

### QC CIRCLES SPANS THE WORLD

#### *TQC FOLLOWS THE WAY*

##### **One in every 4, 5 workers takes part in a QC circle in Japan**

1987 was a landmark year for QC circle activities in Japan: marking the 25th year since QC circle was initiated. In this commemorative year, the QC Circle Headquarters commissioned a research organization to conduct a nationwide survey on the status of QC circle activities in Japan. Vol. 2, No. 1 of this journal carries part of the report of the first survey. The final report compiles the results also of the second survey. According to the survey, 65,800 business establishments in Japan carry out QC circle activities. This means that one in every four private establishments with more than 30 employees (sampling population) have a QC circle. The number of persons engaged in QC circle activities is 5,533,780, or 4.5th of some 25 million person employed in business establishments with more than 30 workers (full details of the research are shown on p.p. 4 ~ 26. "QC Circle" Magazine, December 1988).

QC circles are also spreading to many countries of the world. JUSE has been commissioned by the World Bank to send QC instructors to Burkina Faso in north Africa in the near future. When QC Circle activities start there, it will be the 60th country in the world to have QC circles in operation. Algeria and Ethiopia have already introduced QC circles in their countries. In Tunisia, the president will reportedly attend the QC Circle Annual Convention to be held soon. By request from the ILO, JUSE counselors

started giving QC circle instructions in Cyprus. In east Europe, Bulgaria was quick to adopt QC circles while Hungary started a QC circle award last year. Pakistan is a new member. Turkey participated and presented reports at the ICQCC (International Convention of QC Circle) held last year in Taipei. The ICQCC will be held this year in New Delhi, India (December 6 to 9) and in Tokyo in 1990, Jakarta in 1991 and Manila in 1992. 20 or so countries usually attend these annual conferences.

On the other side of the Pacific, the United States is planning to host international conference of quality circle in autumn 1991. In Europe, the European Federation of Quality Circle was organized two years ago by France and other nations. Central and South American countries are actively promoting QC circles and company-wide quality control. JUSE sent lecturers to Columbia for a five-day top management course. With the support of AOTS (Association of Overseas Technical Scholarship, Japan), Brazil and Argentina will send a group of experts to Japan to study Japanese total quality control. The two countries will hold two-day international conferences jointly in Buenos Aires and Rio de Janeiro from October 23 to 27, 1989. Mexico has sent trainees for four years to Japan to study Japanese TQC. Recent economic recovery in Mexico may prompt the country to restart the project.

The National Quality Award was created in the United States last year. Taiwan, a country actively promoting company-wide quality control, plans to found a similar award by 1990. Last year's Deming Prize in Japan attracted much attention; the prize was awarded to a services company for the first time. The focus of attention this year would be on American company challenging the prize. Having completed applications, the company is awaiting results of paper screening.

#### CONTENTS

QC Circles Spans the World -TQC Follows The Way. . . . .	1
The Report On The Fact-finding Survey of The Penetration of QC Circle Activities . . . . .	2
Research Method and Primary Estimates . . . . .	2
Questions and Hints For Activating QC Circle Activities. . . . .	4
Evaluation of Each Circle's Activity (Example) . . . . .	7
JUSE International Seminar on TQC for Senior Management . . . . .	8
ICQCC '90 Tokyo . . . . .	8



# THE REPORT ON THE FACT-FINDING SURVEY OF THE PENETRATION OF QC CIRCLE ACTIVITIES



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I have been anxious to know to what extent QC circle activities have penetrated in Japan. In the past, fact-finding surveys were made on only companies which are aggressively conducting QC circle activities, and therefore, the results only described how the activities are implemented and the problems experienced. In other words, the percentage of companies in Japan which are carrying out QC circle activities remained unknown.

In commemoration of the 25th anniversary of the founding of QC circles, the Union of Japanese Scientist and Engineers, "QC Circle" Magazine and QC Circle Activities Research Sub-Committee conducted a survey. The results were announced in the December 1988 issue of "QC Circle" Magazine.

The survey was made on approximately 223,000 private establishments in Japan with 30 or more employees. As a result of having sent the first questionnaire to the above establishments, 580 submitted their answers. A second questionnaire was then sent to the respondents, to which 211 responded. Though the number of answers collected were limited, it is believed to have been sufficient for understanding the trend.

### Survey Results

1) Of all the establishments surveyed, about 89 percent knew about QC circles. However, the fact that about 10 percent have no knowledge about QC circles raises an issue that will have to be tackled in the future. The degree of recognition was especially low in the wholesale/retail, construction and service industries.

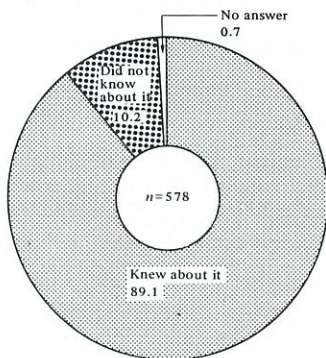


Fig. 1 Degree of Recognition of QC Circle Activities

2) As for the number of establishments conducting QC circle activities, as shown in Fig. 2 and 3, the rate of im-

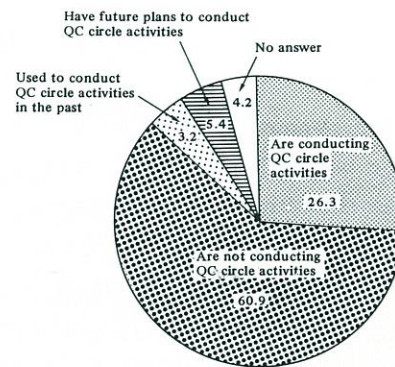


Fig. 2 Implementation of QC Circle Activities (on the whole)

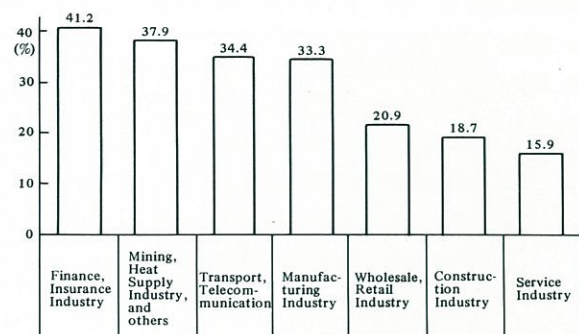


Fig. 3 Implementation of QC Circle Activities by Industry

plementation was about 26 percent. The rate was especially low in the industries of wholesale/retail, construction and service. This is understandable since QC circle activities originated and developed from the manufacturing industry, however, this is an issue which needs to be studied.

3) In terms of the promotion of QC circle activities, about 60 percent of the companies carrying out QC circle activities had a specific section for this purpose. It was encouraging to see that about 64 percent of the establishments positioned their QC circles as "part of the company-wide quality control" efforts as is prescribed in the "QC Circle Koryo." Such industries as manufacturing, finance, insurance, mining and heat supply showed a strong tendency to conduct only QC circle activities.



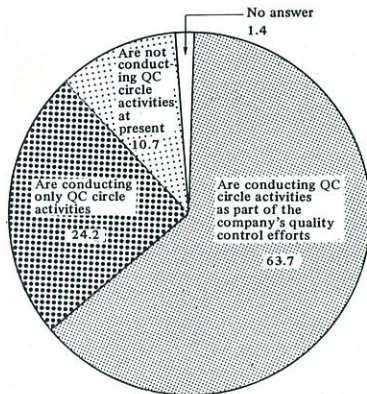


Fig. 4 How QC Circle Activities Are Positioned Within the Company

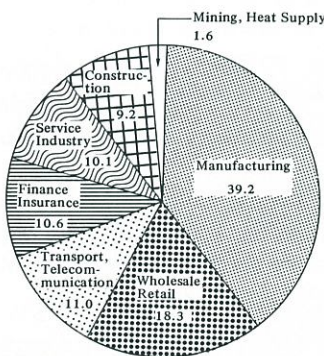


Fig. 5 How Many Employees are Participated in QC Circle Activities

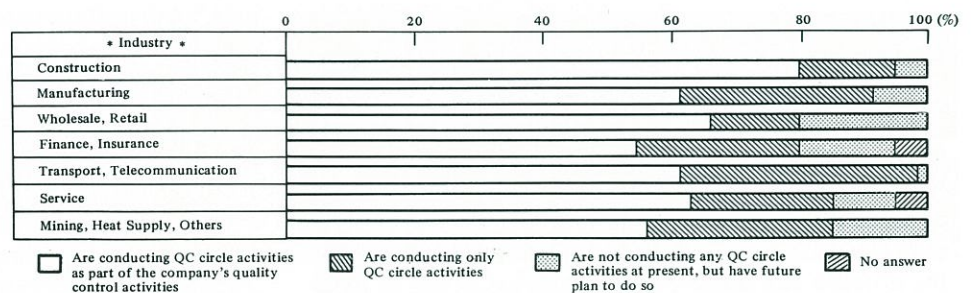


Fig. 6 How QC Circle Activities Are Positioned Within the Company (comparison among Industries)

## Research Method and Primary Estimates

### Research Subjects

The research was conducted on private business establishments throughout Japan which employ more than 30 workers (including full-time, part time and paid directors).

Establishments in agriculture, forestry, hunting, fishery, aquaculture and real estate were excluded.

For sampling, classification from "Business Establishment Year Book 1982" compiled by Statistics Bureau, General Affairs Agency of the Government was used.

### Research Method

- a: Number of samples
- b: Research method
- c: Date of research
- d: Number of respondents

### First Survey

- a: 4,000 business establishments were systematically sampled from the sampling framework.
- b: Mailed questionnaires
- c: January/February 1988
- d: Number recovered: 580 establishments  
Response ratio: 14.5%  
Aggregate: 578 establishments

### Second Survey

- a: 400 business establishments were randomly sampled from the no-answer samples in the first survey.
- b: Several questions were asked by telephone.
- c: July 1988.
- d: Number recovered: 211 establishments  
Response ratio: 52.8%  
Aggregate: 209 establishments

### Aggregation and method of estimation

The weighted method was used to estimate the ratio of QC circles in operation. Sampling rates in the first and second surveys were weighted for:

4) The survey report estimated that there are approximately 744,000 circles with about 5,534,000 members in Japan. However, there are only about 280,000 circles and 2,221,000 members registered to the QC Circle Headquarters (as of the end of November 1988), which means that the actual number of active circles is about 2.6 times that of the registered number of circles.

It may be concluded that though QC circle activities have penetrated and promoted in Japan, there still remain a number of problems to be dealt with. For example, there are still a number of establishments which know about QC circles yet do not conduct any such activities. This is why we need to make further effort for the penetration and promotion of QC circle activities.

- Seven industrial groups
- Six regional groups
- Three groups according to number of employees (combination of six groups)
- Weighted values of first and second survey response rates were combined to estimate the ratio of QC circles in operation.

### Estimates

- 1) Estimated ratio of QC circles in operation  
The estimate was  $26.3\% \pm 5.60\%$  (confidence coefficient: 95%). The above method was applied to the results of the primary survey (54.2%) and secondary survey (21.1%).
- 2) Estimated number of business establishments having QC circles  
 $222,113 (A) \times 1.01715 (B) \times 0.263 (C) = 65,800 (D)$
- 3) Estimated number of QC circles in Japan  
 $65,800 (D) \times 11.3 (C) = 743,540 (F)$
- 4) Estimated number of people engaged in QC circle activities  
 $65,800 (D) \times 84.1 (G) = 5,533,780 (H)$

- A: Number of business establishments as of 1981 (sampling population)
- B: Annual average growth rate of business establishments (geometric mean)
- C: Rate of QC circles in operation (research value)
- D: Estimated number of business establishments with QC circles in operation
- E: Number of QC circles per business establishment (research value)
- F: Estimated number of QC circles in Japan
- G: Number of people engaged in QC circle per business establishment (research value)
- H: Estimated number of people engaged in QC circle activities in Japan



# QUESTIONS AND HINTS FOR ACTIVATING QC CIRCLE ACTIVITIES\*



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We have compiled some questions and hints for activating QC circle activities. We hope that these will serve as hints for QC circle leaders and members in coping with problems they may face in carrying out QC circle activities.

## Q-1

*When some members tell you they cannot carry out any activities because they are busy, what can you do as a leader?*

### Hint

If they are busy with their work, it may not be possible to tell them to carry out QC circle activities by neglecting their work. But if you always give in you'll never get out of the situation and things will never improve. It will be necessary for you to take the proper measures so that they can carry out the activities. For example:

- 1) You might have a short meeting of 5 or 10 minutes by utilizing the morning and evening meetings.
- 2) You might hold the meeting during the lunch break or while eating the lunch.
- 3) You might hold regular meetings once or twice a month.
- 4) You might have the members carry out activities when they can.
- 5) You might incorporate recreation and other outside activities in QC circle activities.
- 6) You can grasp and announce the progress of activities by using a circle notebook or bulletin board if you cannot hold the meetings.

It will be necessary to be innovative in carrying out the activities in accordance with the company or the job's situation. What is important here is not to allow workers to stop the activities just because they are busy and cannot find the time. You should hold the meetings even if everyone cannot attend. The workers should wrestle with the activities with problem-awareness the more busy they are. Such will be an opportunity to strengthen the circle's ties.

## Q-2

*What consideration does the leader give regarding holding of QC circle activities which are participated by everyone?*

### Hint

We often hear leaders saying that the work is too busy and they cannot hold QC circle meetings or that they cannot get everyone to attend. How is the situation in your

QC circle?

QC circle activities must have a place of communication if they were to succeed. If you don't have even a single meeting the whole month just because you are busy, you are not working hard enough as a leader.

You must have at least one meeting a month if you want to continue the activities. While the leaders will face the most difficulty in carrying on the activities, if they cannot overcome it, they are not worth being leaders.

## Q-3

*How often do leaders talk with members?*

### Hint

The most important thing about QC circle activities is the communication between leaders and members.

If the leader does everything by himself there will be no sense in having a circle. Through communication he must win the members' trust.

Not only the morning and evening greetings (cheerful, always, the leader first and on a continuous basis), but the leader should actively talk to the members even during short breaks and on any subject be it work, members' health or recreation. The leader should make sure to talk to every member at least once a day.

## Q-4

*Do you sometimes incorporate outside activities such as recreation in QC circle activities?*

### Hint

Sometimes, in conversation and recreation away from work, we find that unexpected people have wonderful special skills. Leaders should not overlook these things and try to have them reflected in work. They should actively make use of outside activities so that they may communicate with members by shedding off the mental clothes.

Leaders should incorporate outside activities to divert the mind when the activities are not progressing as they should, a theme has been solved or after making the presentations. Come up with plans in which everyone can participate with comfort without spending too much money such as hiking, barbecue, dinner, bowling meet, fishing, or pick-

\* Gained from Chapter 7 of Quality Month Text No. 194 "Points for Activating QC Circle Activities" (in Japanese)



ing fruit.

You might also plan exchange sessions involving the members' families as well. To cover the expenses you might use the prize money from QC circle activities or suggestion (*teian*).

## Q-5

*When you have solved a theme, do you always make sure that the job is now easier to do?*

### Hint

When we look at QC circles' daily activities, we often receive reports than as a result of improvements, the goal of reducing the processes or hours has been achieved and so the improvements have produced great effects.

While the reduction of processes is itself a great effect, what is more important is the understanding that "As a result of the improvement, our job is now easier to do than before." If the members feel that their job is more difficult or harder to do as a result of the improvement, such is not a true improvement.

Please carry out activities by picking up themes, and when wrestling with improvements, do so with the goal of facilitating the work.

## Q-6

*As leaders, do you educate the members?*

### Hint

The level of QC circle activities is determined by the leader's ability, power of action and leadership.

So that the members may correctly understand the QC circle activities and enhance their ability to solve problems, the following education and exercises are necessary.

- 1) If you have your company's version of *Guide on QC Circle Activities* or *QC Circle Guidebook*, you should have the members read and study them.
- 2) If the above books are not available, you should have them study *QC Circle: Essential Points* or *Basics of QC Circle Activities*.
- 3) You should have them study the QC Story. If they carry out activities according to the procedures outlined in it, they will be able to efficiently solve the problems through the PDCA cycle.
- 4) They should study the seven QC Tools. They should start out with the graph, Pareto chart, fishbone diagram, checksheet and stratification. They should immediately use what they have learned in the QC. They should study the histogram, scatter diagram and control chart after they have acquired some know-how regarding the circle activities and start from simple techniques.
- 5) They might also study the QC Story and techniques by utilizing the *QC Circle* magazine or the company's version of improvement case book as learning aids.

## Q-7

*What does leadership mean, and are you taking leadership?*

### Hint

Leadership can be defined as follows. It is the power that some members of a group have in positively influenc-

ing the other members through communication so that the group may achieve its goals or solve tasks. So a leader must have the proper disposition, ability and leadership. He also has position and duties. Generally speaking, leadership means the ability to bring the group together and lead it toward a goal.

The General Electric company of the United States defines leadership as follows by assigning the work of a leader to the six letters making up the word LEADER.

*L:* Listen: the leader must carefully listen to what his subordinates say.

*E:* Explain: he must explain well.

*A:* Assist: he must assist his subordinates.

*D:* Discuss: he must discuss things thoroughly with them.

*E:* Evaluate: he must correctly evaluate their performance.

*R:* Response: he must take the responsibility.

It must not be forgotten that GE stresses the first task of listening as the most important work of a leader.

## Q-8

*Some of our members are not interested in QC circle activities. What can we do to involve these people?*

### Hint

You must first find out why they are not interested. And to involve them in the activities it will be important to have them develop an awareness as members by contriving some method which suits them. The goal of activities should not only be to solve problems. It is also necessary to start from building the harmony as a group.

You might also ask your superior to have such members participate in outside QC circle conventions or QC or QC circle study meetings held in or outside of the company. This will stimulate them.

What is important is for the entire QC group to devise some method to carry out the activities as a group rather than labeling the person as "not interested" from the beginning.

## Q-9

*There are circles which are carrying out QC circle activities just for the purpose of making presentations. How should we guide these circles?*

### Hint

It is necessary to find out why they are carrying out activities just for the sake of making presentations. However, while they might only be interested in making presentations, they have problem awareness and are trying to solve problems. Such an attitude must be said as commendable.

While it might be an embellished QC Story or a QC technique learned only for the sake of learning, we must value their desire of wanting to be evaluated. It will be necessary to have them understand that their activities have problems by making use of this opportunity and guide them to true QC circle activities.

It will be unwise to stop their activities just because they are only for the sake of making presentations. If they can experience the joy of true QC circle activities (the experience the joy of true QC circle activities (the experience of



success, the feeling of accomplishment, satisfaction, and confidence in their own abilities), they will go on to the next level of activities. What is important is for the circle to carry on activities on a continuous and daily basis.

Also, perhaps the true role and work of promoters is not only to criticize QC circle activities from outside but to provide the education and guidance to lead circles to true activities.

## Q-10

*Sometimes superiors seem to be demanding us to carry out activities just for the sake of producing effects. How should we regard this?*

### Hint

While QC circle activities are voluntary activities, they are activities carried out in a company. It is natural for superiors to expect the circles to produce effects. If the superior's demand is in meeting with the circle's level, why not give it a try?

If the superior is too demanding, you should have a good talk with him, put the circle's ideas and the superior's problems on the table, adjust the two and determine the demand's level.

And if you produce effects and experience the feeling of accomplishment and satisfaction, you can wrestle with activities of a higher level. This will improve the teamwork and human relationship, each member will grow, and materializing will be a cheerful workshop in which you will want to work.

Also, QC circle activities are something which should be evaluated for the process of activities in addition to their effects. Activities which are modest but which steadily accumulate the results based on activity plans are also excellent activities.

The superiors should not forget that, rather than just hoping for the effects, they are expected as QC circle promoters to actively support the QC circle activities so that they may produce effects.

The important thing to remember about QC circles is that only when they challenge high goals they can achieve the goals through all the members' willingness and wisdom. As a result, such circles will grow into ones which can truly do the job.

## Q-11

*Sometimes superiors seem to force us to carry out QC circle activities. How should we regard this?*

### Hint

Why are they forcing the activities? Please review the existing situation of the activities. Can you find some reason?

QC circle activities will not succeed or become true ones unless by valuing their voluntary nature. This is because the desire to go to the next activity theme will only come out when the members experience the feeling of accomplishment, satisfaction and confidence in their abilities. This will only come about through a series of steps from determining the activity themes on their own, making the improvements and confirming the results.

If you feel that you are being forced something by your superior or the company, have a good talk with your superior. This is because circle members are prone to think of advice by superiors as something forced on them.

You should have a gut-level talk with the superior regarding the goal and necessity of QC circles and about the activities themselves. If necessary you might obtain his support.

The fact that the superior is highly interested in the activities and is willing is a desirable thing for the circle members as well. More problematic is the case in which he is disinterested and leaves everything up to the circles.

## Q-12

*Please give us some hints so that we can continue the QC circle activities for a long time with joy.*

### Hint

Our belief is that just like work, QC circle activities are not something which are pleasant or fun. What do you think? Rather, as far as the process of problem solving is concerned they are tough activities.

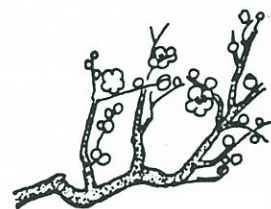
But when all of the circle members join their efforts and solve a problem, perhaps they can experience the feeling of accomplishment, satisfaction and confidence in their own abilities which cannot be bought with money, and perhaps this will lead to genuine joy.

For example, perhaps the joy of sports and recreation is that the members can immediately see the results of their efforts and cooperative work. So if you can manage the circle activities just like sports and recreation, perhaps you can experience the same kind of joy.

So that you may continue your QC circle activities for a long time with joy, please manage them innovatively by taking heed of the following:

- 1) You should be aware of the purpose and necessity of QC circle activities and have high goals.
- 2) You should carry out voluntary activities in which you can be creative.
- 3) You should ensure that the results of activities can be seen.
- 4) That the activities are justly evaluated.
- 5) That you obtain the superior's (promoter's) support.
- 6) You should sometimes incorporate sports and recreation in the QC circle activities.

The foregoing have been some of the problems you might face in carrying out QC circle activities. They have been compiled in the form of 12 questions and hints. It is our hope that you make use of them in your QC circle activities.





## EVALUATION OF EACH CIRCLE'S ACTIVITY [EXAMPLE]

EVALUATION FACTOR	Level of Circle	Fledgling Under 1 year	Intermediate standing 1 to 2 years	Veteran More than 3 years	Top More than 3 years
Frequency of group meetings	times/month	1	2	3	Over 3
Percentage of attendance at meetings	%	0 ~ 65	66 ~ 85	86 ~ 100	86 ~ 100
Percentage of speakers at meeting	%	0 ~ 85	86 ~ 100	100	100
No. of objectives in action	No.	0	1	2	Over 2
Level of objective	Level	Easy	Reasonable	Difficult	Difficult
No. of objectives fulfilled	No./Year	1	2	3 4	Over 4
Progress of planned activity	Difference between plan and execution	-6 months	-5 ~ -2	-1 ~ 0	-1 ~ 0
Ratio of dutysharing	%	0 ~ 50	51 ~ 100	100	100
Q7 methods utilization	Kinds	1 ~ 3	4 ~ 7	4 ~ 7	4 ~ 7
N7 methods utilization	Kinds	0	9 ~ 3	0 ~ 5	0 ~ 7
IE/VE methods utilization	Kinds	0	0	As necessary	
No. of presentations within section	No./Year	0	1	1 ~ 2	1 ~ 2
Company level at which presentation was made	Level	-	Factory	Company-wide	Prize of excellence
Circle self-evaluation score	Score	0 ~ 70	71 ~ 85	86 ~ 100	86 ~ 100
Supervisors self-evaluation score	Score	0 ~ 35	36 ~ 42	43 ~ 50	43 ~ 50
Subscription to QC Circle magazines	No. of books	0	1	1	Over 1
Frequency of study meetings	Times/Year	1	2 ~ 3	Over 4	Over 4
Financial impact	¥10,000/man. year	0 ~ 10	11 ~ 20	21 ~ 24	Over 25
No. of improvement proposals	No./man. year	6 ~ 11	12	Over 13	Over 13
Awards for annual activity	Level	-	-	Awards by Plant Manager	Awards by President
Awards for presentation at mass meetings	Level	-	-	Local mass meeting	Silver prize, Golden prize
Publication in 'QC Circle' magazine	Level	-	-	Published	FQC Prize
3-year activity plan	Yes/No	No	No	Yes	Yes

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One year (6 issues) subscription: 4,500 yen

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**ICQCC '90  
INTERNATIONAL CONVENTION ON  
QC CIRCLES 1990 TOKYO  
October 24–26, 1990**

**CALL FOR PAPERS**

All papers offered for presentation would preferably be related to the following subjects.

1. Case reports implemented in the workshop by QC Circles.
2. Reports on the promotion of QC Circle Activities.
  - A) Characteristics and Problems of QC Circle promotion.
  - B) Education and Training of the QC Circle instructors, facilitators, leaders and members.
  - C) Nationwide Review on the QC Circle Activities.

About 500 words English abstract should be submitted to the ICQCC'90 Tokyo Organizing Committee in JUSE not later than February 1, 1990.

All the information are available at JUSE.