were to institute a Joint Training Program to assist with goals similar to Boeing's Joint Training Program's expanded goals, without the relationship between management, union, and the workforce in place at Boeing, where would you begin?
- Do you think the LEADS new training techniques solve the problems training and the new work system poses for workers? Can you come up with improvements?
- Brainstorm some RTW solutions.
- What would it take to transfer this model to other organizations? Could a model like this span multiple organizations on a regional or national basis?

Kevin Long and Betty Barrett prepared this case with editorial and design input from other members of the LARA team. Copyright © 2004 Labor Aerospace Research Agenda, Massachusetts Institute of Technology. All rights reserved. To order copies of this case study, obtain a listing of LARA case studies, or request permission to reproduce materials, please email laraproject@mit.edu, write to the Labor Aerospace Research Agenda, Center for Technology, Policy, and Industrial Development, MIT, 1 Amherst Street, Cambridge, MA 02139 or call (617) 258-7207.