

INDIAN FOUNDRY JOURNAL



ISSN 0379-5446 Vol. 51 No.12 December 2005

Partnering for better process control & consistent results.



This aluminium foundry was facing inconsistency in casting quality. Foseco joined hands with them to formulate a melt treatment practice with better process control to achieve consistent result. The casting thus produced had better 'as-cast' surface finish, was leak proof and porosity free.

Foseco believes it only succeeds when its customers succeed. Foseco's strength is its ability to compliment its customers expertise & resources. This comes from our intimate knowledge of foundry business and processes coupled with technical skill, experience and a willingness to explore new ideas. Come to us. We will make sure our resources are available to you.

For more details please contact your nearest Foseco representative or write to us.



Foseco India Limited,
Sanaswadi, Tal. Shirur,
Dist: Pune 412 208

*Solutions Partner to the
Expert Foundryman*

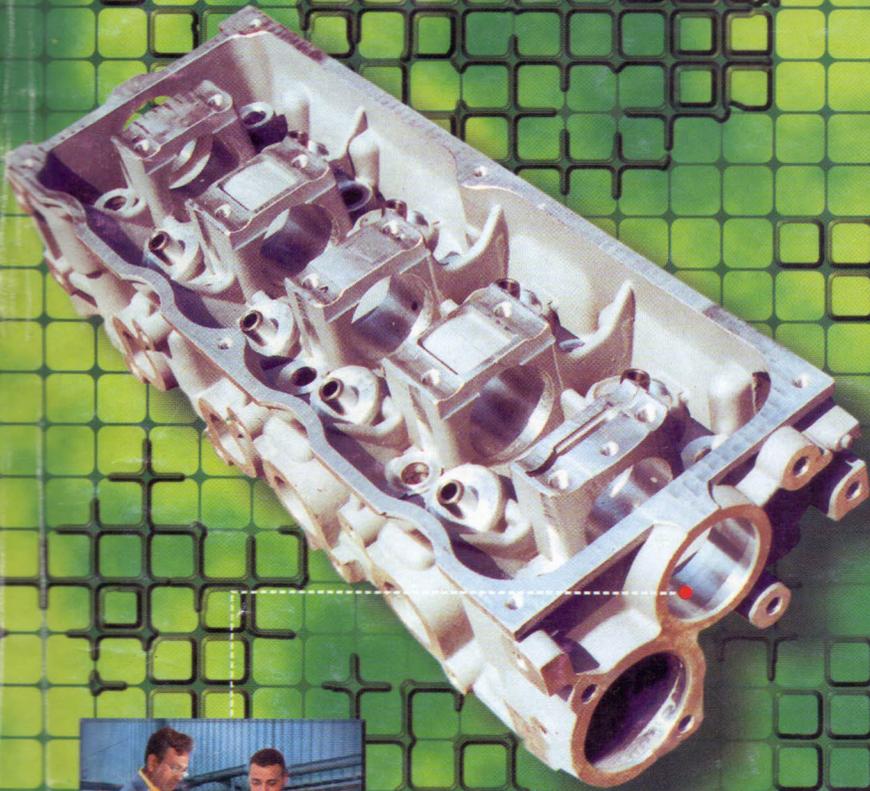
INDIAN FOUNDRY JOURNAL



ISSN 0379-5446

Vol. 51 No.12 December 2005

Partnering for better process control & consistent results.



This aluminium foundry was facing inconsistency in casting quality. Foseco joined hands with them to formulate a melt treatment practice with better process control to achieve consistent result. The casting thus produced had better 'as-cast' surface finish, was leak proof and porosity free.

Foseco believes it only succeeds when its customers succeed. Foseco's strength is its ability to compliment its customers expertise & resources. This comes from our intimate knowledge of foundry business and processes coupled with technical skill, experience and a willingness to explore new ideas. Come to us. We will make sure our resources are available to you.

For more details please contact your nearest Foseco representative or write to us.



Foseco India Limited,
Sanaswadi, Tal. Shirur,
Dist: Pune 412 208

*Solutions Partner to the
Expert Foundryman*

Quantification of Quality of Work-Life in Foundry Industry — A Simple Approach

Sarang Bhola¹

Quality of Work Life (QWL) embraces significant aspects of work life-related activities. For more than three decades a sizable literature has been developed on QWL. The present article is the outcome of an effort to quantify QWL in foundry industry. The model of implementation of QWL has been discussed.

INTRODUCTION

Quality of Work Life (QWL) embraces significant aspects of work life-related activities. The theme for the QWL has been wide and varied in nature. Researchers have explored many dimensions of QWL from different angles.

On the examination of definitions, it was learnt that there are two concepts of QWL — one narrow and another broad. The former explains workers' participation in management and experiments to increase employee participation etc. Richard E. Walton proposed eight conceptual categories for QWL viz. adequate and fair compensation, safe and healthy working conditions, opportunity to use and develop human capacities, future opportunity for continued growth and security, social integration in work-place, social relevance of work and balanced role of work in the total life span. The present investigation is based on this broader concept of QWL.

Quantification of QWL is a difficult task. In Indian context, no comprehensive attempt has been made to quantify QWL. The present study was undertaken to quantify QWL in the foundry industry and also to develop a model to implement QWL.

METHODOLOGY

The data used was derived from primary sources. Twenty-three (23) foundry units were selected for the study through proportionate stratified random sampling. The stratification was done on the basis of the ownership of the organisation i.e. Public Limited (Pub), Private Limited (P.Ltd.) and Proprietary (Prop.) concerns. The

1. Lecturer, Amrutvahini Institute of Management and Business Administration, Sangamner-422 608, Dist. Ahmednagar, Maharashtra.

sample units were selected from Kolhapur District of Maharashtra, India, the renowned hub of foundry and machine shops.

Twenty-seven (27) executives and 47 workers from 23 foundry units were interviewed with a set of structured questionnaires. Document I was for the office bearers to ascertain the general information, document II was for the top officials, document III was for the workers and document IV was handled exclusively by the researcher.

The outcome of the quantification of QWL highlighted the areas in which the sample units had limitations and has scope to improve. Besides quantification of QWL, a few useful purposes may be achieved through such an effort viz., identification of strengths and weakness, use of QWL model as self-assessment tool and to set the benchmark for QWL improvement in short run.

TOOL ADOPTED FOR QUANTIFICATION

The independent variables were developed and weighted crudely on the basis of pilot testing. The weights were allotted to every variable under the category, which reflect on the QWL. In the quantification model, ninety-four variables were housed in eleven categories, which carried hundred weights.

The assignment of weights was based on observation, response from executives and workers to the questionnaire.

Non-existence or absence of such activities carried no marks. In the questionnaire and observiour where more than two options facilitate to answer the question, in that case complete positive response has been considered to assign the weight because the same is true representation of QWL factor. Besides assigning the weights a scheme for negative weights was also developed and applied to unsatisfactory conditions such as minimum wages, bonus, overtime pay, provision of medical or E.S.I., schemes for employee safety, drinking water and first-aid.

Technical Paper

Table-1 : Quantification Category Weightage

Sr.	Categories	Maximum Weights	Minus Weights
1	2	3	4
A	National & International Quality Award	2	
B	Adequate and Fair Compensation	13	9
C	Safe and Healthy Working Conditions	22	5
D	Immediate Opportunity to Use and Develop human Capability	16	1
E	Future Opportunity for Continued Growth and Security	6	1
F	Social Integration in the Work Organisation	9	
G	Constitution in the Work Organisation	9	2
H	Balanced Role of Work in the Total Life Span	4	
I	Social Relevance of Work	4	
J	Management Perception	4	
K	Collective Agreement Signed on Terms of Work	11	
	Total	100	18

The total actual weights have been converted into qualitative grades.

Marks Scored	Grade Obtained
70 and above	A (High)
50 to 69	B (Medium)
36 to 49	C (Low)
35 or Below	D (Poor)

The investigator interrogated each category in detail to see the effect. The final weight obtained by the unit is the summation of weights obtained by each of the eleven categories out of a total of hundred weights. Hence, for detailed analysis, it is important to study each category thoroughly.

FINDINGS OF THE SAMPLE SURVEY

Quantification was made of each sample unit and the total weights were converted into grades as follows (Table-2).

From Table-2 it is evident that 50% public limited and 42.85% private limited units secured A grade, 50% public limited and 14.28% private limited and 7.14% proprietary units secured B grade, 14.28% private limited and proprietary units each secured C grade and rest 28.57% private limited and 78.57% proprietary units secured D grade in the quantification.

Of the total foundry units 17.39% obtained A grade and 13.04% obtained B & C grades of QWL. The large number of units i.e. 56.53% obtained D grade. It is found that public limited units obtained good grades i.e. A and B but private limited and proprietary units are distributed in all the grades.

However, the level of QWL does not depend only upon the nature of ownership. Most of the proprietary units existed in D grade, only because the magnitude of investment in those units was less compared to that in public and private limited units. The proprietary units did not make any investment in human resource, technology and infrastructure, which are necessary for QWL programme.

Table-2 : Grades Obtained by Sample Foundry Units

Sr.	Weight Grading	Ltd.	%	P. Ltd	%	Prop.	%	Total	%
1	A - above 70 Points	1	50	3	42.85	0	0	4	17.39
2	B - 50 to 69 Points	1	50	1	14.28	1	7.14	3	13.04
3	C - 36 to 49 Points	0	0	1	14.28	2	14.28	3	13.04
4	D - 35 and below points	0	0	2	28.57	11	78.57	13	56.53
	Total	2	100	7	100	14	100	23	100

Technical Paper

CATEGORY-WISE ANALYSIS

In the category-wise analysis, the weight of each category has been converted in qualitative grades i.e. for A grade 70% and above, for B grade 50% to 69%, for C grade 36% to 49% and for D grade 35% and below. The converted weights are analysed as follows:

1. Quality Award Recipient - The units that are recipients of Quality awards viz. ISO 9000, QS9000, Baldrige Award and CII Award, etc., necessarily implement the QWL parameters. Among the public limited, private limited and proprietary units respectively, 50%, 57.14% and 78.57% have not bagged any such award.
2. Adequate and Fair Compensation - It has been evident that all the public limited units obtained A grade. 42.86% of each private limited and proprietary units obtained negative weights.
3. Safe and healthy working conditions - Most units are distributed over A to D grades. Of proprietary units 50% obtained D grade.
4. Immediate opportunity to use and develop human capability - 26.09% of total sample units obtained C and D grades. Overall, the condition of immediate opportunity to use and develop human capability was comparatively good since majority of the units are engaged in jobbing work and ancillary activities.
5. Opportunity for continued growth and security - public limited units obtained D grade whereas 60.87%, 13.04% and 4.35% of total units existed in D, zero and minus grades respectively.
6. Social integration in the work organisation - Majority of units are in A and B grades which signify a satisfactory condition.
7. Constitution in work organisation - 28.57% of each private limited units obtained C and negative grades. Of proprietary units 14.29%, 35.71%, 7.14% and 21.43% obtained C, D, zero and negative grades respectively.
8. Balanced role of work in total life span - Balanced role in total life span secured good grading - 73.91% obtained A grade.
9. Social relevance of work - All units obtained either A or B grades which signifies satisfactory situation.

10. Management perception regarding QWL - The investigator interrogated executives about the effect of QWL programme on productivity, sales, profit and quality of product. Most of management personnel have found perceptive importance of QWL programmes. This perception may act as a motivation to implement QWL programme.
11. Collective agreement signed on terms or work - 60.87% units have not signed any such agreement.

MODEL TO IMPLEMENT QWL

The study has provided adequate clues to the shortcomings of the sample units. There is scope for the improvement in QWL. These shortcomings encouraged the investigator to develop a model to improve QWL in the foundry industry.

The suggestive model is presented below in the form flowcharts (Fig. 1).

The model recommends certain steps,

1. The first step is management's decision to implement QWL programme.
2. The second step is to conduct self-assessment test on the magnitude of shortcomings in the present work-life situation at micro level. The views of workers, supervisors, office bearers and managerial staff should be considered to find out shortcomings in the present work-life.
3. The third step is to find out remedies to overcome the present shortcomings in the work environment. While doing this exercise, employees may notice that some changes are taking place in the attitude of the management, which may be opposed, by the workers or union. These activities by top management may arouse suspicion in the mind of employees or union. Counselling employees on QWL programme is necessary to remove the misunderstandings.
4. The next step suggests to develop work culture for QWL, training and development activity for the awareness of the concept and attitudinal changes; implementation of labour laws and an effort to provide the job security. While going for this step, the intervening variable may be lack of resources like inadequate finance and unavailability of faculty for the training.

Technical Paper

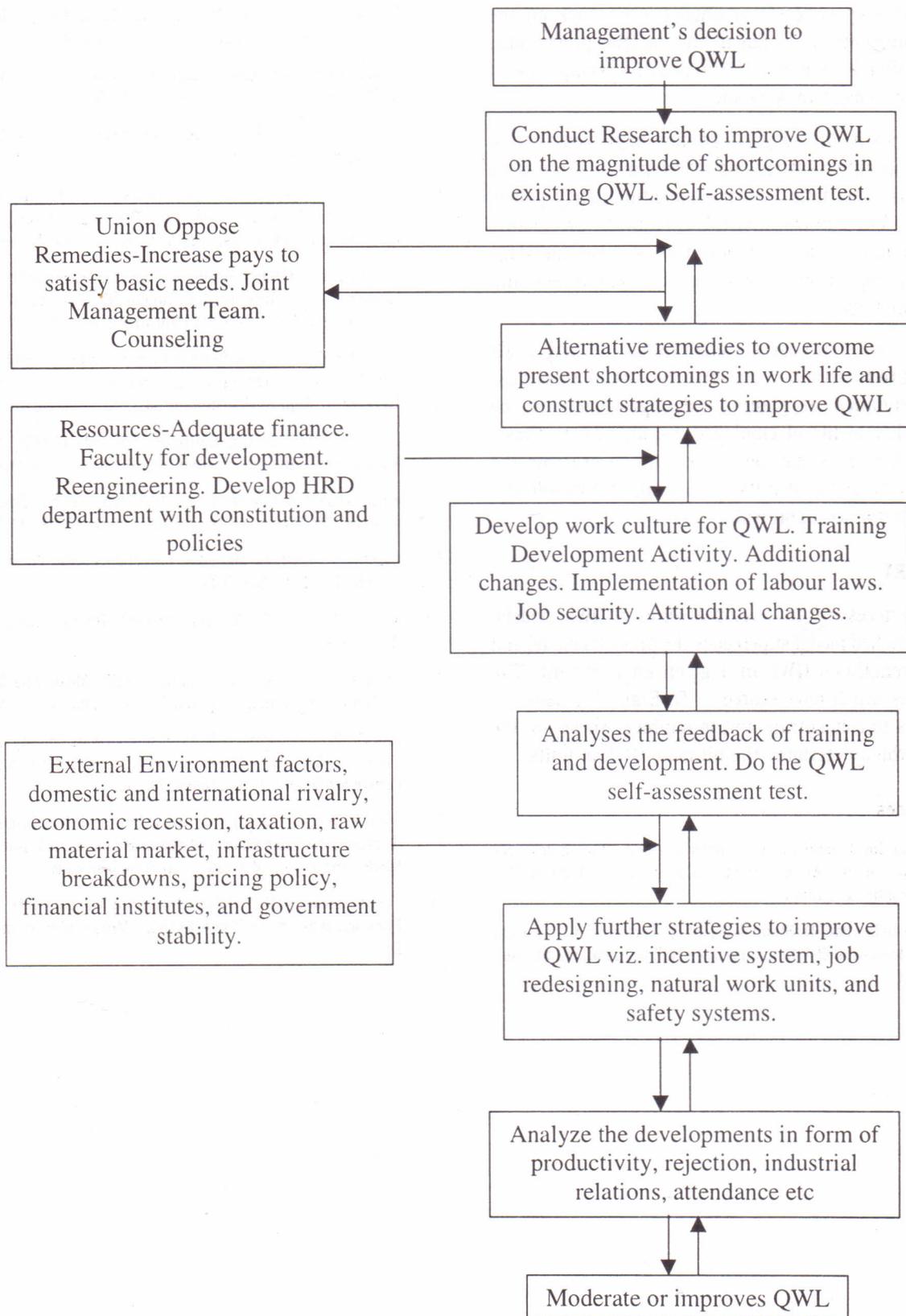


Fig. 1 : Model to Implement QWL in Small-Scale Foundry Unit.

Technical Paper

5. Fifth step suggests arranging a feedback on the training and development and the QWL programme. Feedback may reveal the positive symptoms of improvement in work-life.
 6. The sixth step suggests gradual implementation of the incentive system, job redesigning, natural work units, flexi time, and implementing safety policy, etc. The environmental variables, preferably external may act as hindrances because this stage may require more investment in employees and technology.
 7. The last step suggests analysis on the magnitude of productivity, rejection, industrial relations, attendance, accidents, and improvement in the quality of life of employee. In addition to these, further tests may be carried out to examine the validity of the results viz. moral, motivation and performance appraisal.
3. Drucker Peter F. (1988). 'Management : Tasks, Responsibilities, Practices', Heinemann Professional Publishing.
 4. Ghosh Subrathesh, (1993). 'Improvement of Quality of Worklife at Microlevel', in, 'Productivity', Vol. 34, No. 3.
 5. Goswami Dr. V. G. (1996). 'Labour and Industrial Laws', Central Law Agency, Allahabad.
 6. Hackman Richard J., 'Designing Work for Individuals and for Groups', In Hackman, Lawler and Porter (Eds.) Perspectives on Behaviour in Organisation. McGraw - Hill Book Company.
 7. Jain Sangeeta, (1998). 'Quality of Work-Life of Indian Industrial Workers'. In P. P. Arya and B. B. Tandon (Eds.) Human Resource Development, Deep & Deep Publications, New Delhi.
 8. John Arnold, Ivan T. Robertson, Cary L. Copper, (1996). 'Work Psychology; understanding Human Behaviour in the Workplace', Reprint, Macmillan India Ltd., New Delhi.
 9. John V. Grimaldi and Rollin H. Simonds (1975). 'Safety Management', Richard D. Irwin INC. Homewood, Illinois.
 10. Keith Davis and Newstrom John W. (1995). 'Human Behaviour at Work', McGraw - Hill Book Company, New York, 9th Edn.
 11. Logothetis N. (1997). 'Managing for Total Quality', Prentice Hall of India Pvt. Ltd., New Delhi.
 12. Mehata M. M. (1955). 'Measurement of Industrial Productivity', World Press.
 13. Naval Karrir and Amulya Khurana (1997). 'Measuring Quality of Work-Life : A Simple Approach', 'Paradigm', Vol. 1. No. 1.
 14. Rau Dr. R.H.G. (1996). 'Self-Assessment Using Quality Awards Criteria', 'Quality - Indian Efforts', Compiled by, National Centre for Quality Management, Mumbai.
 15. Straus George, 'Quality of Work-Life and The Union', in, 'Perspective on Behaviour in Organisations', edited, Hackman, Lawler and Porter, McGraw - Hill Book Company.
 16. Yusuf Anwar S. M. (1995). 'Quality of Working Life - As a Function of Socio- Technical System', Mittal Publications, New Delhi.

SUMMARY

It is necessary to develop a series of QWL models. Every enriched model supercedes the previous model and thus strengthens QWL in a given environment. The categories which have scored C, D, E and F grades are the areas to concentrate and to improve. These are the factors which determine the ultimate QWL of units.

References

1. Bernardin H. John and Joyce Russell (1993). 'Human Resource Management'-An Experiential Approach, McGraw-Hill International Edition.
2. Dale Yoder, Paul D. Staudohar (1986). 'Personnel Management and Industrial Relations', Prentice Hall of India Pvt.Ltd., New Delhi.