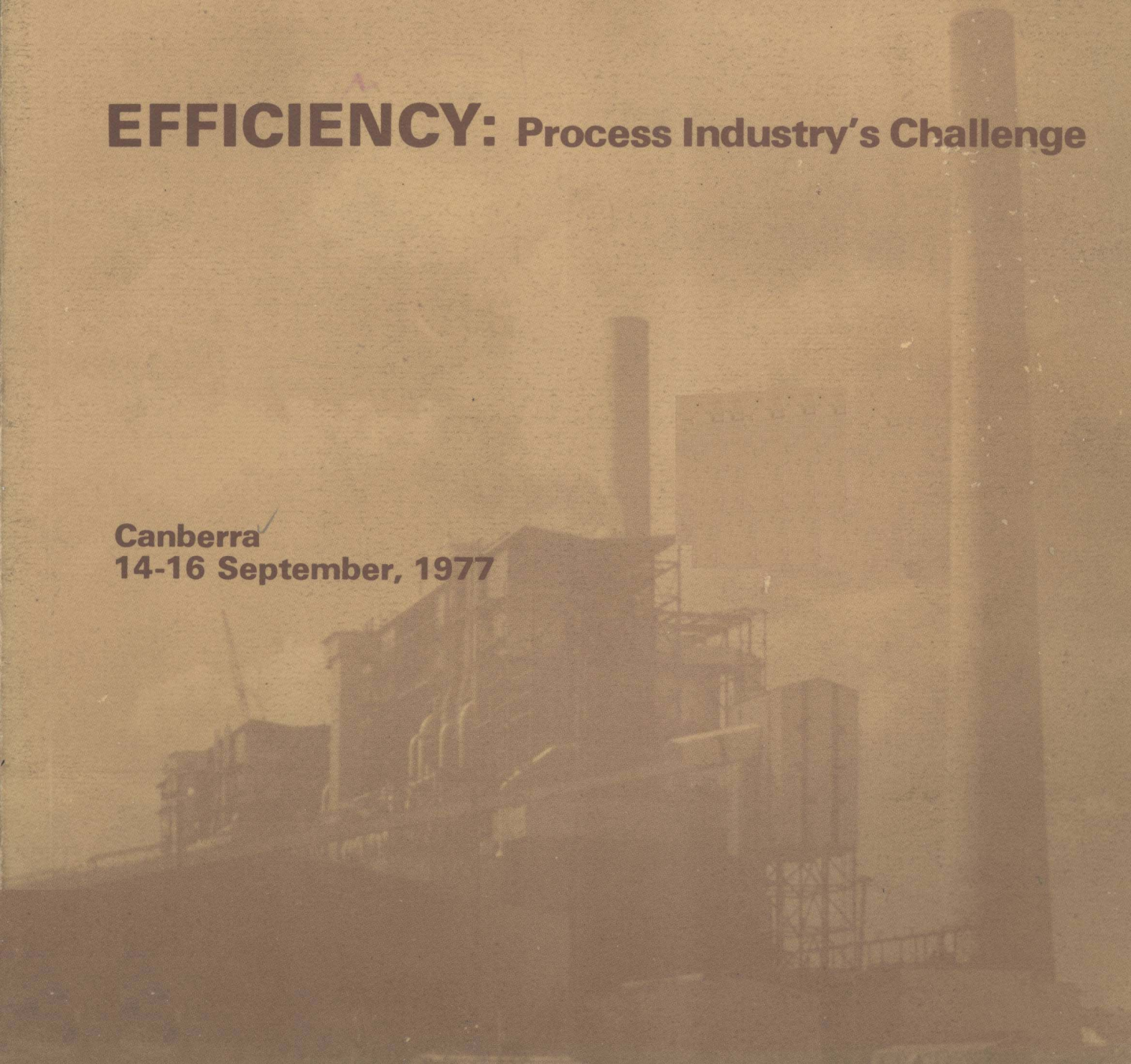


chemeca 77

5th Australian Conference on Chemical Engineering

EFFICIENCY: Process Industry's Challenge

Canberra
14-16 September, 1977



chemeca 77

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Organised by

The Institution of Chemical Engineers in Australia
in association with

The Institution of Engineers, Australia
and

The Royal Australian Chemical Institute

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Preface

It is fitting that **chemeca 77**, the Fifth Australian Conference on Chemical Engineering, should have as its theme "Efficiency — Process Industry's Challenge".

In recent years, the Australian chemical industry has felt increasing pressures from overseas. The adverse cost structure brought about by high feedstock costs and economics of scale has meant that Australian chemical engineers have had to strive especially hard to improve the efficiency of existing plants to make them more competitive. It is no small credit to those involved that today the chemical industry is one of the more successful of the manufacturing industries. Growth seems assured and future plants are likely to be of world scale.

It is the hope of the Organising Committee that the papers presented at **chemeca** will provide a basis for future development and will stimulate those in the process industries to interact and innovate so to ensure the future health of this important area of industrial activity.

C.J.D. Fell,
Chairman,
Organising Committee.

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Human Resources Engineering for Improved Company Results

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SUMMARY The Human Resources Engineering approach to management involves the individual, the team and the company. The system is derived from behavioural theory and case study examples are presented to illustrate how the use of this approach leads to improved company results.

1 INTRODUCTION

Whenever two or more people are observed doing the same job, it can be anticipated that one will perform more effectively than the others. How can this difference in performance be accounted for?

One explanation may be greater ability due to more experience or to greater aptitude.

On the other hand, performance differences may hinge on motivation - the more successful worker may put more effort into the job - he may try harder⁽¹⁾.

Human Resources Engineering focusses on the factors underlying motivation and the ways in which motivation contributes to individual effectiveness. We will discuss the ways in which self-motivated individuals, combined into successful management teams, lead to improved company results.

2 THE INDIVIDUAL

Effectiveness can be learned! The performance of the individual can always be improved! Put another way: practice makes perfect with understanding, thinking and application.

The above are very general statements that can be and are applied to everyday people in everyday life. Many examples can be cited, especially in sport, art or hobbies. Individuals attack with enthusiasm or gusto the serious problem of reducing their golf handicap.

So often this same enthusiasm is not translated to the individual's work environment. Why is this so? No enthusiasm to reduce rejects or errors. No enthusiasm to increase output or yield. No enthusiasm to increase sales or margins. No enthusiasm to improve performance or profit.

The boss has this enthusiasm - hopefully. Sometimes it is communicated and we find enthusiastic individuals. Frequently it is killed or stifled, especially in the middle and lower rungs of the organisational ladder. These people can make a mighty contribution but so often they are not allowed - there is no delegation for example. However, they can't be stopped from exercising a knowledge authority and perversely, through frustration, making a negative contribution.

To use a sporting analogy, they are in the game but they are not told the rules, shown the court, given a ball, or allowed to play.

An overstatement - only in degree, because people pay lipservice to what is commonly called the "need for communication".

How clear and precise is their job definition or more importantly their understanding of the results they are to produce or "the reason why" behind their activities? Our evidence over several years with hundreds of cases, indicates that on the average, there is only a 60% understanding of the key result areas of the person's function.

Thus we have one important reason why people produce 80% of their results from 20% of their effort - 80% of the latter is simply misdirected.

The first step, therefore, is to develop, with the individual, a list of the Principal Accountabilities for his function. Table 1 contains an example of such a list of Principal Accountabilities. This sample list is from an actual case history and was arrived at after analysis and clarification.

TABLE 1

Principal Accountabilities
Systems Development Manager

1. Direct and control the development of complete systems to gain full acceptance by the user.
2. Establish priorities for management information systems development to gain maximum advantage to the company for funds employed.
3. Oversee the development of a complete data bank to extend the application and benefits of computer services.
4. Submit period reports on systems being developed and initiate corrective action where necessary to maintain scheduled progress.
5. Liaise regularly with users to gain understanding and acceptance of computer services and to generate new ideas for systems development.
6. Lead, direct and motivate staff to develop both their professional skills and their user communication.

At this stage, the individual at least has an idea of the true key result areas of his position.

In order for the individual to achieve results in these key areas, three variables are important: (i) the motivation of the individual, (ii) the ability

of the individual, and (iii) the organisational reward system - both formal and informal.

Motivation theory postulates that human action is a means of satisfying needs perceived by the individual.

Maslow⁽²⁾ grouped all needs into five categories (1) physiological (2) safety (3) social (4) esteem (5) self-actualisation. These categories form a hierarchy with physiological needs at the lowest level and self-actualisation at the highest. Maslow suggested that each need becomes activated only after the lower level needs have been relatively satisfied. Thus a need for esteem will only be felt when physiological, safety and social needs have been met.

Hertzberg⁽³⁾ expanded Maslow's theory of human needs and related them explicitly to job performance. Hertzberg identified two basic job dimensions: (1) the conditions surrounding the task, or hygiene factors and (2) the task itself, or motivating factors. In general, the hygiene factors consist of the lower level needs on Maslow's hierarchy and the motivating factors consist of the higher level needs - esteem and self-actualisation.

In Table 2, Hertzberg's factors are detailed in descending order of importance. It should be noted that the dual factors are not mutually exclusive as some authors suggest (see (1)).

TABLE 2

Hertzberg's Dual Factor Theory

<u>Hygiene Factors</u>	<u>Motivation Factors</u>
Company policy - administration	Achievement
Supervision	Recognition
Relationship with supervisor	Work itself
Work conditions	Accountability
Salary	Advancement
Relationship with subordinates	Growth
Status	
Security	

The above hygiene factors are 70% responsible for the existence of job dissatisfaction while the motivation factors are over 80% responsible for job satisfaction.

The Human Resources Engineering approach outlined herein operates on the hygiene factors to remove obstacles in the work environment which may deter motivation on the job, then concentrates on enhancing the motivating factors which are directly related to intensity of motivated behaviour.

In the organisational context, it is important to tie individual motivation to organisation goals.

In general, the individual will be a high performer when he (A) sees a high probability that his efforts will lead to high performance (B) sees a high probability that high performance will lead to outcomes and (C) views these outcomes to be, on balance, positively attractive to himself^(4,5).

Therefore, the key result areas for his function must be perceived by the individual as being achievable by effort, and organisational rewards must be perceived as being linked to high performance in the key result areas.

In concentrating on key result areas, the individual is partway satisfying the recommendation of Drucker not to concentrate on doing "things right", but on doing "right things",⁽⁶⁾.

3 THE TEAM

In many situations, man cannot succeed alone, and joins forces with others. The organisation is an example of men forming groups to solve complex tasks. Within a company, you may have sales teams, production teams, research groups and so on.

These groups may be composed of self-motivated, effective individuals, but, until each is committed to the team, the team cannot survive to achieve its stated goals.

Antony Jay⁽⁷⁾ makes this point very clearly, when he compares teams within the modern organisation to ancient hunting bands going out to kill game for the tribe. Unless the hunting band worked as a unified whole, it did not survive in the jungle.

In the final analysis, it is the result that the team produces that counts.

Or, to use a sporting analogy - of more recent times - consider a Sydney Rugby team with five Internationals which finished last in the competition.

Individually they had talent, as a team they were poor. The next season the same team finished in the top five. The only change was the coach, who provided direction and discipline.

Thus if a team of players runs on the field and each one knows not only what he has to do (and does it) but also what the other players have to do - the end result is that the team does well.

Industrial teams are the same. It is most important that each individual understand and give cognisance to the effect his actions may have on other members of the team. Companies cannot afford to have one man operating as if he were on an Island. But how often we see it.

4 THE COMPANY

At the top management level, commitment to the team result is essential and this involves achieving a consensus among key executives heading various departments.

Cyert and March (see 8) observe that behaviourally like all coalitions, the firm's senior management pursue multiple and even complicating goals simultaneously. There is generally an unresolved conflict of departmentalised, functional and individual objectives.

It is up to the chief executive, to gain an explicit agreement by key executives to compromise individual goals. If the chief executive is unable to achieve viable sub-optimisation of objectives and operations, either the firm goes bankrupt or management consultants are brought in.

Horwitz⁽⁸⁾ observes "that the job of the outside consultant is not only to introduce new management techniques but, much more basically, to permit, through a catalytic process, the emergence of a consensus among the strong men of the firm".

5 HUMAN RESOURCES ENGINEERING

In our view, Human Resources Engineering is putting

all this together, leading to self-motivated individuals in successful management teams.

This leads to improved profit performance for the organisation, because individuals and teams are concentrating on doing "right things".

Also, the organisation has increased its flexibility in being able to adapt to a rapidly changing environment⁽⁹⁾.

Finally, there is the satisfaction gained by the individual in seeing his efforts make a direct contribution to team results.

Human Resources Engineering starts with the individual. It recognises his needs as summarised by Humble⁽¹⁰⁾:

- 1 Agree with me what is expected of me
- 2 Give me the opportunity to perform
- 3 Let me know how I am getting on
- 4 Help, guide and train me
- 5 Reward me according to my contribution.

The individual is put completely in the picture and is rewarded on the basis of (mutually accepted) performance.

Humble⁽¹⁰⁾, Drucker⁽⁶⁾ and others have advocated the M.B.O. approach to management motivation. However, a weakness of this approach is that the manager must do the integration ie coordinate the efforts of each individual in his team. Unfortunately he may not have the capability or the capacity. He may have too many subordinates or he may not be aware of the full picture because his own superior has kept something from him.

A further weakness of the M.B.O. approach is that the individual may not really believe in the objectives set and so may not be fully committed to their achievement.

In addition, M.B.O. objectives are normally set over long time-periods whereas recent evidence suggests that short time periods are more effective⁽¹⁾.

Hertzberg⁽³⁾ meant just this with his prime motivating factor "achievement". It must be felt by the individual before the second motivator "recognition" can have any significance.

If achievement happens by accident, any recognition is hollow.

M.B.O. is also limited because it takes no account of the informal structure of the organisation and its importance in defining the role of the individual⁽¹¹⁾. Nor does M.B.O. take account of the coalition-trading within the relationships of peers and subordinates: especially as this occurs at the top-management level⁽⁸⁾.

These problems are not encountered in the Human Resources Engineering approach which ensures team coordination by emphasising the inter-relationship between team members and between their key result areas. We have found that because the individual identifies his own key result areas (with team agreement), he personally accepts full commitment to working towards their achievement. Short time periods are used to continually focus attention on key result areas - the "right things" for the individual and for team results.

Furthermore we believe in the development of creative managers who make things happen in the environment. The environment does not run them.

In our view a creative manager is just like a creative artist, he paints a different picture with different resource materials and is just as creative. But he must feel it.

Thus we believe his job satisfaction increases markedly and can be equated to the satisfaction allegedly felt by the craftsmen of old

6 RESULTS OF THE HUMAN RESOURCES ENGINEERING APPROACH

The following case history examples illustrate the results achieved by the application of the principles outlined above.

6.1 Case I

A team connected with production involving Senior Management, including members from Production and Administration. Graphs 1 and 2 show significant reductions achieved in both time card errors and despatch advice errors - achieved by improved performance in The Administration Department over a relatively few short time periods. Graphs 3 and 4 show the improvements achieved in both % rejects and % unscheduled delays, achieved by improved results from the Production Department. The effect of these advances together with other contributions produced the team result shown in Graph 5 - a lift in productivity per head of direct employees.

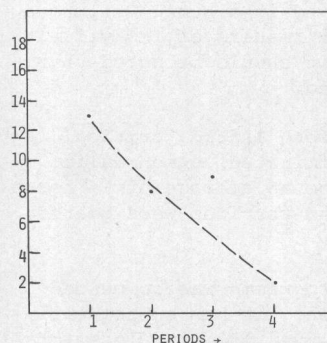


FIG 1 : TIME CARD ERRORS

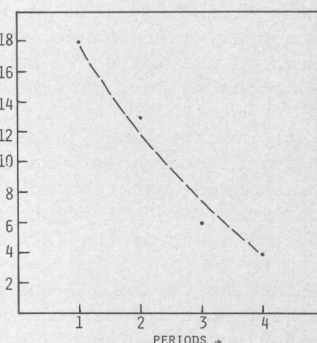


FIG 2 : DESPATCH ADVICE ERRORS

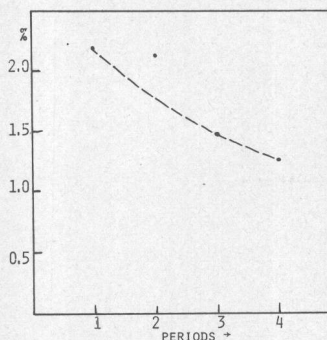


FIG 3 : REJECTS : HIGH SPEED

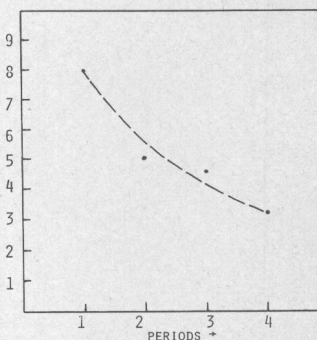


FIG 4 : UNSCHEDULED DELAYS

6.2 Case II

In our view all team members should make a contributions to overall profit. For companies with high turnover, good credit control can be an important contributor to profit. We have not found a company that had their outstanding accounts within the desired range. Graph 6 shows a typical reduction in days outstanding. This has subsequently been reduced to and held at around 55 days. Ignoring the profit contribution, the administration area is quickly identified by the Management Team as giving positive support to the Team result.

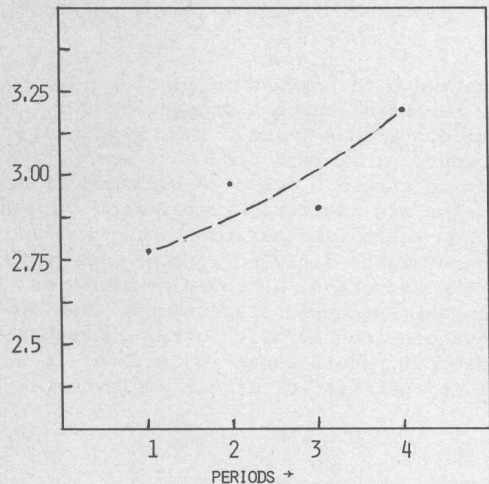


FIG. 5: PRODUCTION (TONS/PERSON WEEK)

6.3 Case III

Graph 7 shows the results produced by a Production Manager and his team involved in a Human Resources Engineering Programme. The results of individual members are not shown but it should be noted that all team members contributed.

Factory efficiency levels were lifted, critical material shortages were eliminated, unscheduled breakdowns were reduced from an average of 84 hours per week, and all supporting services were geared to the needs of the factory.

Referring to Graph 7 the programme was commenced after the third period shown. It has subsequently risen to a ceiling of just over 140 with less total staff. The programme in this instance has been running three years

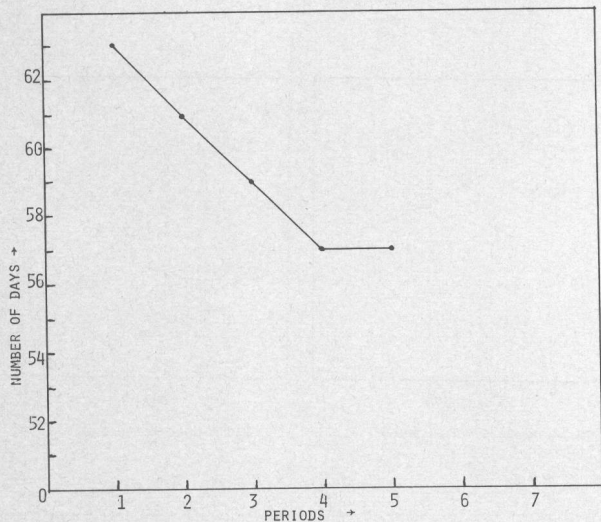


FIG. 6: ACCOUNT DAYS OUTSTANDING

7 CONCLUSION

The Human Resources Engineering approach to management is an application of behavioural theory to the organization. It operates at three levels: the individual, the team and the company.

It succeeds firstly, by motivating each individual to gain achievement and recognition in his key result areas.

Secondly, it succeeds because each individual is committed to making a contribution which he knows will assist the work of other members of the team. This emphasis on the inter-relationship of individual contributions, leads to a team approach and a commitment by all members to achieving more effective team results.

Therefore, when each team is functioning effectively, and the key executives heading these teams have reached an explicit consensus on how corporate goals are to be reached, this results in improved company performance.

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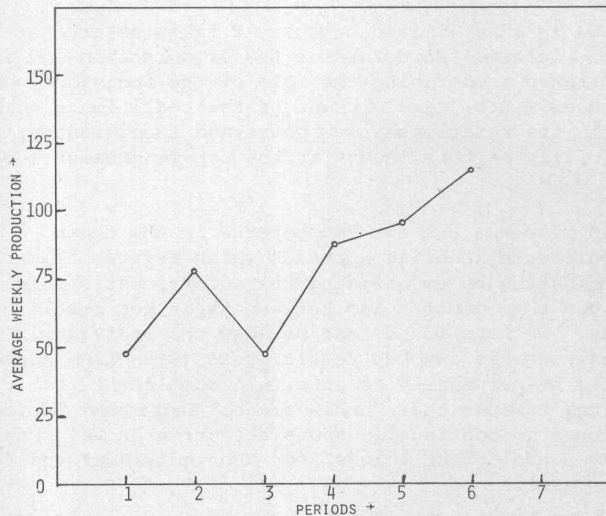


FIG. 7 PRODUCTION IMPROVEMENT THROUGH HUMAN RESOURCES ENGINEERING.

Management Development in a Process Industry

J. W. ROSS

The Commonwealth Industrial Gases Ltd.

SUMMARY The prime aim of management development within an individual organisation is to generate senior executives whose blend of formal training and in-job experience matches the executive profile most appropriate to that organisation. This is particularly important in developing young professionals for general manager appointments which demand the breadth of perception required in leading a self-contained multi-discipline team. The Commonwealth Industrial Gases Limited (CIG) has evolved its current approach over some 15 years of observation and review in an environment of considerable expansion and at a time when the early school of managers were retiring from the scene. Such planning of human resources is one of the foundation issues in building the future of the organisation.

1 INTRODUCTION

In May 1976 FORTUNE magazine published a group profile of chief executives from the top 500 U.S. Corporations (BURCK 1976). In terms of formal education, 85.9% were graduates and some 58% had undertaken post graduate studies. This compares with the 1950 situation of 73% as graduates and only 15% completing post graduate studies.

The total personnel establishment for the CIG group of companies is 4,040 and approximately 1%

hold senior executive positions - general managers, divisional executives, corporate functional managers. Table I summarises formal education, professional discipline, age, length of CIG service, previous employment details, etc. These details reveal a major difference with the American study in the area of formal post graduate education. This difference is probably a major reason for CIG's planned educational and experience development for individual managers.

TABLE I

CIG SENIOR EXECUTIVES - SUMMARY OF PERSONAL DETAILS

Personal Details	M.D. & Divisional C.Es	General Managers	Corporate Functional Managers	Totals
Number of incumbents	8	20	16	44
Professional qualifications -				
degree/diploma/acceptable equivalent	8	13	12	33
second/higher degree	1	1	1	3
Professional discipline (initial experience)				
accounting/commerce/economics	2	4	7	13
engineering/sciences	6	10	5	21
marketing		6	3	9
humanities/behavioural sciences			1	1
Age grouping -				
under 35 years		2	4	6
35 - 40 "	3	5		8
40 - 45 "	3	3	4	10
45 - 50 "	1	6	3	10
over 50 "	1	4	5	10
CIG service - in current position/total				
less than 5 years	6/1	15/3	12/5	33/9
5 - 10 "	1/1	5/5	3/3	9/9
over 10 "	1/6	-/12	1/8	2/26
Number companies worked for (in professional career)				
1	3	10	7	20
2	2	3	1	6
3		6	4	10
4	3	1	3	7
5			1	1

Professor Peter Moore, Deputy Principal of the London Business School, recently estimated the top quarter of management jobs within the United

Kingdom as totalling some 250,000 (MOORE 1976). For recently qualified managers he found that roughly 4,500 people per year are currently receiving

formal qualifications in business studies - 2,100 at first degree level, 1,000 at post graduate degree/diploma and 1,400 at management diploma level. Professor Moore considers that these numbers are increasing only very slowly and will make little impact in the foreseeable future on middle and senior management positions in the United Kingdom.

CIG experience is not dissimilar to this with the obvious conclusion that there must be a management development policy and programme which aims to generate general managers from young graduates. The nature of our manufacturing process offers considerable potential for chemical engineering graduates in particular.

2 GENERAL MANAGER DEFINED

Chemical engineering processes of a size warranting formal management development programmes commonly involve high levels of both capital investment and process technology. Sensitivity to customer demand and to environmental or community impact are also frequently key features and the general manager can thus be expected to be directly concerned with -

- . ensuring reliable customer service in terms of product quality and product delivery
- . achieving optimum operating costs
- . co-ordinating marketing, production, distribution and financial management functions
- . using effectively the people talent and capital invested in the business
- . developing resources, both people and material
- . anticipating change
- . maintaining social awareness
- . continuing his self development, both as a manager and as an individual.

3 CIG PHILOSOPHY OF MANAGEMENT DEVELOPMENT

Development of individual managers is but one aspect of management manpower planning and it is therefore appropriate to firstly consider the total concept. The principal objectives of the CIG approach to management power planning are -

- . all efforts must be firmly based on what is the current position and what has been the rate of progress - annual audits of key manager strength
- . forecasts of requirements must relate to a forward estimate of the nature/extent of the business
- . the numbers game - future manager requirements compared with existing establishment - is the best measure and motivating force for developing individual managers
- . planned development for individual managers must encompass both the career aspirations of the individual and the ideal profile of future managers.

4 THE SIZE OF THE MANAGEMENT DEVELOPMENT PROGRAM

It is impossible to identify exactly which young managers will succeed (or for that matter, will want to succeed) to the senior executive positions. It is obvious then that the management

development programme must encompass all young managers and in itself must be designed so as to include a selection or sifting process for identifying the future general managers.

CIG defines a "key manager" as one who can influence the Company's short term objectives or its progress towards these. Unfortunately there is not yet available any objective measure for the extent of such influence and a minimum remuneration level is used as the qualifying point for these positions. This remuneration level is pitched at a department manager, e.g. a State sales manager, a production manager, a State accountant within a medium sized operating unit (production value or sales level in excess of \$5,000,000)

Table II establishes the history of CIG growth in such key manager positions.

For the sake of simplicity this table excludes the profiles for age grouping, service years, professional disciplines, which form part of the yearly audit.

It is important, particularly in times of economic expansion, to quantify management requirements in terms of business activity. It is equally important to select the correct indicators for this purpose. Company earnings - the residual from gross margins after paying out trading overheads, interest and taxation - reflect the level of trading overheads the business can afford and thus the quantum of management the organisation can afford.

A forward estimate of Company earnings can provide the means to forecasting future management requirements but due account must be taken of proposed changes in the nature of the business, or in management style.

As a simplified example, earnings in Table II have been extrapolated at the same growth rate to 1981, and key manager development is established in Table III.

5 PROFILE FOR THE FUTURE GENERAL MANAGER

Within the context of Alvin Toffler's ever increasing rate of change, the general manager of the future will require a greater variety of skills than his forerunners.

To perform the functions listed above CIG will seek to identify managers who can match the following profile -

- . expertise in one aspect of the business and a disciplined approach to reasoning
- . confidence in his own ability
- . ability to manage change
- . ability to co-ordinate input from several directions and to lead people towards agreed objectives
- . the skill to face and make effective decisions

The general manager of the future must operate more and more against the background of community and government pressures for far greater disclosure of information.

6 THE BREADTH OF COMPANY EXPERIENCE REQUIRED

The FORTUNE survey investigated the need for managers to switch from company to company during their careers. (Refer Table IV).

TABLE II
AUDIT OF KEY MANAGER ESTABLISHMENT - 1971/1975

Details	Units	1971	1972	1973	1974	1975
Earnings	\$000	5184	5298	6026	6655	8614 *
Total remuneration for key managers	\$000	1232	1380	1613	2196	2558
Cost of key managers per \$1 earnings	\$	0.238	0.260	0.268	0.330	0.297 °
Average remuneration per key manager	\$000	10.9	11.9	12.7	13.9	16.4
Average remuneration per key manager in 1976 values	\$000	18.7	19.0	19.2	18.4	18.6
Actual establishment for key manager		113	116	127	158	156
Losses from key managers -						
promotion/international transfers			2	3	1	--
retirements			3	2	3	6
resignations			6	5	2	4
terminations			7	2	5	6
others						3
Input to key managers - from within			10	13	32	13
" outside			10	13	10	4

* tax effect accounting introduced

° would have been 0.328 if no tax effect accounting

TABLE III
FORECAST OF KEY MANAGER REQUIREMENTS - 1976/1981

Details	Units	1977	1978	1979	1980	1981
Estimated earnings at 1976 values	\$000	11234	11638	12057	12491	12940
Projected cost of key managers per \$1 earnings	\$	0.292	0.298	0.301	0.306	0.310
Deduced total remuneration for key managers - 1976 values	\$000	3280	3468	3629	3822	4011
Projected remuneration per key manager - 1976 values	\$000	19.0	19.1	20.1	21.1	22.2
Number of key managers required		173	182	181	181	181
Increase in key managers		20	9	-1	0	0
Known retirements		1	2	3	3	2
Forecast turnover (at 8% p.a.)		12	14	15	14	14
TOTAL recruiting/promotion programme		33	25	17	17	16

TABLE IV
NUMBER OF COMPANIES WORKED FOR BY CHIEF EXECUTIVES
IN TOP U.S. COMPANIES

Number of Companies	% of Chief Executives
5 or more	4.1
4	10.0
3	23.2
2	27.4
1	34.6

Given this situation however, 62% of these chief executive officers gained their experience by serving in many divisions or departments within the one company. In fact 80.4% rate experience in their own company as the factor most crucial to success.

Table I includes comparable information for CIG executives. There is a strong similarity to the U.S. figures on the number of companies worked for, and the "years in current position/total service years" ratios support in-company experience as a prerequisite to successful performance at top management level.

7 AVENUES OF TRAINING & DEVELOPMENT AVAILABLE

To match the profile of the future, the general manager will need to combine the correct amounts of actual experience and formal training. The timing

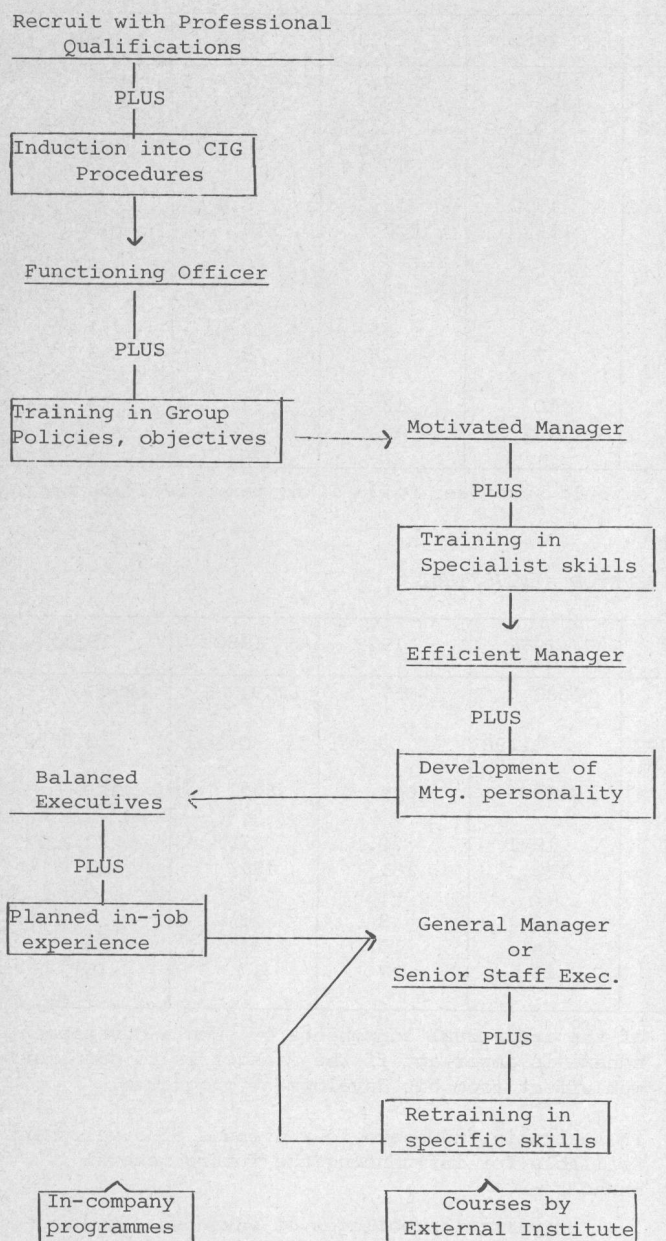
of the individual components of such a development scheme is important if the manager is to gain maximum effect from his development programme.

In Australia there are four avenues of development available for influencing the future general manager -

- Universities/colleges of advanced education provide the academic foundation for a professional career.
- Management consulting organisations offer a wide variety of short courses in specific skills, mainly in terms of management techniques. In Australia there is a further organisation - The Administrative Staff College at Mt. Eliza - which offers a course designed for broadening the management personality of the individual.
- Most larger companies conduct in-house training courses for supervisors and managers.
- In-job experience provides that element of training absolutely essential in the career development of the individual - the opportunity to apply, observe and learn from inputs of all of the formal training institutions.

Figure 1 is a simple model indicating the development of a graduate to general manager rank. The practical demands of business do not always allow this to be followed but most of the existing CIG general manager/divisional executives would have

FIGURE 1 - STAGES IN MANAGER DEVELOPMENT



been through all six steps of this programme.
Three actual examples are set out below -

CASE A

1956 Joined CIG as Trainee Welding Engineer (aged 21 years)
1960 Graduated B.Sc (Metallurgy)
1960 Company junior management course
1962 Technical Sales Manager
1963 Gas Products Sales Manager
1967 Divisional Sales Manager
1968 Divisional Administration Manager
1968 Divisional Marketing Manager
1969 Australian Administrative Staff College (Advanced Course)
1970 State General Manager (operating unit)
1975 Company advanced management course
1977 Divisional Chief Executive

CASE B

1957 Graduated B.Eng (Chem)
1958 Chemical Engineer - I.C.I., Botany
1959 Chemical Engineer - Simon Carves, England
1961 Chemical Engineer, A.C.I., Waterloo
1964 Joined CIG as Assistant Production Engineer
1968 Senior Scientific Officer

1968 Planning Manager (corporate head office)
1968 University N.S.W. programme for production and distribution of natural gas
1969 University Sydney programme on international trade and investment law
1970 General Manager (operating unit)
1972 Divisional Chief Executive

CASE C

1950 Diploma: Mech and Elec Engineering
1952 Joined CIG as junior engineer
1956 Works Engineer (operating unit)
1960 Engineer Operations (divisional office)
1961 Production Manager (operating unit)
1965 Australian Administrative Staff College (advanced course)
1967 State General Manager (operating unit)
1967 Company Advanced Management Course
1972 Divisional Chief Executive

The practical success of such cases has exerted considerable influence in shaping the general approach.

Most Company influence on the development of the individual manager revolves around in-job career experience, in-house training courses, and integrating with these the appropriate external management programme.

In-house courses for CIG are used for a variety of purposes but this paper considers only those programmes with the specific objective of induction into company philosophy and policy. CIG have developed one week residential programmes with this specific objective. Participants are selected on the following bases -

- . a recent appointment to manager ranking (within the last two years)
- . a balanced blend of professional disciplines
- . an even mixture of divisional representation

The course design involves -

- . a group discussion of what the business is all about - customers, products, company resources, people, community relationships, current performance
- . a description of strategic thinking toward a five year horizon
- . divisional executives introducing major policies by describing the background thinking and historical development.
- . syndicate examination of possible alternatives required now or in the future with reports back to the relevant divisional executives.

This policy coverage includes -

- . basic company objectives
- . organisation structure
- . industrial relations policy (in the form of case studies based on actual experience)
- . approach to a more participative management style
- . marketing approach

8 MONITORING THE PROGRESS OF THE MANAGEMENT DEVELOPMENT PROGRAMME

Progress cannot be maintained unless both the individual manager and the organisation are fully aware of how far they have moved and with what success. Annual audits combined with forecasts of key manager requirements provide the appropriate measuring sticks for the organisation in toto.

Once satisfied that the numbers are right attention can be focused on the individual manager and again there must be a realistic assessment of "what is now" for comparison with the best estimate of "what can be".

CIG analyse the strength and deficiencies of the individual and then attempt to provide the opportunity for him to minimise any such deficiencies.

The current approach (still in its infancy) is for a three component assessment -

- an appraisal of an individual's strengths and deficiencies by his immediate manager during an interview with an experienced personnel manager
- a discussion (structured on the above appraisal) by the personnel manager with the individual to explore career aspirations
- a schedule (recommended by the personnel manager) of career experience for the individual

This method has been well received by line management and is used at executive management committee level for reviewing managers just one step short of general manager appointment.

9 PROBLEMS OF THE FUTURE

The basic technique for developing managers will not vary greatly in the next 5-10 years and will in itself present very few problems. The background against which this process is carried through however, will show considerable variation and this will have significant impact on the overall process.

In the FORTUNE survey respondents were asked to nominate the factors which make their jobs more difficult. For business generally, the following response was recorded -

Government and its regulations - expressed as "total loss of market economy" "growth of special interest groups within regulatory agencies" etc.	35.2%
Public image - low public esteem for "business" as a whole -	22.2%
inflation	12.1%

When reviewing their own organisations however, the response was as follows -

government and its regulations	28.1%
inflation	11.7%
financing expansion	7.9%
employee development - finding and training good people for top management	7.9%
rapid change	5.5%
profit levels	5.0%

Most of these issues can be faced within the design of manager development programmes - both formal course work and in-job experience. Training institutions can become "neutral" meeting places for managers from the private and public sectors and The Australian Administrative Staff College is an excellent example of deliberate planning to achieve this end.

With most of the other problems listed above, recognition by top management is the initial key - formulating adequate policies and implementing procedures then become a matter of efficient administration.

There is however, one area which may require a personal contribution by the aspiring manager himself. To-day people seek a different scale of

values for self-satisfaction and this calls for serious review of motivating factors and how to use them. The demands for increased involvement at all levels throughout an organisation structure can be recognised by general managers who will modify their techniques accordingly but they will mean hard work for the developing manager. He must communicate with and involve operatives who have not been trained to the same professional level as he and yet who will want to record some input into the activity of the business. Of all the problems likely to be met in the coming years, this matter of building a communication bridge across the gap between semi-skilled operatives and professionally qualified supervisors will prove the most difficult to achieve.

It is not in the motivation of other people alone however, that managers will meet problems. David Kraus of McKinsey & Company of Chicago claimed that gross after tax compensation for executives fell by 20% from 1965 to 1974 when compared with hourly workers income (KRAUS 1976). Surveys by his Company showed that compensation to the highest paid 1% of employees fell steadily over the years 1945-1971 from 4.3% to 3.6% total company payroll. It would be relatively easy to mount a very strong argument that this situation could not be read as a decrease in the value of an executive but a reasonable and appropriate increase in the value of the hourly worker. The real question however is whether this can be accepted by the said executive or - how to maintain his motivation. The symptoms are obvious - why should a young manager accept a transfer with all its private life disruption for a promotion with its seemingly heavier executive work load if there is no accompanying tangible reward.

This should be a problem for the community as a whole but I doubt if management can wait for the community to recognise the situation, let alone resolve it.

10 CHANGE - REACT OR MANAGE

The process of developing is a process of change. We are faced with the choice - either we respond to pressures of change or we initiate the change and manage the result.

People resist change, traditions die hard, unless - those people have the opportunity for input in determining the change. I do not advocate total industrial democracy but I am convinced that the most effective decisions, if effectiveness is measured in terms of subsequent implementation, come from a process which allows all affected people the opportunity for input. This does not relieve the manager of the need to face and make effective decisions. It is a more participative approach in leadership and decision making but a style which each manager individually must decide to embrace.

CIG practice has been to encourage this as a natural response rather than to attempt organisational direction. Basically it is a gradual development of management style, and its acceptance by managers is the most important ingredient in CIG's management development approach.

11 CONCLUSIONS

Formal education in business studies is not producing sufficient managers to meet total demand and organisations must look to graduates from various professions for their future executives. The breadth of responsibility at general manager level

requires the correct blend of technique, philosophy and experience which can be achieved only by careful planning and control of management resources. This is particularly important in order to ensure maximum benefit from the years available to the developing manager for in-job experience.

Over the next five years the number of key managers to be developed/recruited by CIG is the equivalent of almost 70% replacement of the existing establishment. At senior executive level history shows that 75% of the present team have less than five years service at that level. Such figures provide not only the size of the management development task but also adequate justification for its continuing programme. For such a programme to remain effective, however, there must be constant review and revision - firstly, from feedback controls on both total numbers and on individual manager progress, and secondly, from the general management environment and its propensity for change.

12 ACKNOWLEDGEMENTS

This paper is based on the experience and practice of the CIG Management Services Division. The author records his appreciation to CIG for permission to publish.

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