Paul Hill and Fred Emery

Toward a New Philosophy of Management[1]

Acceptance of Proposals

Shell (UK), an autonomous company in the Royal Dutch Shell Group, had become very seriously concerned with the alienation and poor performance of its hourly employees and also of a good many of its supervisors and managers. It was essential that a change be made to commitment and productive initiative as it was necessary to automate the refineries fully and this immense task could not succeed without the cooperation of all. A small group of three, called Employee Relations Planning (ERP), headed by Paul Hill, had been formed to study the long range problems involved and to suggest remedies. These remedies had included the devising of a new management philosophy which could be accepted from the boardroom to the shop floor. At a two-day conference in 1965 with the managing director and his full senior management team, it was agreed that ERP should proceed with the task of working out a draft document and that they should seek social science advice. This decision resulted in the Tavistock's Human Resource Centre being consulted.

This was the first of three critical decision-making meetings that the company's top management team was to hold within the space of 12 months to determine whether the development program should be planned and launched and, if so, the way it should grow. In the

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[1]Excerpted with minor changes from Paul Hill, Towards a New Philosophy of Management. London: Gower Press, 1971.

course of the meeting, which had been highly structured with a detailed agenda indicating all the points on which decisions were needed, there was ample opportunity for examination of both diagnosis and action plans. One statement in the ERP report that caused some managers concern was: "Effective management in modern industry can only be practised by consent of those managed." It was explained that this did not mean or imply that, in order to get anything done, managers must request the consent of each individual to carry out a particular instruction. It simply meant that unless there was a general acceptance of management's right to give instructions in any area, such instructions would not be carried out effectively. At worst, there could be open rejection of the instructions, for example through a withdrawal of labor. At best, people would go through the motions but the work would not get done effectively.

The outcome of the meeting was a general acceptance of ERP's diagnosis of the problem and the endorsement of all the proposals for action. Specifically, the meeting decided that

- It should be a long-term objective of the company to secure an improvement in attitudes.
- Changes in management attitudes were necessary and should be initiated without delay.
- A Participative management philosophy and style, as advocated in the report, should be introduced into all managerial and supervisory ranks, starting at the top.
- ERP should produce a detailed statement of objectives and management philosophy for discussion by the management team.
- ERP should find themselves appropriate social science assistance for the drafting of the document. The question of social science help in subsequent phases of the

program was left open for future consideration.

- Detailed proposals should be drawn up for a system of target-setting and performance review, which would be agreed upon in principle.
- ERP should prepare detailed terms of reference for the proposed study teams which would be making exploratory studies of the areas likely to be affected by productivity bargaining.

The first critical step had been taken and the next management decision point had been delineated. That decision point would be taken up after discussion of the statement of objectives and philosophy which ERP were now required to produce.

Also as a result of this meeting, the management of Shell Chemical Company Limited decided that they would like their employees at Stanlow and Shell Haven chemical plants to participate fully in the program. They reserved their judgment about including the remainder of their organizations.

Securing Social Science Assistance

After the meeting ERP produced a work program showing the tasks envisaged over the following 12 months. On the one hand, the program called for the drafting of a statement of objectives and philosophy and its dissemination through a series of conferences resulting in a start on implementation measures, as yet unspecified. On the other hand, it called for the establishment of study teams, for which terms of reference were now laid down, leading to the beginning of joint discussions with union representatives.

In parallel with seeking social science help, a first attempt was made to draft the

philosophy statement. The team members were forced to admit to themselves, however, that their efforts amounted to no more than a reasonably elegant piece of exhortation: a plea for a participative management style which lacked rational foundation and logical structure. It was clear that the statement would need to be more firmly based on reason and logic if it were to stand up to the rigorous testing it would undoubtedly be submitted to by managers throughout the company. The exercise served, therefore, to reinforce the need for outside assistance with this task.

While fully convinced of the need for help, ERP and others in the company found themselves rather ignorant about how to engage appropriate social science assistance. There appeared to be no register of resources available in the field. They decided, therefore, to make individual approaches to a number of prominent social scientists in Britain, sending each a copy of the ERP report and work program. Meetings were then arranged.

In each case the outcome of these discussions was similar. The company's intentions were approved, with varying degrees of enthusiasm, but none of the social scientists approached had sufficient time available to assist with the project. In spite of this, the discussions were valuable. In addition to a specific recommendation to approach the Tavistock Institute, they provided an opportunity to expose the proposed change program to a range of informed social science opinion, and confirmation that the proposals made sense. They also gave ERP a clearer recognition of the scale of social science help which would be needed for a project of the complexity envisaged.

The Tavistock Institute Human Resources Centre

An approach was duly made to the Tavistock Institute. The Institute was composed of five Centres whose domains ranged from family and community psychiatry to operational research. The company approached the Human Resources Centre group whose chairman was Eric Trist. Future use of the term "Tavistock" will refer specifically to this group.

A meeting with Trist and his colleagues in May 1965 showed a high degree of mutual interest and compatibility of objectives. Tavistock were impressed with the scope of the company's plans and with their relevance to their own previous work in this field. They felt they could contribute theoretically to the launching and development of the project and, on the basis of their practical knowledge and experience, lend support at times of setback and disappointment which, they warned, would inevitably arise in the course of such a large-scale undertaking. Furthermore, they could make sufficient resources immediately available to work on it.

Trial Period

At the suggestion of Tavistock it was agreed that the company would engage their services for a trial period of three to four months, beginning in July 1965. This would allow sufficient time for an orientation program, the drafting of the statement of objectives and philosophy and its acceptance or rejection by the company's management team.

The working arrangements would be flexible. Four senior members of the Tavistock would make themselves available whenever they were needed. They were Eric Trist (the leader), Fred Emery, Gurth Higgin and Harold Bridger. At the end of the trial period the

company and the Tavistock would be in a position to decide whether they wished to continue the collaboration.

Orientation

The first concern of Trist and his colleagues was to explore for themselves the company's organization and technical system, its objectives, its boundaries and its links with the outside world. Higgin made a visit to Shell's Pernis refinery in the Netherlands in order to get a firsthand impression of the technology of which, as yet, Tavistock had no intimate knowledge. It was better that they should learn about this technology from a location independent of those in the UK where they were to be involved.

Their normal link with the company was the ERP team. By channeling all contacts and communications through ERP it was possible to coordinate activities and plot the movement of the project. Moreover, Tavistock saw it as an important task not only to feed in to the company as much of their own knowledge and experience as possible but also to help people inside the company acquire social science skills and expertise. The ERP team were the logical people with whom to start this process, and Tavistock set out to build a close collaborative relationship with them. From the beginning, therefore, Tavistock and ERP established a pattern of joint discussions and planning meetings which was to continue throughout the project.

Tavistock members visited each of the refineries and met all the senior executives in the company's head office. In addition to carrying out their own appreciation of the company's situation, they were concerned with assessing the validity of the problem diagnosis on which ERP had based its action proposals.

ERP's assumptions about the level of morale and motivation among shop-floor people, for example, had been based on its members' own working experience and their extensive contacts with hourly paid employees. The possibility of conducting an attitude survey to get some objective data on the subject had been considered in 1964 but had been rejected because it was feared the results would have been unduly influenced by the decrease in employees imposed by the company in that year.

By the end of their orientation program, Tavistock were satisfied that the diagnosis appeared to be valid. The next task was to produce a draft of the objectives and philosophy statement.

The Statement of Objectives and Philosophy

The statement was to be the focal point of the whole development program. It was to set out exactly what the objectives of the company were and the philosophy, or principles, which would serve as guidelines to managers when making decisions. This was felt to be essential if the long-term aim of changing unfavorable attitudes and securing a higher level of commitment to the company's objectives was to be achieved. It was also necessary to give employees the opportunity to discuss the statement so that they could either accept or reject the objectives and principles it set out. It was hoped that both would be endorsed by employees at all levels and that, as a result, they would in time be encouraged and motivated to devote their energies to putting the philosophy into practice. Acceptance would imply, in broad terms, consent to manage and be managed in accordance with the principles set out in the statement and in pursuit of the stated objectives.

Drafting the Statement

Although it was not immediately apparent, the theories and concepts which Tavistock had developed fitted exactly into the picture the company wished to create. Moreover, they provided the firm logical structure which the statement needed and which had been lacking from ERP's own first efforts at drafting.

The statement was drafted by a small team: Emery of Tavistock and two members of ERP. They had available to them a set of company objectives which had recently been drawn up by the management team. They also had available the experience that all the Tavistock members had gained as a result of the orientation program and their own analysis of the company system. Working only part of the time, they completed the task within a month.

Purpose and Criteria

The drafting team first established for themselves the purpose the statement was to serve and the criteria its contents would have to meet.

It was agreed that the statement was not intended to serve as a public relations document for use outside the company, nor was it in any way to be used for industrial relations purposes or to replace existing agreements with the trade unions. It was intended to be a working document which would provide practical guidance in the management and operation of the company. Two main drafting criteria were established:

Validity. The contents of the statement would have to be seen as valid by all

employees and have some relevance to the actual performance of tasks in the various areas of the company's activity. Furthermore, its contents should continue to be valid and relevant over a reasonable span of time--five to 10 years--by taking into account any developments such as those in technology which could be foreseen within that time span.

Appropriateness. The principles, or values, written into the statement would have to be appropriate to the nature of the company's main activities--that is, refining.

Jargon

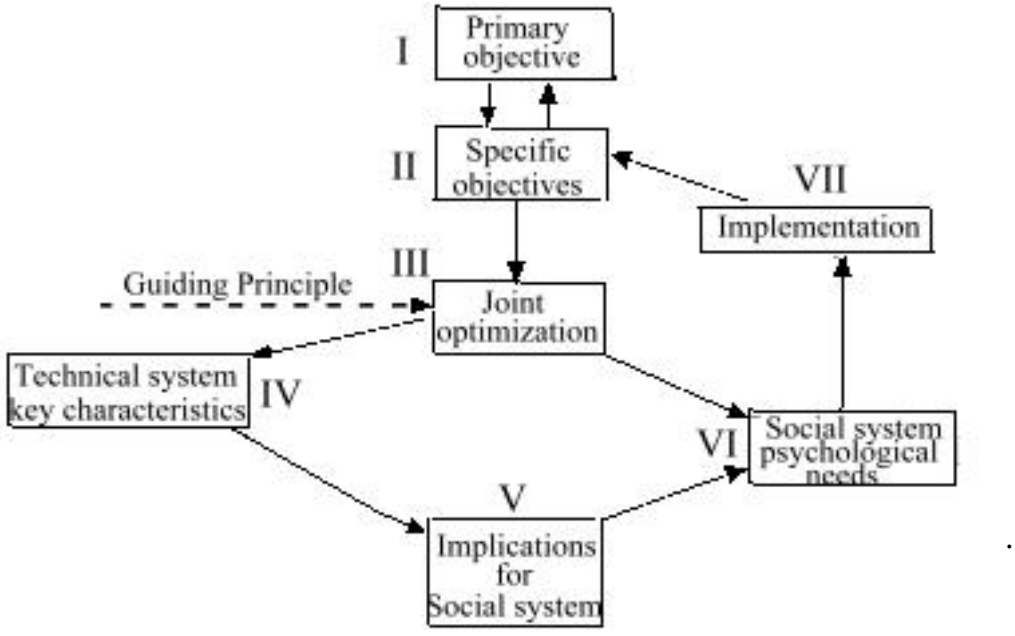
The first draft was tested out informally with a number of people at various levels and in different functions. First reactions to the document were often doubtful since the concepts embodied in it were new to people and some of the wording caused problems. However, after a process of discussion and clarification and some minor modification of the text, everyone consulted was satisfied that the contents were both valid and appropriate.

Tavistock and ERP agreed that no attempt should be made to "simplify" the document by eliminating or paraphrasing the jargon. Such an attempt would, they felt, result in a loss of some of the statement's meaning and power. Furthermore, it was not intended that the document be used as a "hand-out" for employees to read without the opportunity for debate and discussion. Experience had shown that discussion was essential to bring out its full meaning and implications and that in the course of this process the jargon usually ceased to be a problem.

Summary of the Statement's Contents

The full statement is reproduced later. Before reading it, however, it will be helpful to look at its structure (Figure 1) in conjunction with the summary of its contents which follows and which highlights the major concepts involved. The statement consisted of the seven main sections shown in Figure 1.

Figure 1
Logical Structure of
the Statement of
Objectives and Philosophy



1. Primary objective. The company's primary objective is expressed in terms of maximizing its

contribution to the Group's long-term profitability insofar as this arises from the efficient use of resources. There follows what could be termed the company's social objective, involving commitment to two key concepts:

(a) That all the resources it uses are "social resources" (that is, are in the last analysis resources of the community) and must be protected and developed as such.

(b) That the resources must be used to contribute to the satisfaction of the community's needs for products and services.

Thus the company commits itself to seeking improved profitability and the creation of new wealth only in ways which will also benefit society--through meeting community needs efficiently and through protecting and developing the social resources it uses.

2. *Specific objectives*. Six specific objectives are spelled out within the overall framework of the primary objective. Two are operational objectives concerned with meeting present and future market requirements. The third is related to the company's position in the Group. The last three derive from the commitment to protect and develop resources and are concerned with the development of people, safety and the need to minimize pollution of the environment.

3. *The principle of joint optimization as a guide to implementation.* The guiding principle to assist the company in pursuing its objectives is the joint optimization of the social and technical systems. Joint optimization means the best possible matching together of the people in any unit and the way their jobs are organized, with the physical equipment and material resources in that unit. The statement of this principle here leads on to an examination of the technical system and of its implications for the design of the social system.

4. *Key characteristics of the evolving technical system*. Seven fundamental characteristics of the technical system are identified which are likely to remain unchanged in the foreseeable future and which must therefore be taken into account in deciding how best to design the social system.

5. *Implications for the social system*. By considering the implications of the key technical characteristics, the most appropriate matching human characteristics are suggested. The most important human task in running process operations is identified as information handling. As this is a skill which cannot be controlled by external supervision, employees must be internally motivated to carry it out efficiently. It follows that the key human characteristics required are responsibility and commitment.

6. *Responsibility and commitment*. This section is concerned with what must be

done to create conditions in which people will develop responsibility and commitment to their tasks. It is suggested that two things are necessary:

(a) Satisfactory terms and conditions of employment.

(b) Jobs which enable them to satisfy the basic psychological needs of human beings in their work.

What are considered to be the main psychological needs are then set out, together with some general principles to be taken into account in redesigning jobs.

7. *Principle of implementation of the philosophy*. The philosophy must be tested in the company through all employees having the opportunity to relate its implications to their own situation. Senior managers have a special responsibility for leading the process of testing and dissemination, and for implementation.

Text of the Statement

The version of the statement quoted below is dated May 1966 and incorporates a number of additions and improvements that resulted from the first wave of dissemination conferences for senior managers. The key concepts and framework, however, survived intact from the original draft.

Statement of Objectives and Management Philosophy

1. *Primary objective*. The company is primarily concerned to maximise its contribution to the long-term profitability of the Shell Group insofar as this arises from the efficiency with which it uses the Group's resources of men, money and material.

The resources to which it has legal rights of privileged access are nonetheless part of the total resources of society as a whole and are, in this sense, social resources; the company believes that they must be protected, developed and managed as such. It furthermore believes that its use of these resources must be such as to contribute to meeting society's requirements for products and services.

The company recognises, however, that ultimate discretion for what can be done to maximise Group profitability cannot properly be exercised without having a total picture of the exploration, production, transportation, manufacturing, marketing and research functions. Since the activities of the company lie mainly within the manufacturing function, this makes necessary the statement of its specific objectives in terms of the minimum expenditure of resources appropriate to the discharge of its responsibilities to the Group.

2. *Specific objectives*. Specifically this commits the company to:

1. Meeting the current market requirements for refined petroleum

products with minimum expenditure of total resources per unit of quantity of given quality.

2. Ensuring the company's ability to meet emerging market requirements with decreasing expenditure of total resources per unit of quantity of specified quality.

An essential task of management is to seek at all times optimal solutions to 1 and 2.

In addition, the company is specifically committed by its position in the Group to:

3. Seeking continually from the Group the power and the information necessary to enable it to meet its responsibilities. In certain circumstances it may be necessary to seek a redefinition of its responsibilities in order that the company's capabilities may be best used on behalf of the Group.

Implicit in these three specific objectives and in the fact that the company's resources are part of the total resources of society are the following additional specific objectives:

4. Creating conditions in which employees at all levels will be encouraged and enabled to develop and to realise their potentialities while

contributing towards the company's objectives.

5. Carrying out its productive and other operations in such a way as to safeguard the health and safety of its employees and the public.

6. Seeking to reduce any interference that may be caused by its activities to the amenities of the community, accepting the measures practised under comparable conditions in British industry as a minimum standard and making use of the expertise and knowledge available within the Group.

3. *The principle of joint optimisation as a guide to implementation*. The company must manage both a social system, of people and their organisation, and a technical system, of physical equipment and resources. Optimisation of its overall operations can be achieved only by jointly optimising the operation of these two systems; attempts to optimise the two independently of each other, or undue emphasis upon one of them at the expense or the neglect of the other, must fail to achieve optimisation for the company as a whole.

4. *Key characteristics of the evolving technical system*. In order to create appropriate conditions for the optimisation of the overall system, it is necessary to design the social system jointly with the technical system recognising that the latter has certain key persistent characteristics which must be taken into account.

These characteristics are:

1. The company forms part of a complex, science-based industry subject to rapid technical change. This rate of change can be expected to increase in the future.

2. There is a wide measure of flexibility available in all the main processes involved in oil refining, i.e., distillation, conversion and blending. The added value which results from refining operations depends to a high degree upon the skilful use of this flexibility in plant design and operation and the programming of refinery and overall company operations in order to meet variable market requirements from given and variable inputs.

3. The company is capital-intensive and it follows that adequate criteria of overall company performance must be sought mainly in measures of efficiency of plant utilisation. The importance to overall company performance of efficient plant utilisation makes necessary a high degree of plant reliability.

4. The company's refineries are already highly involved with automation and instrumentation. Pressure for a very much higher level of automation

and instrumentation arises from the development of new processes and the drive towards optimal use of flexibility described in 2 above and the need to improve the ability to control, identify and account for the large number of movements through the technical system at any one time.

5. There is considerable variation in the degree of automation of different operations in the company. Labour-intensive activities exist side by side with highly automated ones. Despite the trends noted in 1 and 4 above, some variation is likely to persist.

6. The company's process operations are carried out on a continuous twenty-four hours per day, seven-day week basis, by a number of shift teams, while many associated service activities are carried out discontinuously on a day working basis.

7. The refineries and head office are geographically widely separated and within refineries there is considerable dispersion of the various activities. For economic and technical reasons this characteristic is likely to persist.

5. *Implications for the social system*. The rapid and increasing rate of change in the technical system defined in characteristic 1 creates a special need for new expertise, skills and knowledge at all levels, and new forms of organisation to

cope with changing requirements. It also increases the rate at which skills and knowledge are rendered obsolete. The company believes that its objectives in relation to the social nature of its resources commit it to train its employees in new skills and new knowledge where obsolescence of skills and knowledge has resulted from its own or the industry's technical development. These effects require the company to plan for the development of appropriate skills and forms of organisation in parallel with the planning of technical change.

The most significant consequence of characteristics 2, 3, 4, 6 and 7 is that economic production within our process technology is critically dependent upon people effectively dealing with information yielded by the technical system and contributing the most appropriate information to the control and guidance of that system. Some of these informational flows are confined to individuals who take information from the technical system and feed back guidance directly into it. Other informational flows must be carried at any one time by a network of many people at many different organisational levels. The effectiveness of this social informational network depends upon the recognition by all those involved in its design and operation that it is made up of people and is therefore affected by the factors that influence human behaviour.

The wide geographical dispersion of the refineries and the extensive layout within the refineries themselves present an impediment to effective communications. This makes it even more necessary for the company to design efficient informational flows.

A further consequence of characteristic 3, namely the need for a high degree of plant reliability, is that economic production is also highly dependent upon the application of craft skills and knowledge.

In information handling, and to a large degree in the exercise of craft skills, the problem is to avoid lapses of attention and errors in observing, diagnosing and communicating or acting upon information. Information-handling work in the refining industry is such that lapses and errors are likely to result in heavy costs, both from delay in recognising errors and taking corrective action and from the nature of the equipment and the processes involved. The only promising way of avoiding these faults is for the individual to be internally motivated to exercise responsibility and initiative. Any external control can only act after the error has occurred or had its effect.

In contrast, in those jobs where the main human contribution is manual labour, there is some choice as to how control may be achieved. Although optimal control requires internal motivation, the shortcomings associated with mainly manual tasks do not result in heavy costs and it is possible to achieve an economic degree of control by external incentives and supervision. For these reasons the exercise of personal responsibility and initiative in such work, although desirable, may be considered less significant.

However, the manual jobs in the refineries (characteristic 5) exist mainly amongst service activities ancillary to the operating and engineering activities which are central to the task of oil refining. It is considered essential that the

company's philosophy should be appropriate to the nature of these central activities. For those activities of a different nature it may be necessary to modify them through technical developments, e.g., the introduction of mechanisation or automation, or to develop other social systems appropriate to them, in keeping with the values of the company's philosophy.

Despite the complication arising from characteristic 5 therefore, the major implication of this group of technical characteristics emerges as the need to develop a high level of personal responsibility and initiative.

6. *Responsibility and commitment.* People cannot be expected to develop within themselves and to exercise the level of responsibility and initiative that is required unless they can be involved in their task and unless, in the long run, it is possible to develop commitment to the objectives served by their task.

The company recognises that it cannot expect its employees at all levels to develop adequate involvement and commitment spontaneously or in response to mere exhortation. It must set out to create the conditions under which such commitment may develop.

The work of social scientists has shown that the creation of such conditions cannot be achieved simply by the provision of satisfactory terms of service, including remuneration. The provision of such terms of service is essential, but is not in itself sufficient; for involvement and commitment at all levels it is necessary to go beyond this, to meet the general psychological

requirements that men have of their work.

The following are some of the psychological requirements that relate to the content of a job:

1. The need for the content of the work to be reasonably demanding of the individual in terms other than those of sheer endurance, and for it to provide some variety.

2. The need for an individual to know what his job is and how he is performing in it.

3. The need to be able to learn on the job and go on learning.

4. The need for some area of decision making where the individual can exercise his discretion.

5. The need for some degree of social support and recognition within the organisation.

6. The need for an individual to be able to relate what he does and what he produces to the objectives of the company and to his life in the community.

7. The need to feel that the job leads to some sort of desirable future which does not necessarily imply promotion.

These requirements exist in some form for the large majority of men and at all levels of employment. Their relative significance, however, will clearly vary from individual to individual and it is not possible to provide for their fulfilment in the same way for all kinds of people. Similarly, different jobs will provide varying degrees of opportunity for the fulfilment of particular requirements.

They cannot generally be met, however, simply by redesigning individual jobs. Most tasks involve more than one person and, in any case, all jobs must be organisationally related to the company's objectives. If the efforts to meet the above requirements for individuals are not to be frustrated, the company must observe certain principles in developing its organisational form. Thus, the individual must know not only what he is required to do, but also the way in which his work ties in with what others are doing, the part he plays in the communications network and the limits within which he has genuine discretionary powers. Furthermore, the individual's responsibilities should be defined in terms of objectives to be pursued; although procedural rules are necessary for co-ordination, they must be reviewed regularly in the light of experience gained in pursuing these objectives.

Responsibility and authority must go hand in hand in order to avoid situations in which people are delegated responsibility but do not have the means

to exercise it. Likewise, the company must be ready to redefine responsibilities where there are capabilities which are unused.

Not least, the company must seek to ensure that the distribution of status and reward is consistent with the level of responsibility carried by the individual.

In following this course the company will seek the fullest involvement of all employees and will make the best use of available knowledge and experience of the social sciences.

7. *Principle of implementation of the philosophy*. The effective implementation and communication of the philosophy throughout the company can be achieved only if its mode of implementation manifests the spirit of the philosophy. Verbal or written communication alone will not suffice; it is essential that all employees be enabled to relate the philosophy to themselves by participating in the implementation of the philosophy in their particular parts of the company.

A special burden of responsibility must rest with the senior managers, who alone are in a position to exercise the leadership and provide the necessary impetus to translate the philosophy into a living reality. Starting with their commitment, it will be possible to involve progressively the other levels of the employees in searching out the implications for themselves. As the philosophy begins to shape the activities of the company it will be able more effectively to pursue its objectives.

Management Reactions to the Statement

The most important test the draft statement had to face was the detailed examination it received from the company's top management team. Unless the document was accepted by them the attitude-change program would clearly not be launched. For this purpose a three-day residential conference was arranged in October, 1965 at the Selsdon Park Hotel near London. Present were the managing director, his functional heads of departments and the general managers and their deputies from the refineries. Tavistock and ERP were there as advisers. With the managing director in the chair, the group worked through the document sentence by sentence, testing its validity and appropriateness to the company. Afternoons were free on the first two days, with working sessions before and after the evening meal. Informal discussions then carried on until late in the night.

The whole of the document provoked intensive discussion. It raised some new issues, and it focused a new light on old issues.

Primary Objective

Most important of all was the discussion on the formulation of the company's primary objective, since the concept of social resources and the idea of interdependent and complementary economic and social objectives lent cohesion to the the rest of the statement.

The concept of social resources itself and the notion that the company had legal rights only of privileged access to its resources rather than outright ownership was different from the traditional concept of property. Also unfamiliar was the notion that employees are social resources to be protected and developed rather than "commodities," however well they might be

treated. Yet the concept was accepted without much argument. While the idea came initially as a shock, the oil industry is sufficiently familiar with practical examples of the right of access to resources being withdrawn from companies by some societies through nationalization or expropriation for the concept to be recognized as relevant. Most of those present had worked in many parts of the world, and there was a fund of experience in dealing with the problems of setting up a new refinery--finding, recruiting and training people from the local communities. It was not difficult to perceive of such people as social resources.

There was, however, strong argument about the use of the term "profitability" in preference to "profits." The latter represented finite sums of money, the former a state of affairs which had continuously to be maintained if the enterprise was to survive. A vast concern like Shell was in business "for keeps"; it was not expendable and was intimately involved in many critical ways with the societies in which it operated. That it should continue to succeed and how it used its power were important issues to many people beyond itself.

The main debate concerned the validity of extending the scope of the primary objective beyond the commitment to maximize contributions to the group's long-term profitability. It was considered by some that the inclusion of the words "long-term" automatically ruled out any undesirable or antisocial methods of making profit, since such activity would inevitably have adverse repercussions on the company's reputation and its long-term prospects. In response to this argument, it was agreed that senior managers would to varying degrees carry in their minds the complex implications attaching to the phrase "long-term profitability." They were relatively well equipped from their privileged position in the company to be able to commit themselves to work toward such a complex overall objective. It was

unlikely, however, that those on the shop floor would carry a similar set of implications in their minds. Their set of implications would tend to be quite different, particularly if they--and others--interpreted the word "profitability" to mean simply the profits distributed annually to shareholders, the dividends always being made as large as possible at their expense. What the company was now seeking was an overall objective which all employees in the organization could understand in the same way and to which they could all commit themselves. It was therefore essential to spell out exactly what it should be and not to rely on implications which could differ between individuals or which might not be recognized at all.

There were three possible formulations of the primary objective the drafters could have used. They were referred to as positions 1, 2 and 3, the latter corresponding to the formulation used in the statement although for the purpose of this explication it was put in a simpler form. They were:

> *Position 1*. The company is primarily concerned to maximize its contribution to the long-term profitability of the Group.
>
> *Position 2*. The company is primarily concerned to maximize its contribution to the long-term profitability of the Group, with due regard for its social obligations for the welfare of its employees and the community.
>
> *Position 3*. The company is primarily concerned to maximize its contribution to the long-term profitability of the Group insofar as this arises from the efficiency

with which it uses the Group's resources of men, money and material, accepting that these are social resources to be used for meeting society's requirements.

Discussion

Position 1

It was argued that position 1 represents profit maximization without any qualification. It corresponded to the objectives which had been drafted by the top management team after their meeting in March 1965, of which the primary objective was: "To maximize the return on capital employed for the company, having due regard for manufacturing costs." This may be the conventional way of stating the objective of a business,2st but individuals working in an organization strictly guided by such a primary objective would tend to adopt a similar self-seeking attitude and would strive simply to maximize their own personal gain. Unions would see no reason why they should not struggle to get the biggest possible share of the cake. If profit maximization was the rule of the game, it was their job to learn to play it as well as they could. The example was quoted of the explicit adoption of just such a philosophy by unions in the United States after the Second World War (in place of the class struggle), and this had now crossed the Atlantic. Such a philosophy also told managers that their primary objective was their own career interests and that to be over-concerned about the good of the company was irrational.

Position 2

Position 2 recognized that the company had some social obligations which are seen as constraints on profit maximization. While legal constraints are normally observed, and

while the company may choose on occasion to go beyond legal requirements, it reserves the right to cut back whenever it feels it necessary to do so. Thus the choice as to the degree of social obligation that should be recognized in any particular situation is left entirely up to the company, which retains complete control in its own hands. Employees in an organization guided by a Position 2 objective would be unlikely to trust the management always to exercise its discretion in a fair and consistent manner. They may see it as a technique to buy off individual self-seeking. Such distrust would be confirmed and strengthened if the company chose to revert to Position 1 in hard times, which Position 2 leaves it free to do. At such times, paternalism would be replaced by the hard line. Employees would find their suspicions justified and would become angry and cynical. The way the recent reductions in manning levels had been carried out had led to serious repercussions and had caused a marked degree of alienation within the ranks of management itself.

Position 3

Position 3 differs from 2 in that it builds in an amalgamation of economic and social values and a criterion for their reconciliation: the commitment to efficient use of social resources. It openly commits the company to observe the amalgamation. It does not allow a reversion to Position 1. It lays the foundations for company objectives to which it would be hoped the commitment of all employees could in the long run be secured. An attitude of trust would be built up.

During the discussion there was some initial support from a few of the managers for the Position 1 approach. Although they agreed the company did not operate in that way, they

were reluctant to commit to paper any constraints on profit maximization (beyond those implied by "long-term") when they had no clear and rational criteria for doing so. It was generally felt that in the past the company's position had been that described in Position 2. It was recognized, however, that there had on occasions been swings back to Position 1, with apparent disregard of social obligations, and that this oscillation between 2 and 1 had undoubtedly contributed a great deal to the high level of distrust of management's intentions, not only among shop floor employees but also among supervisors and managers. A simpler example of such oscillation than the 1964 rundown was the extension of facilities for part-time studies enjoyed by staff workers to the hourly paid employees in the early 1960s and the subsequent withdrawal of these facilities a year or two later. Such pinpricks not only annoyed--they were symbolic.

It was finally agreed by everyone that Position 3 most appropriately described what the company was now setting out to do. It was particularly necessary to move in this direction in view of the accelerating rate of technological change and the higher level of uncertainty this brought about for all. Position 3 offered the prospect of establishing a positive and consistent pattern of management, a stable anchor in an unstable world. The conjunction of the economic objective and the social objective was felt to be valid and acceptable. Moreover, it was considered that far from being a constraint on profitability, the recognition of the need to protect and develop social resources would, in the long term, prove to be contributing to the company's profitability. To treat employees as resources and to develop their talents would be more than ever necessary in the more automated and changing world of the future. The two parts of the primary objective were not opposed but complementary.

IMPLICATIONS OF POSITION 3

Some of the implications of accepting Position 3 as the primary objective were explored in depth. For example, it meant that profit could be sought only through the efficient use of resources: profit from exploitation or degrading of resources would be contrary to the objective. This applied equally to the treatment of people, raw material, equipment, money or the environment. It ruled out such activities as the crude use of market power, or price fixing, as a substitute for the continuing search for improved competence in the manufacture of competitive products of quality. By committing themselves explicitly to this social objective of protecting and developing resources, managers would be open to question by employees if their decisions appeared to be inconsistent with it. Further, in establishing social objectives down the line, alongside operational objectives, it would become necessary to give greater recognition to social costs, whether these were borne by employees in terms of stress or obsolescence or by the community in terms of nuisance or pollution.

Clearly, however, some limits had to be set - The commitment to protect and develop resources could not be open-ended. The principle was accordingly established that the commitment should apply only to those resources which the company used. It was not committing itself to expenditure on community resources which it did not itself use. Further, the level to which it should protect and develop its resources was to be interpreted in accordance with the prevailing standards and values of society.

To take a practical example, the company could not unilaterally be committed to eliminate all Pollution resulting from its operations regardless of cost. Yet some managers felt the company should undertake some measure of leadership in this respect. Taking a leadership

role meant anticipating the future; it meant seeking improved solutions by setting its own reasonable example and by using its influence to secure the cooperation of others. As a result a guideline was built into the document by an addition to specific objective 2:6 which then read: "seeking to reduce any interference that may be caused by its activities to the amenities of the community, accepting the measures practised under comparable conditions in British industry as a minimum standard and making use of the expertise and knowledge available within the Group."

The Company's Position Within the Group

Discussion of the third paragraph of section 1 of the statement, which describes the implications of the company's relationship with the Group, served to reinforce several already recognized needs. Separated from the market at both the crude input and the product output ends, the company had no meaningful profit indicators by which to measure its own efficiency. In their early visits to the refineries, the Tavistock team had found this to be a cause of great anxiety among manufacturing people, allied with feelings of inferiority to and resentment of marketing people. It encouraged misleading beliefs about profit centers in manufacturing locations, beliefs which were particularly unsuited to Group balancing refineries. The company's specific objectives had, therefore, to be framed in terms of meeting the requirements put upon it with the minimum expenditure of resources. This did not equate with cost-cutting. It meant meeting market requirements in a way which "used up" the minimum of its total resources and which was compatible with protecting and developing them.

This led to the underlining of the need for the company to generate more

effective yardsticks of its own performance. Also underlined was the need for better communication channels across the company boundary with the Group central supply unit and with the marketing organization. This would permit more information to flow into the company and provide greater opportunity for the company to challenge decisions affecting its operations. As the potential benefits this would bring were perceived at company level, so it was recognized that people at the refineries would have similar needs and similar potential benefits at their level.

A new specific objective, 2:3, was in due course added to the statement. It read: "In addition, the company is specifically committed to: seeking continually from the Group the power and information necessary to enable it to meet its responsibilities. In certain circumstances it may be necessary to seek a redefinition of its responsibilities in order that the company's capabilities may be best used on behalf of the Group."

Joint Optimization as a Guide to Implementation

While it was conceded that the use of jargon should be minimized, the terminology of the statement was defended by Tavistock on the grounds that every branch of knowledge has its own set of concepts which people have to learn if they want to understand what it has to offer. Furthermore, an advantage of the use of the appropriate terminology was that it ensured that important points would be adequately discussed and explored. A danger inherent in the use of paraphrase was that people would tend to accept points as obvious, without considering their implications. Thus while "joint optimization of the “socio-technical system" at first gave people pause and demanded explanations, a paraphrase such as "the best matching of the people and the equipment in the organization" might be accepted as reasonable

or self-evident and passed over without challenge.

The conference members accepted without difficulty the notion that any production system consists of two parts: the social system, made up of people, with their physical and psychological requirements and characteristics, and the way they are organized, both formally and informally, in the work situation; and the technical system, comprising the equipment and plant with its particular characteristics and requirements and the way it is laid out. The idea of joint optimization was that these two subsystems should be matched together in the most appropriate and effective way.

The main difficulty shared by most managers was, however, to imagine that there could be any better or significantly different way of organizing people to operate a process unit, or any other piece of equipment, than the traditional way. Until it was accepted that there was, in fact, a wide range of choice in the way the social and the technical systems could be matched together, the real significance of the concept of joint optimization was not apparent. What served to bring home to the conference members the meaning of organizational choice was a graphic description by one of the Tavistock team of the contrast in effectiveness between two methods of operation of longwall coal faces (Trist et al., 1963 / Vol. II). From this point on, the possibility of applying the concept within the refinery situation became more real.

The socio-technical approach to designing jobs and organizations was seen as striking a balance between the two main theories which had previously governed---and mostly still do govern---the way jobs are set up.

The most common approach to job design has always been machine-dominated. This is the mechanistic or "scientific management" approach (Taylor, 1911i), which regards the

people who must operate equipment virtually as extensions of the machinery. Time and motion study, payment by results schemes and much of current industrial engineering have derived from this traditional mechanistic approach to job design. In a situation where the work force is willing to submit to boring, tiring, repetitive jobs, the approach produces results. In a situation, however, where the work force becomes frustrated and antagonized by the nature of their tasks, the system can easily be disrupted if they behave in ways other than those laid down.

If the scientific management approach concerns itself mainly with the technical system, the second major approach---the human relations school---is concerned almost entirely with the social system. The human relations school sprang from the work of Elton Mayo, who, through his studies at the Hawthorne works of the Western Electric Company over the years 1927-33, demonstrated that the social system in an organization had very distinctive characteristics of its own (Roethlisberger and Dickson, 1939).

The human relations approach with its stress on the individual's attitude, role in the group and status in the social system undoubtedly led to improvements in working conditions, welfare arrangements and employee services. But it focused exclusively on the social system with virtually no regard to the effect the technical system had on people's actual tasks. Its usefulness has accordingly tended to be limited.

The new feature of Tavistock's socio-technical approach to job design was the recognition that, because of their interdependence, the social and the technical systems had to be considered together. As the coal mine studies had clearly demonstrated, it was necessary to analyze exactly what requirements the technical system imposed upon the people who operated it. Only then was it possible to organize the tasks in a way which both satisfied the technical

requirements and made the best use of the properties of the social system itself.

The scientific management approach required people to carry out simple, repetitive tasks in a consistent manner over long periods of time. Machines are eminently suited to this type of task-people are not. The socio-technical approach, by contrast, seeks to utilize those capabilities of the social system which are distinctively human, for example, the ability to be flexible and adaptive, to make judgments and decisions. Only by matching these human capabilities with the complementary characteristics of the technology can the best overall result be obtained.

Furthermore, by arranging tasks in a way which enables people to utilize their distinctive capabilities, the socio-technical approach opens up the possibility of motivating people through their interest in, and commitment to, their work rather than simply through financial rewards, as in the scientific management approach.

That people should be interested in and committed to their work becomes particularly necessary in advanced and changing technologies. The statement’s examination of the key characteristics of the company's refining technology brought out the fact that the basic skills required were perceptual and cognitive. People had to use good judgment and make good decisions. This could not be secured by external supervision. Hence the importance of involvement and commitment. To correct errors after they had occurred was too late and too costly. Workers had to be self-regulating and internally motivated to anticipate events. This was not simply desirable, it was essential for the efficient operation of the system.

Practical Implications

The outcome of this discussion was general agreement that the concept of joint optimization was highly relevant to the company's situation. The technical manager present said the company had concentrated very much on optimizing the technical system. Only after the design of a new technical system was complete would the question of manning it normally be considered. The concept of joint optimization implied the need to plan technical and social systems together if the best results were to be achieved. The new refinery at Teesport provided an opportunity to do this.

Another major implication of acceptance of this concept, and one which was to be discussed again at many location conferences, was that the manager of a department must be responsible for the entire socio-technical system and not only for meeting operational targets. The tendency in the past had often been for the manager to concentrate attention on the problems of the technical system and to pass problems arising in the social system to the personnel department.

Psychological Needs

Section 6 of the statement, dealing with the conditions which have to be provided if people are to develop responsibility and commitment to their tasks, was accepted by the management team as relevant to the refinery situation. There was general agreement that in many parts of the organization the company was not fully utilizing its human capabilities. There were also doubts, however, about the extent to which it would be possible in practice to establish appropriate conditions for some sections of the work force, but there again the limits of what might be feasible were not known.

Results of the Conference

During the concluding session on the third day, each manager gave his personal reactions to the contents of the draft statement. The managing director reserved his own views until last.

The outcome was that each manager accepted the document as valid and appropriate to the company's needs. Each gave his commitment to manage in accordance with its principles. The level of enthusiasm varied and some reservations were expressed but overall there was strong support for the statement. One manager believed that this event could well prove to be the most important management conference the company had ever held. The managing director made clear his own support of the principles and said that the three days' testing of the statement had dispelled some initial skepticism. He then stated his personal commitment.

The reservations expressed were concerned mainly with the difficulty foreseen in getting the statement widely disseminated and understood throughout the company and uncertainty, at this stage, about how the ideas in the philosophy could be put into practice. Conference members themselves would need more time to consider fully the implications of the statement for their own roles and their own departments. It was also felt necessary to see how senior managers in the refineries reacted to the philosophy before it was transmitted down the line, and certainly before the trade unions were involved.

Action Items

The following decisions were taken:

• In view of the successful outcome of the trial period and the acceptance of the draft statement, the action research relationship with Tavistock would be extended so that they could help with the dissemination process and with the development of the program. It was recognized that their participation in the Selsdon Park conference had been a critical factor in its success.

• Each refinery, and head office, would hold its own conferences to discuss the statement with their own senior staff. Tavistock and ERP would be available to help if requested.

• When all senior staff in the company had had the opportunity to work through the statement, a further conference of the top management team would be held early in 1966 to review progress and decide what further steps to take.

• The Statement of Objectives and Philosophy would continue to be regarded as a draft. It was anticipated that additional modifications and improvements would be proposed from staff at the refineries. ERP was to be the custodian of the draft, responsible for collecting and coordinating all suggested amendments.

• Until the statement had proved acceptable to refinery senior staff and the program was more firmly established, it should be given minimum publicity in order to avoid undesirable rumors. At the refineries, where the absence at conferences of numbers of senior staff could hardly go unnoticed, it should be stated simply that the company was studying in depth its objectives and method of operating. If and when there was anything further to communicate, it would be done.

• Location managements should begin to consider what were the implications of the statement within their commands, in terms of action to be taken, both at their own level

and at less senior levels in the organization, and eventually on the shop floor and in the unions.

The refinery conferences at all levels, including the unions, were held in residential settings and lasted two-and-a-half days. The general manager was in the chair and his deputy was with him. ERP and the Tavistock were present. There were 20 to 30 refinery people each time, working sometimes as a whole group and sometimes in small groups. A number of modifications and amendments were introduced, but the basic philosophy emerging from the top management conference was accepted by all groups, though the degree of commitment varied. The next step was to create implementive projects that would put the philosophy into action and involve the managers and workers immediately concerned in carrying them out.

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