A study of industrial training and development in the chemical industry

A STUDY OF INDUSTRIAL TRAINING AND DEVELOPMENT IN THE CHEMICAL INDUSTRY

Dissertation submitted to Loughborough University of Technology in part fulfilment of the requirements for the degree of Master of Science in the Department of Industrial Engineering and Management.

B.C.Turner.
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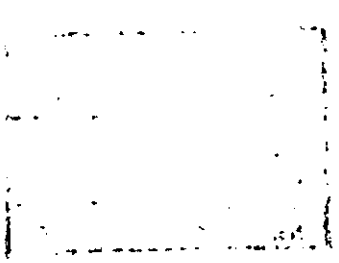

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SYNOPSIS

The Industrial Training Act, 1964 was enacted with the broad aims of reducing the skilled manpower shortfall in industry and improving productivity. It is the author's contention that the Act as it is currently being interpreted will not affect the training practices of a large number of important companies significantly enough to achieve the foregoing aims, despite a great need to raise the value being obtained from training in such companies.

The need for and organisational criteria for establishing sound training in a company are discussed; the national training framework is considered; and an attempt is made to verify the foregoing claims by an examination in depth of the training practices of a "training oriented" medium-size chemical company.

INTRODUCTION

In recent years the investment in industrial training in the United Kingdom has increased enormously and there is no doubt that the increased investment is essential as one means of improving the economic state of the nation through raising the quality of its working population, its most important natural resource. The Industrial Training Act of March, 1964, translated into law the Government's Proposals for securing an improvement in the amount and quality of training and a more equitable distribution of the cost of training. The Government through this Act ended the nation's laissez-faire attitude to training and made training as unavoidable a cost for individual firms as are raw materials, or wages and salaries, or investment in plant, equipment and buildings.

The study reported here represents an examination of the training practices of a chemical company with a view to:

1. Establishing whether the 1964 Act has had, or as it is being interpreted is likely to have, any impact upon those training practices, and
2. Assessing the current value being obtained from training in the company and through this subjective judgement of training evaluating the need for and most realistic role of an Industry Training Board.

Considerable criticism has been made of the industrial training system which has grown out of the 1964 Act but a review of the literature reveals that very few factual case studies of the individual firms forming its base have been reported. There tends to be a great deal of opinion expressed without reference to facts. Until studies in depth are undertaken and opinions can be based upon factual grass-roots evidence in industry, modification of the existing system to better achieve the desirable aims of the Act will not be founded on reality considerations. It is the author's

hope that the study will be seen from this constructive viewpoint and that it will be the forerunner of many similar depth studies, thereby permitting a body of evidence to be accumulated about the state of training generally.

It must be stressed at the outset that this study has been undertaken in a "training oriented" company, i.e. a company which has recognised the need for industrial training for a considerable period of time and endeavoured to meet that need. This being the case the training 'baseline' is high compared to most companies in British industry. It is against this background that criticisms of the existing company practice need to be considered. However, what also needs to be stressed is that this is the case with a large number of chemical companies, because of the nature of the industry, and despite this the aims of the Industrial Training Act are no less valid for the chemical industry than they are for any other industry.

CHAPTER 1: THE INDUSTRIAL TRAINING NEED.

1.1. The National Need.

The story of the British economy through the 1960's is a familiar one. In relation to overseas competitors our progress in getting more output to justify more input has left much to be desired. Although the country has been growing at a faster rate than ever before in its history, every other comparable country in the world seems to be doing better.

The basic disease is clearly diagnosable.[1] It is that this country is not, and for a long time has not been, sufficiently competitive in world markets: our costs and prices have tended to rise more rapidly than our competitors and are now doing so at an increased rate. Since 1963, the output per man hour in manufacturing industry rose less in Britain than in any other industrialised country outside the United States - where output per man hour is much greater in absolute terms. In Britain it rose 27 per cent, in West Germany 44 per cent, in France 43 per cent, in Italy 50 per cent, and in Japan by 102 per cent. In the same period our increase in industrial production at 23 per cent was the lowest of any industrialised country: it contrasts with 122 per cent in Japan, 61 per cent in the Netherlands and 44 per cent in West Germany. Similarly our wage cost per unit of output has risen more than any other industrialised country. It rose by 20 per cent as compared with 4 per cent in Japan, 8 per cent in West Germany, 9 per cent in France, 10 per cent in Italy and 13 per cent in the United States. In the result since 1963 our share of manufactured exports has fallen more than any other industrialised country. In 1963 it was 15.4 per cent: to-day it is under 11 per cent.

There is no single or complete answer to the question of why the British economy has shown this steady loss of competitiveness compared with other countries. However, one essential requirement to redress the

situation is to raise the productivity of each man employed, i.e. the economic effectiveness of human skills, by introducing labour-saving equipment, by deploying labour more economically and by improving the skills of individual workers.[2]

There has been a failure in British industry to critically appraise the way we use our manpower. This was highlighted in the chemical industry by a particular study,[3] the results of a calculation showing how many men a typical American company would require to produce the same output as a theoretical British firm with 100 employees being tabulated below:

	Number of employees		
	British firm	American firm using British size production units	using American size production units
Production (inc. supervision)	48	39	22.5
Control laboratories	5	3.5	2
Maintenance and utilities	21	12	9
Works clerical and administration	16	9	6
Others (packaging, dispatch, etc)	10	0.5	0.5
Total	100	64	40

To achieve the objective of improved productivity a range of complementary measures is essential. Industry must be ready to invest in technologically advanced equipment; and the trade unions to permit the new machines to be fully utilised. Movement of labour to expanding and successful industries and firms has to be facilitated, and every effort made to help employees to advance to more skilled and responsible work. Overmanning and underemployment must be discouraged, so as to release valuable skills for more productive and demanding work, and training must be extended and improved.

The problem of maximising the effectiveness of the labour force is in a sense ultimately one of training. The introduction of new plant may require the retraining of the existing workers. Re-deployment may depend partly on the ability of those redeployed to master another job; and this ability will almost certainly be greater if early education and training have been broad-based and thorough.

The manpower 'gap', therefore, reflects, to an important extent, a training - and retraining - 'gap', with the associated need to ensure that carefully developed skills are appropriately used.[4] Unless the 'gap' is closed, through sufficient attention to both of these factors, it will have increasingly serious consequences for the country's economic growth and its survival as a leading industrial power.

1.2. The Company Need.

In terms of the micro-economic environment of each firm, directors and top managers must recognise that sound and well-organised training is essential to the greater efficiency and profitability of an undertaking. A company's overall objective is to use resources, including human resources, in an optimum way, so that the company does not waste the total resources of the community and at the same time earns a reasonable return on investment and thus maintains its own financial viability. The best results can only be obtained if managers regard continuous and soundly-based training as a valuable economic activity and as an essential function of the job of management rather than as a social duty.

Many managements view the establishment of systematic training as an added expense, rather than as an investment. The relationship of sound education and training to improved profit margins is one that is seen clearly by only a few advanced firms. It is admittedly not always an easy relationship to demonstrate, but there must be few cases where it does not exist.

Since training tends to be an investment, it must be viewed from the long term. This means waiting for its benefits, and many managements are understandably overwhelmed by short term events and decisions. 'We can't waste time on training when we've got to get production out' is a commonly heard remark. It may have some justification, but only in the short term.

Industry finds a pay-off from good industrial training through a better qualified, more flexible and more adjustable work-force in terms of greater efficiency and higher productivity. The highly competitive nature of to-day's market place demands that each firm obtains an optimum return on its human assets and it must be recognised that sound and meaningful training is one of the basic requirements for achieving this optimum.

The function of training in meeting the individual need will be discussed in chapter two through consideration of the basis for motivation of employees.

CHAPTER 2: EMPLOYEE MOTIVATION[5]

Today managers are seeking a theory of employee motivation which, when applied, will identify the work-force with the company and obtain its commitment to company objectives. They want employees who are prepared to work towards high performance goals, employees who are willing to be flexible and to accept change as the speed of technological development increases. The existence of so many approaches to motivation suggests the complexity of the problem and many factors are capable of motivating employees. Some of these factors are a normal part of the industrial situation and can be controlled in some measure by the company; other factors have their origin in the individual employee in his home, or in his community and are beyond the company's control. Also, those forces that motivate a person today may be of little value as motivators next month or next year. Fundamental to the success of any plan for motivating employees is the extent to which the intended motivators meet the needs of the individual employees for whom they are designed.

In this chapter the basis of motivation will initially be discussed as a means of developing certain concepts that will illustrate the worth of intended motivators and emphasising the role which sound training can play.

2.1. The Basis of Motivation.

The study of motivation attempts to answer the why of human behaviour. Why do people behave as they do? Motivated behaviour has three distinguising characteristics. First, motivated behaviour is sustained, i.e., it persists for relatively long periods of time. Second, motivated behaviour is directed toward the achievement of a goal; and third, it is behaviour resulting from a felt need.

Thus as a result of perceiving a need, a tension or imbalance is created within the individual that leads to activities intended to reduce the tension

thus created. Diagrammatically:

A Perceived

Need → Tension (Motivating Force) → Activity → Reduction of Tension (Achievement of Goal)

Hence if the efforts of organisations to motivate employees are to be successful management must either create felt needs within the individual or offer a means of satisfying needs already in existence within the individual. What are the fundamental needs of man?

2.2. A Hierarchy of Human Needs.

Numerous systems have been developed for the classification of human needs, ranging from those that attempt to explain all human motivation as the result of satisfying one basic need or drive to classifications that list 25 or more separate needs. However, one of the most useful and widely quoted classifications is that developed by Maslow[6], who suggested that human needs are organised into a series of different levels, - a hierarchy of importance. The ascending order of importance of this hierarchy is as follows:-

1. Physiological Needs - Man's basic needs are physiological, e.g. hunger, thirst, sleep and so on. When these are satisfied they are replaced by 2.

2. Safety Needs (Security, order) - reflecting his desire for protection against danger or deprivation. These, in turn, when satisfied, are replaced by 3, social needs.

3. Belongingness and love (Affection, identification) - these are functions of a man's innate gregariousness and his desire to belong to a group, to give and receive friendship and to associate happily with people.

4.	Esteem Needs (success, self-respect)	-	above 3 Maslow affirms there are egoistic needs, related to our desire for self-esteem and self-respect, which are affected by our standing, reputation, and our need for recognition and appreciation.
5.	Self Actualisation (desire for self-fulfilment)	-	finally, individuals have a need for self-fulfilment which is bound up with their views about the purpose of life and is a reflection of their urge for self-development and to be creative in the broadest sense of the word.

This theory provides an extremely important and useful conceptual framework provided it is recognised as a model and that it is not intended to imply that the emergence and strength of needs follow a rigid pattern. The limitation of the theory is that it appears to provide an over-simplified solution to what is really an extremely complex problem. Human desires and aspirations are confused and intermingled and there are many reversals and substitutions of needs.

There is probably no universal motivator for all mankind, nor is there a single motivating force for any one individual. Needs are relative in their strength and it is not necessary to satisfy a "lower" need fully before a "higher" need may emerge and operate as a motivator. Needs are felt gradually and may become motivators along with the other needs, even though the earlier needs are not completeley satisfied. The complexity of the problem of motivation can be fully seen when it is realised that the levels at which this interplay of needs commences varies from one person to another, that the significance of each need also varies, and that within the same person the relative degree of satisfaction and the significance of each need

also vary from time to time. In addition, there are factors other than the variable characteristics of the basic needs that influence motivation, such as a person's evaluation of himself and his interpretation of his environment.

The foregoing discussion of needs has been general in nature but it is pertinent to the industrial situation. It suggests that the criteria which managements use as the basis of their views on employee motivation (in particular the role of money) are limited and the industrial environment is restricted as a result. The criteria are related almost entirely to people's lower level needs and they do little, except fortuitously, to satisfy the higher needs of individuals in the employment situation.

2.3. Motivation - Hygiene Theory.

An important development of this concept of the "hierarchy of needs" has been propounded by Herzberg,[7] based upon depth interview studies with engineers and accountants. Herzberg differentiates between factors which lead to satisfaction in the industrial situation - "satisfiers" or motivators - and those which contribute little to satisfaction but create feelings of frustration and unhappiness - "dissatisfiers" or "hygienic" factors.

He found that experiences which create positive attitudes toward work arise from the job itself and function as motivators. These incidents are associated with feelings of self-improvement, achievement, and the desire for and the acceptance of greater responsibility. The feelings thus generated are of a relatively long duration and result in increased productivity. The second set of factors related to productivity on the job are conditions peripheral to the job itself. Pay, working conditions, company policy, and the quality of supervision are all part of the environment of work but peripheral to the tasks of the job itself. When these factors are inadequate they function as dissatisfiers; but when present they do not motivate. Instead they are hygienic in character in

that their presence makes it possible for the motivators to function; positive feelings aroused by these peripheral conditions of work, such as a word of encouragement from a supervisor or an increase in pay, are relatively brief in duration. Another finding of Herzberg's study is significant. When employees are highly motivated and find their jobs interesting and challenging they are able to tolerate considerable dissatisfaction arising from the peripheral factors of work, but the reverse is not true. A full measure of all hygienic factors does not make the job interesting.

One obvious limitation of Herzberg's work is that his subjects were 'professional' level. The concept has been broadened through most employee categories by Dr.M.Scott Myers[8] and the results of his study are shown pictorially in figure 1. Note that the inner circle - motivational needs - contains those factors directly related to the job, while the other circle is composed of maintenence needs. Employees seek satisfaction in the area of maintenence needs - those factors peripheral to the job itself - when the motivational needs of growth, achievement, responsibility and recognition are not satisfied. The relative importance of maintenence needs diminishes when motivational needs are satisfied.

2.4. The Training Role.

Hence there is a very apparent need for managements to turn their attention to the positive motivating factors such as achievement, the work itself, and responsibility, and to develop policies of "job enrichment" which will fulfil these requirements. The importance of the training function is readily apparent in the light of this discussion, sound training providing one means by which the motivators can be practically applied in the industrial situation. Thus training is crucial if people are to be given the fullest opportunities to give of their best to their work. However, the function cannot be viewed in isolation. It is not a panacea.

It is one of a number of influences on productive performance, economic, technical, administrative and social, which are all components of a disciplined management but none of which can be effective in isolation.

CHAPTER 3: THE TRAINING FUNCTION IN THE MINING ORGANISATION

3.1. A Person - Centred Activity.

The training function is "organic" in nature,[9] i.e. concerned with people, a point which was stressed in the previous chapter. It is one of a number of influences which, utilised correctly, can improve the performance of the individual at work. Thus the aim of training is to improve job performance by extending knowledge, inculcating skills and modifying attitudes, so that individuals can work in the most economical, efficient and satisfactory way.[10] If this general aim is accepted it follows that training must satisfy real needs. It must be based upon the needs of people to fulfil the jobs for which training is necessary. Unless the individual in his working environment is seen to be the focal point of training then the value obtained from training cannot approach the optimum. Training must be person-centred so that trainees become confidently involved in their own development.

3.2. The Role of the Manager.

Every manager stands to lose if the performance of his subordinates does not come up to standard.[11] He stands to lose output, prestige, possibly money and eventually his job.

Responsibility for performance means therefore that the manger will also be held accountable for ensuring that his subordinates have the necessary resources, including skills and knowledge, to attain the required standards. A manager is thus responsible for ensuring that his subordinates are adequately trained. This responsibility he cannot delegate, since he must take final responsibility for their performance.

Responsibility for ensuring that subordinates are adequately trained does not mean that a manager must carry out the formal training himself, or that he must decide what methods of instruction shall be used. However, each manager's minimum responsibilities for training are to:-

a) make known the standards of performance;

b) ensure that his subordinates are adequately trained to obtain these standards;

c) decide the training requirements of his subordinates;

d) decide how they shall carry out their work;

e) decide in what way they shall be trained;

f) request additional help in instruction;

g) ensure smooth transfer from training to working on the job and vice-versa;

h) constantly maintain a training-oriented approach when handling subordinates.

Unless each manager recognises that training is a management function and this philosophy permeates throughout the company, a further major means exists for suboptimising the value of training. The acceptance of the foregoing responsibilities must also be apparent at all levels of the company hierarchy, based upon the formulation of a sound policy and evidence of a committed attitude at the 'top'. If senior management is not convinced that training is of vital importance, then this attitude will quickly be sensed by those at a lower level. It is therefore essential to adopt practical measures which place clear responsibility for training upon the management at every level.

3.3. The Role of the Training Officer.

It has been suggested above that the degree of training responsibility which can be delegated to someone else by a manager accountable for the performance of his subordinates is in fact rather limited. It is limited chiefly to responsibility to carry out training and for determining training methods, together with the need for overall company co-ordination and record keeping. However, these responsibilities require a good deal of time and specialised knowledge and in any company of reasonable size a case will exist for a specialised training department. Herein lies a very real danger that training may become too specialised, too isolated, and too much

of an empire in its own right. This danger can be reduced if the training departments task is constantly viewed as the provision of services to the requirements of operational management. The Central Training Council in a report [12,13.] state:-

"The function of the Company Training Officer is to provide a service of knowledge, advice, skill, and administration which will enable the company to fulfil its responsibility. Company training policy is a matter for management, and the implementation of that policy is normally the responsibility of both line and staff management, in co-operation with the Training Officer."

Thus when a manager delegates training to a training officer, he delegates only a proportion of his responsibility for the training function as a whole. The actual division of tasks will vary from one situation to another, of course, but the principle that one can delegate only a portion of responsibility probably applies to almost any function in any kind of organisation.

3.4. The Training System. [14]

Having placed the fundamental basis of training and its practical application in perspective it is now necessary to examine the function in terms of what actually must be done in any given company. The concern here is with the generality of the training function and in establishing a common basis equally applicable to any training situation.

Since a start should be made from aims, the first general task is to identify training needs. When this has been done, a policy has to be formulated to meet them. Detailed consideration must then be given to the implementation of the policy and finally, methods must be found by which the effectiveness of the training can be measured.

It is important to remember that these four main tasks or steps will not

be carried out in vacuo; they will be done in the context of what Martin has termed social factors, which impose certain limits or constraints. Constraints will be imposed by the policies of the Industry Training Board concerned with the particular working organisation, as well as by national legislation. A second factor is the existence of the educational system. To integrate training with further education, the working organisation must make full use of the educational system and dovetail its efforts with what the system can provide. The last main social factor is the working organisation itself; we do not live in an ideal world where the training and education needs of the individual will always exactly match those of the organisation which employs him.

The four main steps and the three broad types of social factors which provide the context of its operation can be set out as shown in figure 2. This 'information loop' way of looking at the training function serves to draw attention to the following important points:

(1) The assessment of training effectiveness is seen as a crucial stage which provides 'feedback information'

(2) With 'feedback' the training function becomes dynamic, leading to constant re-examination of needs, re-formulation of policy and review of the training process itself.

(3) There is a two-way interaction between the various steps and the social factors which provide constraints on how they are carried out. These constraints are not permanent and inflexible, since their policies and provisions will change as more 'training information' becomes available.

The working organisation factor is particular to any company, its goals, processes, policies and personnel practices providing the constraints. The other social factors forming the training framework will be discussed fully in chapter 4. Further consideration will now be given to the four main

steps in the training system, though it must be stressed again that every step in the application of the system is limited in some way by the social factors and that every step taken will provide 'feedback' which will in turn modify these factors.

3.4.1. Survey of Training Needs.

Basically, training needs may be determined by finding out what is going on now and matching this against what should go on, now and in the future. The gap gives clues to the kind and amount of training needed. The "finding-out" tool is the standard of performance for the job.

The responsibility for the survey rests with the chief executive, because it is he who must ultimately answer to the board for the performance of all employees. He is therefore responsible both for setting standards of performance and for providing training to enable employees to meet these standards.

The chief executive will normally delegate to his immediate managers responsibility for carrying out the survey in their divisions. They in turn may need to request help from specialised training and personnel employees on the methods of the survey. But if the survey and any training schemes which follow are to be effective it is essential that the management should carry responsibility for the major decisions, for it is these managers who will suffer if performance does not come up to standard through lack of training.

3.4.2. Formulation of Training Policy.

With all the facts and estimates available long and short-term policies can be laid down, based upon the agreed assessment of the company's situation. By consciously considering its principles of training a management determines how, in general, training will be carried out. Consideration must be given to such factors as:

(1) the priority to be given to training;

(2) who in principle will carry out training;

(3) what in general will be taught; and

(4) the sufficiency of the resources available in the company to develop its formal training activities.

It must be stressed that policy can not be determined in isolation. In conjunction with the needs analysis it is a major undertaking and a team effort demanding the attention of all the functional experts and all the top managers as well.

3.4.3. Implementation of Policy.

The way is now clear for decisions to be made about the training arrangements necessary to satisfy the training needs of each individual and to co-ordinate these needs into a company-wide programme.

One of the problems is to establish the priority of specific needs, i.e. it is likely that a number of general needs have been identified which are equally important and equally pressing. Here again such basic decisions must be made at the highest level of management.

Once priorities have been established detailed decisions can be taken about the location of training, the form it should take, the lengths of training periods, etc., leading ultimately to the establishment of individual training specifications and departmental and company-wide plans, related to time.

3.4.4. Assessment of Training Effectiveness.

The last stage, and perhaps the most neglected in industry, is to consider the means for reviewing the effectiveness of training. This is not an easy task, but if training is to be an accepted essential integral part of the business, it must stand up to rigorous investigation of its worth. The difficulty is that training is concerned not only with the acquisition of knowledge, but the acquisition of skill, experience

industrial attitudes, involvement in and an appreciation of industrial life.

It is important to realise that there are two aspects to be considered under the term 'assessment' viz. the evaluation of whether a particular training programme is worthwhile, and also the validation of whether the training given has been successful in achieving its aim. Thus comprehensive evaluation will include the assessment of:

(a) The validity of the training policy and the plan to apply this policy to the discovered learning need;

(b) the way in which learners are given opportunities to learn and are motivated to learn - i.e. the training and instruction methods, materials, aids, locations and levels of people giving the instruction;

(c) the ultimate results in terms of the performance achievement or changed behaviour of those who have learned.

Assessment will generally include the use of written examinations and the collection of opinions from trainees, instructors and management, and to be valid must continue over a reasonable period of time.

Here again the job-centred assessment is primary i.e. the post-training evaluation on-the-job by the responsible senior. Job performance must be the basic benchmark of assessment.

In some areas it is possible to make calculations of the benefits given by training in financial terms. A considerable body of specialists are devoting effort to extending this practice and it must be undertaken where practical. However, in a vast number of cases the effects cannot be quantified financially.

Consideration will now be given to the development and present scope of the framework of the industrial training system.

CHAPTER 4: THE NATIONAL INDUSTRIAL TRAINING FRAMEWORK

4.1. Recent Historical Development.

A gradual revolution in industrial training took place during the two decades prior to the Industrial Training Act 1964. During this period many progressive organisations, both large and small and some of the trade unions, made considerable progress in the development of their training systems. This development was fostered and encouraged by the work of such organisations as the British Association for Commercial and Industrial Education, the Industrial Society, the British Institute of Management and the professional Engineering Institutions to mention but a few. The Government encouraged developments but with no direct participation except within its own Departments and Government Training Centres.

Discussion of industrial training focused mainly on the apprenticeship system: first because this was the most significant form of vocational training; second because the apprenticeship had failed to provide the number of skilled craftsmen and technicians the country needed; and thirdly because of its deficiencies as a method of training. As concern about the supply of skilled manpower increased, so also did criticism of the system under which most craftsmen and technicians were trained. Most critics believed apprenticeship to be an inefficient and wasteful means of training fettered with a variety of restrictions which made it far too inflexible to meet the needs of a modern economy.

In 1956, a sub-committee of the Ministry of Labour's National Joint Advisory Council under the chairmanship of Mr.Robert Carr (then Parliamentary Undersecretary of the Ministry) was established to look into the question of apprentice training and, in particular, the adequacy of existing institutions to cope with the challenge presented by the so-called "bulge"

of school-leavers expected to enter the labour market beginning in 1962. The 1958 report of the Carr Committee[15] reaffirmed the position that: (1) Vocational training was the sole responsibility of industry; (2) the apprenticeship system of training should be retained; and (3) Government should concentrate its efforts on the expansion of the nation's system of further education.

The Carr report also recommended the creation of a voluntary national apprenticeship council to encourage employers to provide training and to increase the number of apprenticeship openings for school-leavers. The Industrial Training Council was duly set up in 1958 to accomplish these proposals. With little executive or policymaking power, the Council centred its efforts on educating employers; little progress was made in modernising the nation's training arrangements.

The Industrial Training Council did, however, establish a small team of training consultants, the Training Advisory Service (now known as the Industrial Training Service), which soon came to play an invaluable role not only as advisors to firms on training problems, but also as expert consultants to the Council itself. (The Industrial Training Service has played a significant role more recently in the implementation of the Industrial Training Act by conducting research for and training key employees of the Industrial Training Boards).

An increasing barrage of criticism of the allegedly out-of-date training system, based for the first time on factual research data, occured in the period from 1958 to 1962. The work of a number of scholars highlighted the lack of quality control and the disturbing fact that the training of most workers consisted largely of "sitting next to Nellie."[16] The Government of the day was implored to take action and change its attitude

from one of benign paternal encouragement to one of assuming some responsibility for training in industry.

Partly in response to this criticism, the Conservative Government in the early 1960's adopted the concept of planning by establishing the National Economic Development Council and became committed to an annual growth target of 4 per cent.[17] The attempt to secure a higher rate of economic growth without risking serious inflation, clearly depended in part on having an adequate supply of skilled manpower. At the same time, Britain's negotiations over entry into the Common Market, increasing competition in world markets, and the need to re-deploy redundant coal miners and railwaymen, all pointed to the need for a more active manpower policy on the part of the Government.

During the period from 1960 to 1962, several possible initiatives in the training field were examined by the Government. One innovation was the introduction in 1960, on a small scale, of first-year apprentice training courses at Government Training Centres which had previously concentrated largely on training the disabled, the ex-servicemen and the unemployed. Of perhaps even greater long-term significance were the steps taken by the Ministry of Education in the late 1950's and early 1960's to expand and reorganise the Nation's further education system. While these educational measures could not in themselves secure a corresponding increase in training opportunities they did provide an important stimulus to the development of day-release as part of a soundly based vocational training system.

Still the central problems remained: how to encourage more employers to establish systematic training; how to improve the quality of training in industry; and how to finance the system? The idea of a training levy raised by the Government on a uniform basis across industry, on the model of that utilised in France, was extensively discussed. At length, however, the Government agreed on a variation of the training levy concept - a levy which would not be the same for all employers, but one which would be

determined industry-by-industry according to the decisions of industry training authorities.

A White Paper setting out the case for action and embodying the Government's proposals was published in December, 1962.[18] Although responsibility for industrial training was still to rest with industry, the White Paper gave stronger recognition to the Government's interest in this field. After extensive discussion with interested groups during the early part of 1963, the Government presented a bill in Parliament embodying the White Paper. The bill became law in March 1964 as the Industrial Training Act.

Thus the general failure of industry and commerce to take action on a large enough scale, the exhortations of pressure groups, the awareness of developments in continental countries as a result of the prolonged negotiations on entry into the Common Market and the general increase in competitiveness of international trade culminated in the 1964 Training Act. Although much progress was made during the years immediately prior to the Act the general state of training was summarised in 1963, by the then Minister of Labour, as follows:

> "We must all realise the extent to which sound economic growth depends upon the efficient use of our most valuable natural asset - manpower. Yet the truth is that far too many employers give little thought to the question of developing the potential of those they employ. Many provide no training at all; many provide training only of a most perfunctory kind; and many forget the important part which further education can - and should - play in the training of young people.
>
> .....few industries have developed any means of ensuring that they

get the number of trained people they need; there is no way of ensuring that all employers play their part; there has been little control of the quality of training; and there have been few attempts to examine in a critical but constructive way methods and customs of training which have been in operation for several generations."

The Industrial Training Act is what is technically known as an enabling measure. It gives the Minister of Labour (now the Secretary of State for Employment and Productivity) powers to establish Industrial Training Boards for "such activities of industry and commerce" as he thinks necessary; and it sets out the duties and functions which these boards are to discharge. It preserves a discreet silence, however, on such matters as the content and length of training, and the standards to be achieved. These are to be determined by each training board in the light of the particular needs and circumstances of its industry, subject to the approval and general oversight of the Minister. Thus the Act establishes machinery and gives powers; it does not determine training policy.

Very broad in scope, the Act applies to all industries, including nationalised industries, but excludes Government. The Act applies to all levels within industry - for management and supervisory training and for the training of technologists and technicians as well as skilled, semi-skilled and "un-skilled" workers. Finally, it applies to persons of all ages including the training, re-training and further education of adults.

The Act has therefore changed the training habits of the nation. Training has been taken out of the realm of the discretion of the individual company or industrial organisation and made a joint Government/Industry responsibility with virtually every industrial and commercial establishment compelled to play its part in giving, or paying for, training.

The organisational vehicles created to fulfil the objectives of the Act are the Industrial Training Boards. The duties and powers of the Boards as defined in the Act are:

(a) to provide or secure the provision of sufficient training facilities for employees in their respective industries;

(b) to make recommendations about the nature, length, standard content, etc., of training for different occupations;

(c) to pay grants to employers providing training of an approved standard;

(d) to impose a levy on employers in their respective industries in order to meet the expenses incurred in accomplishing (a), (b) and (c).

The Boards therefore promote training of desired standard, based upon their training recommendations and using the levy- grant powers provided by the Act. Each individual Board, with the Minister's approval, determines the basis and rate of the levy in its industry and the means of collecting it. While the Act does not compel employers to train their employees, it does compel them to pay the levy and to supply certain information necessary for manpower planning.

The definition of industries and the determination of the membership of Boards are made by the Secretary of State for Employment and Productivity.

The full extent of the growth of the industrial training field will now be illustrated and the roles of the various bodies explained.

4.2. The Present Complex of Resources, Information and Obligations.

As has been shown in the previous section, in recent years the world of industrial training has been changed almost out of recognition. Training Officers and their managements and, with them, the providers of further and higher education, find themselves confronted by a situation entirely different from anything known or experienced before. It is a situation, furthermore, that is now changing rapidly, as the Industrial Training Boards become more numerous and more involved with the practical training needs of their industries.

The Industrial Training Act has provided training with a new sense of purpose, but it has also created a vast new complex of resources, information and obligations which must be understood by all involed. This is illustrated diagrammatically in figure 3, the functions of each major body being commented on in detail below:

4.2.1. The Department of Employment and Productivity (D.E.P)

(Formerly the Ministry of Labour).

The Secretary of State for Employment and Productivity (having taken over from the former Minister of Labour in April, 1968) is responsible to Parliament for the implementation of the Act and for the use of up to £50 million of public money named in the Act as the Government stake in industrial training.

The Secretary of State has extensive powers over the Industry Training Boards. He or she is responsible, on the advice of the interested organisations on both sides of industry, for forming the Boards and also has power to dismiss them if he decides they have proved inadequate. He also makes grants to cover the first-year administrative costs of Industrial Training Boards. The stewardship of these particular grants is safeguarded to a large extent by the fact that initially, the secretary and senior

administrators of each Board are on secondment from the Department of Employment and Productivity itself.

In some cases the secretary of State issues directives on the conditions that must be met before Boards may give grants for particular types of training. He or she has to approve the overall levy and grant policies of Boards, and, at a more detailed level, the Training Branch of the D.E.P. has a constant and almost day-to-day role to play in ensuring compatibility between the policies of the different Boards and between the intention and the implementation of the Act. The D.E.P., like the Department of Education and Science (D.E.S.) and certain other Ministries, also has official Assessors sitting on Training Boards.

In addition to promoting industrial training through the Boards, the Secretary of State and his Department also operate more directly. For example, the D.E.P. pays grants of its own, - through a Training Board, or, in the case of firms not yet coming under a Board, directly to industry - for particular types of training.

The Department also has its Instructor Training Colleges and its Government Training Centres. It promotes the Training Within Industry (T.W.I.) scheme for, mainly, foreman training. It also advances a number of publications.

Much of this Departmental activity pre-dates the Act but has been greatly stimulated by the Act's arrival on the Statute Book. There have been Government Training Centres of a kind, for instance, since 1917, and T.W.I. schemes were brought over from the United States during the last war.

4.2.2. The Central Training Council (C.T.C.)

This body does not have an executive role in the implementation of the Act, but is an important and industrially experienced partner of the D.E.P.

It is a purely advisory body. It advises the Secretary of State on such matters as the scope and the nature of proposed new Training Boards and the types and methods of training in need of encouragement from the centre.

The Council advises the individual Boards on such matters as training methods - particularly in types of training common to most industries and relationships with each other and with sources of further education.

The C.T.C. makes its advice to Boards and to industry known publicly through its publications, including its Memoranda and its reports to the Secretary of State (and thence to Parliament).

Though purely an advisory body, and though lacking the routine day-to-day contact with industry and the Boards of the D.E.P.'s Training Branch, the C.T.C. is an important influence on both the Secretary of State and the individual Boards. In the latter direction the value of its advice often stems from the fact that if is well placed to keep the Boards well informed on each other's progress and experience.

Section 2 of the Act established the Council, stating:

"The Minister shall appoint a Council, to be known as the C.T.C., which shall have the duty of advising him on the exercise of his functions under this Act and on any other matter relating to industrial or commercial training which he may refer to it."

What these general terms of reference have turned out to mean in practice is that the Council has played a particularly big part to date in advising the Secretary of State on the scope and coverage appropriate to the individual Boards though, of course, it will have worked itself out of this particular crucial job within a year.

The C.T.C.'s advice about common types of training, on training methods, and on priorities between types of training is of value to both the D.E.P. and the different Boards. That the Council's advice is held in high regard is evident from the way in which its pronouncements have often had a marked relationship to the Secretary of State's own grant making policy and to the training and levy/grant policies of the individual Boards.

Membership of the C.T.C.

Section 2 of the Act laid down:

"The C.T.C. shall consist of a chairman and:-

(a) 6 employer representatives;

(b) 6 employee representatives;

(c) 2 members from nationalised industries;

(d) not more than six chairmen of Boards; and

(e) 12 other members, of whom six shall be appointed after consultation with the Secretary of State and the Minister of Education.

4.2.3. The Industrial Training Boards.

The powers vested in the Secretary of State for Employment and Productivity may be great, and the advisory role of the C.T.C. may be vitally important, but the essential change brought about by the Act has been the creation of the Training Boards. It is through the Boards that the Act has to be made to work.

The effect the Boards have on industry with their levy/grant policies and their training recommendations and their advice and guidance generally must decide what the Act means in practice. The Boards are the real instruments of the Act.

When deciding the industries to be covered by Boards, the Secretary of State (advised by the C.T.C) showed early preference for industries that either had a key national economic importance or had existing

arrangements relatively easily adaptable to the spirit of the Act. Further Boards have then been established on the fringes of the earlier Boards.

Membership of Boards.

Members are appointees of the Secretary of State (after consultation with the appropriate bodies). The largest groupings on each Board are equal members of employer and employee, the actual numbers varying from Board to Board. Each Board also has a smaller group of educational members from local education authorities, colleges, and sometimes universities. Government Assessors also sit on each Board, these coming from the D.E.P., the D.E.S., the Scottish Education Department and any other Government Department deemed to have a special interest in particular boards.

Coverage and Size of Boards.

During the period since the Act 28 Boards have been established, covering roughly 16 million out of the total working population of 24 million, and very nearly achieving the acts intention of covering all industries and workers outside Government Departments, professional consulting firms, and self-employed people.

The size of Boards varies greatly. At the one extreme Engineering covers more than 3½ million workers, while at the other extreme Boards like Carpet, Civil Air Transport, Man-made Fibres and Water Supply cover 50,000 workers or less.

It is important to note that Boards cover "establishments", not firms, and each establishment deals only with the Board covering the establishment's major interest. But one company, or firm with more than one industrial establishment or unit in more than one industry might find itself dealing with more than one Board. The exception to the one-Board-per-establishment rule is industrial catering where the Hotel and Catering Board has responsibility for industrial canteens etc.

It should also be noted that though the one-Board-per-establishment rule is firm for levy/grant purposes there is important flexibility in training itself in that Boards may use each other's training recommendations. Boards may also form joint committees for particular purposes.

Training Policies.

Policies on training vary greatly between Boards. Some have been able to produce training recommendations quickly; others have found it a longer job. Some have established group training schemes, and some have set up training centres. Some have set up extensive regional structures to get close to the grass roots of their industry; others have found it more feasible or effective to work largely from headquarters. Most Boards have tackled the operator and craft end of the training spectrum first; but some have also made inroads on management training.

Levy/grant policies also vary. The levy is normally expressed as a percentage of the payroll for each establishment, taking into account salaries and fees as well as wages. Some Boards have made an early impact with a relatively high levy, while others have favoured a more gradual approach, either because they wanted to produce training recommendations before levying highly or because they wanted to condition their industries to the rigours of the Act more gradually.

Though grant policies vary - not only in total amounts available from the levy, but also according to whether grants are based on performance rating, specific, per capita, or any other of the possible formulae - a constant thread running through all grant policies is provided by the lead of the grant policy of the D.E.P. itself. Most Boards not only pass on, but also augment, grant for such activities as extra off-the-job training; training officer and instructor training; the industrial training periods of sandwich courses, and re-training. The Secretary of State may also influence Training Boards grant policies by such provisions as a general

directive that grant may not be given for craft training if it is not accompanied by either day release or block release further education (if they are available).

4.2.4. The Department of Education and Science (D.E.S.). The Scottish Education Department and the Provision of Further Education.

As the Secretary of State for Employment and Productivity is to industrial training so, Governmentally, the Secretary of State for Education and Science is to further education, but in a much more permissive and indirect way. (The Scottish Education Department in Scotland).

In short, an essential difference between the organising of industrial training and the organising of further education is that the D.E.P., under the Industrial Training Act, has direct responsibilities for providing industrial training, or seeing that it is provided, throughout the United Kingdom, through the Industry Training Boards and its own Training Branch.

Further education, on the other hand, is administered more indirectly and permissively from the D.E.S. and the Scottish E.D. This is largely because local education authorities, elected locally, have a high degree of autonomy in the provisions made for further education, as for school education. Furthermore, they make these provisions through a system built up and sometimes jealously guarded - by generations of practice and legislation, not through the clean sweep of a single piece of legislation like the Industrial Training Act.

With university courses, too, it is the universities themselves who are almost entirely responsible for the detail of individual courses, University Grants Committee willing.

Education other than at universities is provided through the local education authorities and financed partly by local rates and partly by the

grant paid by the Government to supplement rates generally. This latter factor means the D.E.S. and Scottish E.D. do in fact have an important influence on local education policies, and standard setting, and has responsibilities for the supply and training of teachers.

There is also an important link between D.E.S. and the local education authorities supplied by Regional Advisory Councils.

Nevertheless, it remains true that the initiative in further education is very much in the hands of the local education authorities and the local technical colleges, particularly at the crucial grass roots of the link between industrial training and further education. It is at local level that the majority of the courses that have to be linked and interwoven with industrial training are conceived and introduced.

For example, even before the Industrial Training Act became law a number of technical colleges were already taking an important initiative in providing industrial training at craft and technician level and, very important, doing so through full-time courses of integrated industrial training and further education. This type of arrangement has prospered further now that the method of paying for such courses has been rationalised by the D.E.S. on the basis of 60% of integrated courses being reckoned as industrial training (with the grants policy of the relevant Board usually applying to it) and the other 40% counting and being paid for - as further education.

The big examples of growth in this type of course have been one-year full-time courses of combined education and training to the specification of the first-year craftsmen and technician recommendations of the Engineering Industry Training Board (E.I.T.B.) The effect of these particular E.I.T.B. recommendations is a demonstration of the important point that further education has been affected by the Industrial Training Act, not in a direct legislative way, but through liason with the Boards and industrial training officers.

Training Boards have been able to make their needs known:

(a) through the educationists nominated by the D.E.P. to each Board;

(b) through the Assessors also appointed to each Board by both the D.E.S. and the Scottish E.D.;

(c) through liason between the civil servants and advisers of the D.E.P., the D.E.S. and the Scottish E.D.;

(d) through the co-opting of educationists on the committees of the Boards; and

(e) most of all, through the fact that though Boards cannot specify the courses technical colleges should provide they can specify the further education that must accompany industrial training if it is to earn grant. Thus has industrial training, as the 'customer', had a decisive influence on suppliers of further education.

This combination of influences has made further education sensitive to the needs of industrial training to an extent that has done something to meet the frequent criticism that neither the White Paper on Industrial Training nor the Act itself had much more than the odd platitude for further education. Nevertheless, the problems of liason between industrial training and further education remain acute enough for the C.T.C. to have devoted its Memoranda Nos. 1 and 4 to the subject and to have ended the latter memorandum with the observation that:

"In addition to liason between Boards and examining bodies in drawing up training and education recommendations, there should of course be equally close contacts regionally and locally between Boards staffs, Regional Advisory Councils, local education authorities and the colleges in implementing these recommendations".

Thus the Act and the Boards have made the link between industrial

training and further education more crucial than ever before, and the rapid expansion and development in industrial training have necessitated a complementary and equally rapid expansion in further and higher education.

At the operative and craft end of the training spectrum, for example, the training recommendations of the different Boards are providing an ever-widening range of problems and opportunities for the examining bodies and the technical colleges. At the technologist end there has been a leap forward in undergraduate sandwich courses and in postgraduate work at universities, colleges and polytechnics under the stimulus of the Act, the Boards and the universities and colleges themselves, and management education and training, too, have been stimulated out of all recognition.

For training officers in industry, for industrial managements, and for educationists, all this suddenly increased activity in further and higher education has made knowledge of what is going on in the educational sphere vital.

4.2.5. Non-University Examining Bodies.

With the exception of sandwich course degrees or diplomas, the further and higher education courses demanding some form of integrating or interweaving with industrial training are examined through one of three systems.

The first operating at operative, craft and technician levels, particularly the latter two levels, is the system operated principally by the City and Guilds of London Institute but also by the Regional Examining Boards. The former provides examinations in more than 200 further education schemes and the coming of the Act has greatly increased the pressure on its administration. There has been much interchange of members between the Boards and the City and Guilds advisory committees and there has also been a need for the Institute to review several of its further education schemes

in step with the training recommendations being introduced by the Board.

The second system is the National Certificate and Diploma system which for more than 40 years has provided an education ladder for both technicians and technologists. However, it is unlikely to fulfil the function for the technologists in future with the development of the technical universities and the new polytechnics and with the decision of the Council of Engineering Institutions that, ideally, the technologist of the future should be a university product.

The third main system complementary to industrial training is provided by the courses leading to degrees of the Council for National Academic Awards (C.N.A.A.). The creation of the C.N.A.A. in 1964 was a direct result of the Robbins Report on Higher Education of the previous year. The C.N.A.A. is an autonomous body with powers to award degrees, diplomas, certificates and other academic awards to students who have successfully pursued courses of study approved by the Council at educational establishments other than universities, or who have successfully carried out research work under the supervision of a similar establishment.

4.2.6. Vocational and Professional Bodies.

Industrial training and further and higher education have to be related to the requirements of a wide range of professional and qualifying bodies. These requirements are the individual's passport to recognition in the profession, or trade. They are - or should be - the employer's guarantee that his training scheme are up to date and that employees have the ability required for the competent discharge of their duties - and responsibilities. And, often, the requirements of the professional and qualifying bodies establish the type of training that should underpin first jobs as well as early steps in the trainee's career.

At the same time that these professional and qualifying bodies are coming to be more important than ever to trainee and employer as they are

becoming more numerous and more demanding in their requirements.

4.2.7. Information and Consulting Services.

The Act has made it necessary for industrial and commercial establishments to be better informed than ever before about training methods, techniques and possibilities, creating a need for information givers and training consultants on a scale much greater than anything ever known before.

Thus a great number of information sources and Advisory Bodies are available to help training officers and their managements. Some of these bodies have a general educational interest, while at the other end of the spectrum, other bodies offer help and information in certain specific industries or professions. Similarly, training consultancy has mushroomed. This is partly because there has been a rapid development of interest in training for training's sake, but also, of course, because it now pays firms, through the grant policies of the Boards, to be good at training and to buy in training know-how. Buying in training know-how through consultants can sometimes be more economic, in the circumstances of some firms, than employing the necessary specialists on a permanent basis.

4.2.8. Books, Journals, Films, Correspondence Courses.

Industrial Training is rapidly developing a literature of its own. More and more book publishers are turning to the industrial training field and the number of journals with an industrial training interest is also increasing significantly. In step with this development of a literature, another growing source of information and instruction is film; correspondence courses, also, have a great part to play.

4.2.9. Aids to Training.

Even before the Act a vast new range of training aids - as well as

developments of the longer known equipment - was becoming available. Since the Act came on to the Statute Book the policies of the S.E.P. and of the Boards have made good economic sense of purposeful investment in training aids. The S.S.S. has also given special encouragement to, for example, programmed learning. Under this stimulus the range and quality of aids has increased greatly in the past few years.

It is readily apparent from the foregoing that the field of industrial training is now very much an industry, indeed a growing industry. A thorough analysis of this industry represents a study in its own right, for it would appear on the surface that better organisation and co-ordination of the whole would show a significant benefit in terms of a reduction in duplicated and unnecessary effort. Certainly there seems an obvious case for a central body to review and rationalise the education and training systems as a whole to optimise their conjoint performance. Consistent with British standard practice, the implementation and development of the training industry was not preceded by long and detailed intellectual effort designed to produce the grand theory and it has been attached to a fragmented and confusing educational structure. Rationalisation of the whole would surely reap enormous benefits.

CHAPTER 5. CRITICISMS OF THE PRESENT FRAMEWORK.

Since the Industrial Training Act 1964 became law, criticism of the British Industrial training system has become a fashionable pastime. As the Secretary of State for Employment and Productivity stated in April this year[20]:

"The catalogue of charges is seemingly endless – the Training Boards bureaucracy, extravagance, inflexibility, poor communications, training for training's sake, disregard for the small company, insufficient attention to manpower planning etc."

Certainly the volume of criticism suggesting that the means chosen to achieve the aims of the Act are unsatisfactory is enormous and far-ranging. An attempt will be made to summarise these criticisms:-

5.1. Implementation.

The job of implementing the Act has proven to be a difficult and lengthy one. Some of the strongest criticism to be levelled at the new system has centred around what the critics have described as the slow and inefficient manner in which the Boards have become operational. Many of these criticisms were registered in testimony before the 1967 House of Commons Estimates Committee. The Committee concluded in its report that:

"......many Industrial Training Boards have a proliferation of committees and sub-committees and an unnecessary amount of central bureaucratic organisation has been set up; some chairmen were not spending enough time with their Boards to exercise a really effective control over their activities; most important, Boards were not paying enough attention to first principles, and in particular were not asking themselves what the purpose of training was[21]."

Flanigan[22] feels the following criticisms are felt generally in industry:

1. There are too many Boards duplicating highly expensive staffs, premises and paperwork.

2. The utilisation of expensive manpower looks to be very unsound. The large numbers of training staff recruited from industry spending most of their time on the road visiting firms in a superficial way produces the feeling that they would be better and more usefully employed as trainers in firms.

3. Too much paper is being generated and too many new rituals are being produced to replace the old ones. There is too much desire to tick names off a list as having conformed and not enough desire to make progress in depth on a narrower front.

4. When faced with the task of improving national training standards there is a conflict of alternatives:

(a) to go for the obvious, easy areas where a rapid and spectacular impact can be made - a political situation;

(b) to go for the difficult areas, on a narrower front, where there is a serious need and leave the easy areas until later - a training situation.

Boards who have decided on course (a) have developed large organisations of a bureaucratic nature, to cover the extensive field which will not necessarily be appropriate for (b) when they begin to tackle it.

A survey by the Confederation of British Industry,[23] while strongly endorsing the principles and intentions of the Act, made serious reservations about certain features of its operation. It considered that:

a) More headway should have been made in tackling some of the fundamental issues;

b) There was a great danger of training for trainings sake in pursuit of grant;

c) To be successful the operation of the Act must command the respect and support of both employers and employees. To achieve this, the systems of administration and procedures must not be unduly complex or be, or appear to be, a waste of money and resources. Above all, realism must pervade the work of the Boards in all its aspects and they must not become divorced from current thinking in their industries or remote from the practicalities of the training situation.

d) The Act should be leading to a more radical approach to some of our training problems with a view to the reform and modernisation of the system.

In conclusion the survey states that:

"Much time, money and resources have been devoted to the purposes of the Act and a considerable network of administration and control built up. The immediate effect has been to create a great deal of activity, which must not be confused with action, and a new bureaucracy in industrial training is fast being established which will soon have to justify itself by concrete results. Although there have been some solid achievements by the boards towards improving the structure and pattern of industrial training in their industries, the real test will be whether their schemes and recommendations lend themselves to practical implementation by firms as a whole and result in the increased efficiency and flexibility of their workpeople."

While it is perhaps still too early to fully assess the success or failure of the 1964 Act, some of these criticisms are valid and certainly there would seem to have been a failure to date to achieve any significant improvement in industry. There is obvious evidence of some progress being made in increasing the supply of skilled manpower,[24] but surely the real criterion for measuring the success of the Act lies in assessing its impact in depth in industry. There is a complete lack of evidence in the

literature of any significant depth studies "before and after" the Act having been undertaken to indicate whether or not any solid achievements have really been made in changing attitudes and improving efficiency.

5.2 Training Advisory Services or Inspectorates.

The second objective of the Act is to secure an improvement in quality and efficiency of industrial training. The achievement of this objective must depend in part on the work of the Boards in establishing good training standards and the creation of an effective training inspectorate or advisory service to assist firms in improving their training staff, facilities and curricula. It also depends on the provision of technical training assistance to small and specialised firms which heretofore have had difficulty in developing adequate training arrangements.

This issue will decide the ultimate success of the system, and yet it would appear that the Boards have made little headway in this area, except perhaps with small companies.

One of the major problems the Boards have experienced in attempting to fulfil this function is the difficulty of finding sufficient numbers of suitably trained people. One of the most frequent grievances heard in industry concerns the advice (or lack or it) given by field staff. The Boards seem to have failed to grasp the importance of this fundamental aspect of their operations and have given it insufficient priority.

Boydell[25] paints a particularly dismal picture:

"Most field training staff have been recruited, not from training specialists, but from people with experience in management from the respective industries.

Immediately one might wonder to what extent they are committed to training, since they are coming from the ranks of those whose antipathy towards it have resulted in the need for the Boards to be set up.

Indeed, in my own experience I have met recently appointed training advisers who admit that they are not at all keen on training, but who see a stint with a Board as a useful stepping stone to higher things or as a comfortable sinecure.

Again, there is little training available to equip them for their new role, the only courses run on any scale being six-week "crash" introductory courses. How can this enable the advisor to assist company training officers who may have been in the job much longer? Indeed, one can imagine the reaction of the industrial training officer being advised - and inspected - by someone who was on the same introductory course as himself but who, during that course, displayed less commitment and ability than he."

This is a very real problem, but the Boards themselves have accentuated the issue by failing to define the role of their field staff. Should these individuals provide technical assistance and advice to firms or should their role be merely one of inspection for grant purposes only? It appears that most Boards are attempting to find a middle ground - analogous to the role played by Her Magesty's School Inspectors.[26]

The declared philosophy of the C.I.T.B. in this area is worthy of discussion:-

"We see the Board functioning as advisers and co-ordinators helping to spread ideas and methods which will be of real benefit. As a result we want the main job of our field staff to be helping and advising although we realise that they will have to do some examining of training standards with individual firms. In line with this it is our intention not to insist on inspection as a pre-condition of grant but rather to tell the management to sign a certificate to the effect that conditions set forth in the Grant Scheme have been met. We will of course reserve the right to inspect and to call for independent certification if need be."[27]

Inspection must be a primary role. The Act was necessary in part due

to the inability of a significant proportion of industrial management to fully utilise existing resources and their failure to recognise their inability. Independent inspection of company practice must therefore be fundamental to raising the level of training generally, coupled with informed, constructive advice on ways and means of improving particular company needs.

Unless urgent attention is given to remedying the Boards neglect of this area of their activities then their achievements to date will be relatively meaningless in terms of meeting the aims of the Industrial Training Act.

5.3. Levy/Grant System.

The third objective of the Industrial Training Act is to apportion the cost of training more fairly between firms, the levy-grant mechanism being the means to achieve this end. A substantial amount of criticism levelled at the Act centres upon the ineffectiveness of the various Training Board levy-grant systems.

After hearing considerable testimony, the House of Commons Estimates Committee concluded that the levy-grant system as presently operated was in fact "impeding the Boards from proper consideration of future training policy and is not serving as a proper incentive for firms to improve their training."[28]

"It is unsatisfactory that Industrial Training Boards should employ such a disproportionate amount of their staff and time on detailed, financial consideration imposed upon them by a complicated system of levy-grant. It should be the policy of a new Board to think first and to act afterwards, to avoid establishing a bureaucracy to administer a system which may be overtaken by events and to concentrate on long-term planning for future needs."[29]

The charge of unfairness of the levy-grant system stems in part from

the fact that inevitably different organisations within the same industry have different training needs. The composition of the work force, the rate of expansion or contraction and the rate of labour turnover all affect the size of the training effort required.

Most levy-grant schemes appear to be designed to spread the cost evenly. Often, however, this is most unfair. Why should a company with few training needs subsidise its inefficient competitors? Yet this is the effect of those systems - the majority - which raise levy on a pro-rata basis and award grant according to the training actually carried out. The C.B.I. review comments:-

"The levy and grant mechanism must be applied with considerable flexibility so that the Boards' schemes are properly related to the practical circumstances of their industries by taking full account of the particular problems and requirements of certain sectors which demand special training arrangements and correspondingly special treatment in levy or grant. They should also be able to cater for the differing needs and situations of different firms according to such factors as their size, type of operation and kind of work force. Boards should therefore aim to strike a balance in their levy and grant arrangements between what they conceive to be the proper interests of their industries as a whole and the training requirements of individual firms which vary considerably in scale and kind."

Levy-grant has come to be seen as a crude weapon with a refined function to perform. Analysing the unique training needs of every individual firm demands an instrument of great precision. By comparison, grant policy, determined by an average of the training needs of all firms in the industry,[30] is blunt and, of its very nature must be so.

While there has been considerable criticism of the levy-grant mechanism there does seem to be general acceptance of the system in principle.

5.4 Training Leadership.

Considerable debate has revolved on the crucial issue: "Where should the leadership in industrial training come from?"[25] The Training Boards are semi-autonomous institutions which have been given certain statutory responsibilities by Parliament. Clearly, the D.E.P. wishes to see the Boards accepted as the sole leadership bodies. And, since the Department has statutory control over the Boards it is theoretically the central directing force in British industrial training.

Still, two points of view have arisen: on the one hand there are those who argue that the Government's power is so diluted by the decentralised and autonomous organisational framework that it may prove ineffective in accomplishing its leadership role. Another group of critics also argues that there is a leadership gap, but their suggested solution is quite different. They recognise the need for greater centralised direction, but do not want this to be entrusted to the D.E.P. which they feel has a vested interest. Rather, they would like to see the C.I.T. expanded into a "National training executive".[31] These critics feel that all bodies existing to date have a limited interest in certain special and restricted aspects of the total field; and that none has the overall view.

The C.B.I. review[23] endorsed this view to some extent. It did not feel that the powers of the C.I.T. should be strengthened, but that its role should be a more positive one entailing fuller, bolder and more effective use of its existing powers particularly with a view to evolving a grand strategy on training comprising principles and prescription as guidance for the training boards.

The 1967 Report of the Robbins Committee recognised the growing problem of providing for greater centralisation of leadership in industrial

training. However, they deemed it as being too early to recommend radical changes and suggested instead that a thorough study of the role and organisation of the C.T.C. be made with a view to making recommendations for change in 1970.

A Review Committee was duly appointed on 27th February, 1969, and reported in April, 1970[32]. The conclusion of this review was that while the concept of an executive central authority had attractive features the case against it was decisive and therefore that the advisory character of the C.T.C. should be retained. However, they agreed that more initiative and influence from the centre was needed and proposed changes to allow the Council to realise its potential in this respect. The proposals include a major extension of the activities of the D.E.P. to assist the C.T.C. but nevertheless, if they are accepted, they will undoubtedly go a long way toward providing the training leadership and co-ordination necessary.

5.5 Education and Training.[33]

An issue which has received wide debate since the passing of the 1964 Act is the relative positions of industrial training on the one hand, and the associated further education on the other, these positions not being very clearly spelled out in the Act itself.

Through the debate a clear picture has emerged of the responsibilities of each area, viz., that further education is divisible into broad-based skilled training and general education, while industrial training is concerned solely with skilled training. Thus as far as industry is concerned it naturally wants to see skilled training linked as closely as possible with the requirements of the employee's employment, but it must recognise that it is in the best interests of the trainee, and ultimately of industry itself, if his programme also includes educational provision.

These interests are spelled out by the C.T.C. as being broader than meeting the requirements of specific jobs.[34] They include "the inculcation of a broad understanding of relevant science and technology so that the trainee appreciates the problems of those working on associated occupations and is better equipped to adjust to the changes in the nature of his work." They also include the widening of the trainee's understanding of the society in which he lives and the development of his personality, i.e. the general education mentioned earlier.

The activity of the Boards in the further education sphere led to them taking the initiative, courses in some cases being devised merely to correspond to training schemes and training centres being established separate from further education. Too little attention has been given from the outset to bringing about a workable integration between education on the one hand and training on the other.

In the review of the C.T.C. previously mentioned considerable time was given to this issue and a proposal made that a specialist committee should be set up which could advise on the integration of the two systems.

5.6 Implications for the Future.

This section opened with an extract from a recent written comment by the Secretary of State concerning criticism of the industrial training system. She continued:

> "The Catalogue of charges is also seemingly damaging. In fact, it is essentially encouraging, for it means that at last industrial training is being taken seriously in Britain. This is an important step forward.
>
> The argument is no longer over the need for industrial training - and re-training - but about the method by which it is provided. In other words, it is no longer about the justification for the Industrial Training Act but its operation."

There has been a healthy change since the Act in the industrial training climate but some more basic measure of the efficiency of the new and costly system must be established. A more analytical approach must be adopted and as possible a rigorous benefit - cost analysis.

The proposals emanating from the Review of the C.T.C., if applied should undoubtedly lead to significant improvements in the present system. However, there is a need for continuous review in depth of the achievements being made through time at the grassroots of industry, since certainly the rate of real achievement to date has not been great. Unless the system undergoes considerable modification and change the Act will not be a powerful enough instrument for bringing about the changes in past attitudes and traditional practices that are essential if we are to have a modern and efficient training system.

CHAPTER 6. THE INVOLVEMENT OF INDUSTRIAL TRAINING BOARDS.

6.1. The Basis for the Study.

The previous chapters of this dissertation have emphasised the need for training, indicated the basic means of organising sound training within any company and described the national training framework which has emerged as a result of the Industrial Training Act. The aim of the author was to assess the current state of training in industry and to determine whether the Act has had, or is likely to have, any impact upon industrial training.

Two methods of approach to the examination of industrial training in practice presented themselves, viz.:

1) To examine the training practices of a number of firms falling under the ambit of a particular Board, before and after the appointment of that Board.

The examination of each company in this type of study would not be a look in depth, since time would not allow it, and in the author's opinion this is a serious shortcoming. The danger exists that no real insight is given into the true value being obtained from the training programmes undertaken and therefore no valid assessment made of whether or not the training is serving any useful purpose. The great difficulty is not one of receiving honest answers to questions but of having sufficient knowledge about the affairs of a company to ask the right questions to penetrate sufficiently to obtain accurate information.

2) To take a particular Company, examine its training practices historically for Board influence, and then look in detail at its existing policies, assess their value in terms of meeting the needs of the individual and the company, and endeavour to establish the influence the Board has had or is likely to have upon that practice.

The author considered that this second 'depth' approach, although narrow in terms of the total operation of any Board, allowed a more positive

assessment to be made of both aspects of the study, through intimate knowledge of the company. It was appreciated at the outset that generalisations would not be possible from a study of this type, but it is the author's contention that only 'depth' studies can reveal the true situation and that through a number of such studies a body of realistic knowledge will emerge of benefit to all parties involved.

6.2. The 'Training Oriented' Company Problem.

It must be accepted that there is an obvious area of industry where training practice has been influenced by the Boards, i.e. companies which did little or no training prior to the Act, particularly small companies. Further, because little or no training existed the extent of Board impact can be readily assessed and the companies concerned readily recognise the influence of the Boards.

With the medium and larger-sized companies who are training oriented and have therefore been training for some years, the problem is far greater. It can be very difficult to see shifts in training emphasis. Trying to assess the value being obtained from training through time or trying to attach the responsibility for change to any particular cause therefore presents enormous problems. This is undoubtedly one of the major problems facing analysts trying to assess the impact and value of the Boards in future. They will have the added problem of the Training Officer in industry being naturally very reluctant to recognise that a Board might have had any beneficial effect in his company. The result is that by nature opinions tend to be subjective.

The training-oriented companies need examining however, especially in such industries as the chemical industry, where they employ the majority of the work force. The depth study is essential to reveal the true picture of training in such companies. This study has been undertaken in a medium-sized training-oriented company.

CHAPTER 7: THE CHEMICAL AND ALLIED PRODUCTS INDUSTRY TRAINING BOARD (CAP-ITB)[35]

The particular company examined in this study falls under the ambit of the CAP-ITB and in this chapter the development of this Board will be discussed. The Board was the twenty-first to be established and therefore had considerable experience to draw on from other Boards during its early years. Further, trade associations existed, in particular the Chemical Industries Association, which had knowledge concerning a significant proportion of the industrial sector falling under the CAP-ITB. Thus the 'settling-in' stage of the board has been relatively short and a review at this stage will reveal the nature of the Board's role.

The Board[36] was appointed by the Secretary of State for Employment and Productivity on 9th October, 1967. The industries which it covers are set out in the relevant industrial training order.[37] Analyses of employers and of employees by type of job and sections of indstry are shown in appendices 1, 2 and 3 respectively. The Board covers approximately 3,500 establishments with 450,000 employees.

The membership of the Board consists of a Chairman with eight employers', eight employees and five educational representatives.

7.1. The Basic Data.

Before any Board can effectively perform its work it is necessary for a Register of Establishments within its scope to be compiled. By mid-1968 this task was well in hand.

The major basic task, which most Boards have undertaken, is to make a forward survey of manpower requirements in the different categories of employees in the industry. A sample survey through to 1975, and mounted jointly with the Chemical Industries Association, but embracing also the Allied Industries, is well advanced and a report should be issued during 1970.

7.2. Overall Philosophy of the Board.

Early in its life[38] the Board informed companies of the philosophy it intended to adopt in developing its activities, as follows:

(1) Training, it considered, was making the best use of our human resources, and it was with this conception in mind that the Grant Scheme would be designed;

(2) The Board stressed that although it was set up by Statute, the last thing it wanted to be was a bureaucratic machine external to the industry. "We are, indeed, part of the industry and we are very conscious of the fact that we are here to give a service."

(3) Committees of the Board would have a high proportion of members 'who spend their working lives immersed in the problems of industry'. The aim in recruiting permanent staff was to find men with a business background, who looked at training in a practical way.

(4) In working out its plans, the Board would not confine itself to consultation with the industry but try to bring them into the act as policy makers in the various committees.

(5) The Board 'image' was that of advisers and co-ordinators helping to spread ideas and methods which would be of real benefit.

(6) Following from (5) "it will be our constant endeavour to work on business lines with training as the means and not the end - the end being optimisation of the manpower resources of the industry. We shall also ensure that need is taken as the basic criterion in deciding whether or not and how much training is required."

7.3. The Structure of the Board and its Committees and Staff Organisation.

The Board is made up of two parts, one part-time and the other full-time

with the Chairman as the link man. On the part-time side there are the members of the Board and its Committees who come from all sides of the industry, from trade unions and from the educational field.

The full-time staff, approximately eighty in number, are located at headquarters and in the field and link up with the various Committees mainly through a Senior Training Officer: one Senior Training Officer working with each Training Sub-Committee and its associated working parties and study groups. Senior Training Officers attend meetings of these bodies to give advice and guidance. They also provide the liason between members and the Board's field staff (Training Advisers) who, in turn, are in close and constant contact in the field with the industries. Thus, through the Committee structure and through the permanent staff, there is a "two-way" communication between industry and the Board.

The Board initially set up three Advisory Committees dealing with Training and Research, Levy and Grants and Establishment and Finance. Each member of the Board was a member of one of the three Committees, which met under the Chairmanship of the Board Chairman. In addition, the Training and Research Committee set up four Training Sub-Committees to carry out detailed work on an occupational basis as follows:

(1) Management and Supervision.

(2) Engineers, Scientists, Technologists and Technicians.

(3) Commercial, Clerical and Management Services.

(4) Industrial (embracing operators, craftsmen and ancillary workers).

With the exception of (3) the Sub-Committees met under the Chairmanship of a Board member. Sub-Committees embraced also non-Board members. This procedure was further extended as the Sub-Committees set up working parties and study groups to consider particular aspects of training.

This basic structure served the Board to mid-1970, the working parties

and study groups varying as specific tasks were completed. Figures 4,5 and 6 show the structure and thereby the work emphasis through time, whilst figure 7 shows the structural change which occurred in Mid-1970, the Training Sub-Committees being combined to form one Liaison Sub-Committee.

7.4. Training recommendations.

Figure 8 illustrates the steps leading to the publication of a training recommendation, the means by which the Board intends to effect control over training standards in industry. Normally recommendations are initiated by a Board Working Party comprising people closely involved in the industry with the subject of the recommendation. There is also close liaison with any other Training Board who may have carried out work in the particular field, and regard is also paid to any relevant publications by the C.T.C.

Following vetting in the relevant Training Sub-Committee (now the Liaison Sub-Committee) the recommendation is circulated in draft form for comment by selected companies and appropriate Trade Associations and Professional Bodies, and open discussion meetings are also arranged. The comments and advice received are then considered by the Working Party before the final document is submitted, through the Liaison Committee and Training and Research Committee, for Board agreement. Finally the advisers of the Secretary of State have the opportunity for comment. Recommendations therefore represent the considered view of the Board, after consulting all the parties felt to have an interest, as to the best way of handling a given type of training.

Several training recommendations have been published and a considerable number are being prepared, appendix 6 giving details of progress in this area. The Board does not insist that in a given year the whole of the recommendation must be implemented to earn the grant incentive, generally a phasing-in

period of two years being utilised, with certain minimum working to be achieved in the first year or so.

Naturally recommendations will need revision from time to time in the light of new thinking or technological change, but in general a recommendation once published will stand for two years or the standard for the relevant race.

The Board have stated that there will be flexibility in deciding whether grant is payable to particular firms, for the reception that in many cases there will be a variety of ways in which a recommendation may be implemented.

The great reliance in this case by the Board on the incentive needs to be used to get the Training Recommendations produced by the Board's Working Parties and Sub-Committees implemented in the industries covered by the Board. Thus the nature and amount of incentive could change from year to year in the Annual Grant Scheme depending on progress in the implementation of the Recommendations.

7.5. The Levy-Grant Scheme.

It was decided immediately that the levy should be calculated on a percentage of the total remuneration paid to employees within each establishment, with the following considerations:

(a) That the levy was kept as low as possible consistent with the training plans considered to be necessary;

(b) that the collection of levy was placed in relation to payment of grant in such a manner as to minimise the balance of funds held by the Board at any given time;

(c) that administration costs were kept at a minimum consistent with the service the industry required.

The actual percentages applied to date are low in comparison with those applied by other Boards.

levy and grant was viewed immediately as a means to stimulate the spread of good industrial training and not just as a means of sharing training costs between firms. Thus it was not part of the Board's philosophy to attempt to recover in levy the whole training costs of the industries it covered and then to redistribute them in the form of grants. Instead the Board adopted the policy of 'pitching the levy at a level sufficiently high to create the necessary impact on industrial training, whilst not too high to alienate firms in the industry'. This policy led to a much lower levy than that applicable to the recovery of total training costs.

In similar vein, although the grants scheme introduced was wide ranging the Board did not set out to reimburse total costs of all forms of training carried on within its industries. The Board stressed that:

(1) Grant policy would be determined against the need for training incentives and accordingly that it would look each year not only at new incentives required, but also at those existing grants had served their purpose and could therefore be reduced or eliminated with appropriate time phasing to minimise disruption.

(2) Except for very high priority items, reimbursement of identifiable key-costs, where the system of grant-aiding applied would be on considerably less than a 100% basis.

(3) The Annual Grants scheme would be a gradually changing system shaped each year to influence training by suitable adjustment of the grant incentive offered in the directions of the priorities revealed.

(4) Grant policy would be viewed against the need to avoid escalation of the levy and the longer term aim of the Board to see it reduced.

In the longer term the Board stated:[40]

"In the context that the objective of levy and grant is to get good training quickly into operation in the industries we serve, it is our view that levy may marginally increase in the immediate future years in accordance with priorities the industries recommend through the medium of Working Parties and Committees. However, in the longer haul, it should be possible to reduce it as firms within our industries universally accept that good training has a pay-off, until the levy falls to what is necessary to sustain the cost of an advisory service doing studies in depth, and research into training problems, on an industry basis."

The Board gave immediate exemption from levy to small firms and in addition gave serious consideration to differential levy according to industry. However, it concluded that no really feasible approach to differential levies existed without an undesirably high degree of complication.

A recent major change in the levy-grant policy concerns the ceiling[41] on a ratio of grant earned to levy paid. In original grant schemes the ratio was set at three times the levy paid. The new ruling limits the grant to a maximum of 110% of the levy paid for firms with 200 or more employees. The Board's reasoning was as follows:-

"While the previous upper limit has been reached in only a relatively few instances, the analyses of 1968/69 Grants reveal that a number of firms have exceeded 100% recovery. As training effort increases, the number in the latter category will increase and calculations show that this trend could exert strong upward pressures on the 1970/71 levy if the present ratio limits are not reduced in respect of 1969/70 Claims whilst maintaining a suitable incentive to those firms who lose well trained staff to others."

7.6. The Role of Field Staff.

The Field Training Advisers, currently seventeen in strength, are

divided between Northern and Southern Regional Training Managers. Their role, as stated by the Board,[38] "includes the provision of a training advisory services to all firms, making known to firms the Board's training policies, advice on the form of training records, and advice on the current Grant Scheme. Apart from keeping contact with firms in their area, the Training Advisers will also liase with area representatives and committees of the Trade Associations, Educational Bodies and Area Productivity Associations."

It is important to note that no mention is made of the Training Advisers having an inspection role to validate Grant claims. The Board have stated their policy in this regard, as discussed in section 5.2, the relevant statement being:-

> "We see the Board functioning as advisers and co-ordinators helping to spread ideas and methods which will be of real benefit. As a result we want the main job of our field staff to be helping and advising although we realise that they will have to do some examining of training standards with individual firms. In line with this it is our intention not to insist on inspection as a pre-condition of grant but rather to ask management to sign a certificate to the effect that conditions set forth in the Grant Scheme have been met."

7.7.Research.

A Research Sub-Committee has been formed by the Board to screen and agree applications for grant-aiding training research. Initially research will be concerned with assessments of the effectiveness of training in given areas, the Board having accepted the advice of the Committee that the question of assessing the impact of the policies of the Board as a whole could not be effectively undertaken in less than a period of three years of their inception. The Board intends to mount a survey through the medium of an independent party during the second half of 1971, time being devoted during 1970 to exploring the best method of conducting the survey.

7.8.Board Impact.

The Board's activities to date can be summarised as follows:

(1) They have established a training organisation, full-time and part-time, involving all sectors of the industry they embrace, out of which are emerging general training standards for the industry as a whole.

(2) They have endeavoured to raise the level of training consciousness in the industry through their publications and visits of their field staff to firms.

(3) They have made significant progress in initiating training in smaller companies where previously no training existed.

(4) They have established a levy-grant scheme which initially spread grant liberally but which is gradually being moulded to conform to the standards set by the Board and in accordance with their assessment of the future trained manpower needs of the industry as a whole.

(5) Through field staff and the requisite returns from industry to meet levy-grant requirements the Board is accumulating knowledge about the current training activities in the industry.

If the Board is to be effective and achieve the aims of the Act it will have to penetrate industry in a significant way to assess the real value being obtained from training, identify areas of neglect and act as a stimulant to good management in the industry. The activities of the Board to date provide an essential background will will facilitate this ingress into the industry, but it is difficult to envisage the Board as it is presently conceived making real impact in large companies where the majority of the labour force is employed. The present field structure/role of the Board

is certainly unlikely to provide more than a token insight into the affairs of specific companies, and the Board have given no indication to date that this situation is likely to change.

CHAPTER 8: THE STUDY UNDERTAKEN

8.1. The Nature of the Company.

Facilities were provided for the study by the Imperial Smelting Corporation at their main site at Avonmouth, near Bristol. Imperial Smelting is the principal member of R.T.Z.(Britain) Ltd., which co-ordinates the varied interests in this country of its parent company, the international mining and industrial organisation, the Rio Tinto Zinc Corporation Ltd. All operations at Avonmouth are managed by I.S.C.(M.S.C.) Ltd., and though the company benefits from R.T.Z's role as co-ordinator, it exercises a major degree of autonomy in the organisation and conduct of its own activities. The organisation structure of the senior levels of the organisation at the time of the study is shown in figure 9. Imperial Smelting is the largest of a number of medium-sized chemical companies located on the Avonmouth Industrial Site, employing approximately 1,700 personnel.

The product range at Avonmouth is extremely diverse. The major metallurgical product is zinc (the company provides approximately 56% of the national supply of zinc), but in addition lead-bullion, beryllium - copper alloy and cadmium are produced. The range of chemical products includes sulphuric acid (approximately 9% of the country's production), phosphoric acid, hydro-fluoric acid and fluorine compounds such as the 'Isceon' range of refrigerants and aerosol propellants.

8.2. Training in Chemical Companies.

Prior to discussing the training function in the company several points need to be made concerning training in general in chemical companies.[42]

(1) As a science-based industry, training has long been recognised as an essential part of company activities. Further, since the industry is constantly changing due to technological change the

pattern of training must change in order to keep up to date, making constant re-analysis of training needs essential.

The Imperial Smelting Co. have as recently as 1968 commissioned the worlds largest zinc/lead Blast furnace at Avonmouth, a process the company pioneered.

(2)Because of the nature of the industry the number of graduates, scientists and technical supporting staff employed are relatively more important than in many other industries. The provision of such staff and its proper integration and maximum utilisation in the industry presents a constant education and training problem due to the need to provide the requisite amount of education and training at the right level and at the correct time.

(3)There are areas of each company's activities which are unique to that particular company and for which training must therefore be tailor-made.

It is with these points in mind that the particular training activities of Imperial Smelting must be considered.

8.3. The History of Training in the Company.

Training as a function in the company's activities existed, pre-war, in the form of craft apprenticeships under the engineering department. In 1940 personnel was established as a separate function and through this department training was extended, though obviously on a small scale initially with personnel and other employees devoting part of their time to the training function.

The early/mid - 1940's saw the introduction of management training down to first-line supervisors and the establishment of commercial training for juniors, one member of the personnel department being devoted full-time to administering and organising training at lower levels. During the same

period training schemes for science-based employees developed formally, and plant expansion in keeping with the war effort prompted a need for operator training. The first training adviser to the company was appointed in 1945.

From these initial steps programmes emerged to serve all aspects of the company's needs in terms of managers, supervisors, technologists, technicians, craftsmen, operators and commercial personnel, this enlarged level of activity developing during the early 1950's.

The extent of the training in general and in particular categories of employees tended to be controlled by the chief executive of the company, and since naturally there were varying degrees of commitment toward training within the chief executives, the numbers responsible for and under training varied through the years. Significant shifts in training emphasis occoured, foreman's courses being for example particularly stressed during the early 1950's and then being shelved in favour of shop stewards courses.

The evidence therefore indicates that to a significant extent training was regarded as an activity which would be shelved particularly in times of economic difficulty, not as something which needed to be continuous to be of real and lasting value. However, even during 'lean' periods there always existed a full-time training officer with apprentice and junior training and some management training.

The company training records reveal the extent and to some degree the pattern of training through the years, and substantiate the foregoing remarks. Appendices 5, 6 and 7 show statistics over the years for management courses and the intake for junior courses and chemical plant operator apprenticeships respectively.

From the mid-1960's the training activities extended in association with considerable company growth, and 1967 saw the establishment of a

formal education and training department under a senior personnel officer responsible to the Manager of the Personnel Services Department. The philosophy behind the establishment of this department was that training had extended to such an extent that centralisation was desirable because of geographical problems of co-ordinating and controlling the training efforts throughout the company. The structure of the department, together with the approximate spread of responsibility, is shown in figure 10.

The training department currently serves the company through organising and administering a wide range of in-company programmes, recruiting and progressing all juniors through their relevant courses, administering a graduate training scheme, providing an advisory/clerical service for external courses, and acting as the link with educational bodies and the CAP-ITB. The range of courses and junior programmes is prolific, appendices 8 and 9 showing statistics of the junior trainee position at 1st.March, 1970 and an in-company programme for parts of 1969/70 respectively.

A separate management development scheme has recently been initiated in the company, this scheme being independent of the education and training department.

The training department budget through recent years reflects the growth of the activity in the company, expenditure having quadrupled since 1966. This budget does not include the salaries or wages of employees attending courses.

8.4. The Industrial Training Act/CAP-ITB Influence.

As has been shown training practice in this company existed in depth well before the passing of the Act in 1964. The company was made conscious of the Act and its manifestation in the form of Training Boards at a very

early date since it almost fell under the Engineering Industry Training Board in 1964. However, it correctly avoided that "fate" and duly fell under the CAP-ITB in 1967. It would be extremely difficult to detect any change in company practice as a result of the inception of the Board. The volume of training has increased, but this can be directly attributable to a company need. Further the emergence of the CAP-ITB necessitated a central record-keeping function, but it was logical that this would occur with the company need to centralise training to some degree for co-ordination and control purposes.

On the question of the quality of training the extent of the company's practice and the level of that practice have proved entirely adequate in meeting CAP-ITB requirements in terms of attracting grant, claims having been approved virtually unchanged. Further the training recommendations published by the Board to date are generally simply a mirror of practice in the company in that particular area, since the company has been one of the leaders in the training field and has therefore developed considerable expertise in the discipline. In fact to some degree visits by CAP-ITB staff to date have been to seek advice on particular aspects of training.

These facts being so it is difficult to envisage how the Board can have any impact upon the company's training practice and inevitably the question arises as to whether or not the Board needs to have any impact, other than to subsidise the company's training activities to some extent through grant in excess of levy paid. Certainly the company has in the past been a source of skilled labour for the industry in the area and should be on the receiving end of the equitability balancing act. It is important that grant in excess of levy is seen as a 'bonus' - it cannot by any yardstick be seen as a stimulant, since total training costs exceed grant several times. Further, with the recent introduction of a maximum

grant of 110% of the levy paid the Board activities must cost the company financially, due to the demands on company employees on Board business.

Accepting that a significant number of chemical companies have had to be similarly training conscious over the years, especially medium and large-size companies, the major employers, the role of a Training Board in the industry must be to some extent different. These companies have been training and have therefore developed experience in training over a number of years. Yet the aims of the Industrial Training Act are as applicable to this industry as they are to any other. The answer must lie in a different interpretation of the Act - i.e. our baseline is higher - we have a great deal of training, some of which is very sophisticated, how can we better organise this training to achieve the aims of the Act? Unless the Board penetrates the existing practice of these companies it can achieve little over a large proportion of the industry. Currently they are contributing no added value to training in Imperial Smelting and similar companies.

3.5. The Examination of Present Practice and Attitudes.

A considerable amount of the training which the company conducts and supports is necessary, justifiable and of value. This examination was prompted to discover:

(a) the degree of penetration of the CAP-ITB;

(b) how basically sound the company training activity was in terms of the criteria discussed in Chapter 3; and

(c) the general employee attitude toward training and any significant changes which might improve the value being currently obtained from the training activity.

In order to achieve these aims the author interviewed 112 personnel, comprising a sample of eight employee categories across ten departments of the company. The author had no knowledge of the company or its employees

prior to the study and the selection of the interviewees was random from the company records.

The numbers of employees interviewed representated a significant proportion of the total number in each of the respective categories and therefore in the area of the company embraced, as follows:-

EMPLOYEE CATEGORY	NUMBER INTERVIEWED	% INTERVIEWED IN CATEGORY
Area Manager	9	80%
Superintendent	17	40%
Assistant Superintendent	11	40%
Engineer	8	35%
Day Supervisor or foreman	13	35%
Shift Supervisor or foreman	20	25%
Engineering foreman	13	35%
Other senior staff	21	35%
TOTAL	112	35%

The interviews were based upon two questionnaires, one to area managers and superintendents, the second to all other categories, the questionnaires being shown as appendices 10 and 11. The nature of the interviews was however discussive, with the author making notes during and immediately following each interview, the latter varying in time but generally lasting from 30 minutes to 45 minutes. The interviews were conducted at or near the interviewees place of work, in private and with an assurance of anonymity to lower category interviewees from the author. The questions asked were slanted toward in-company courses generally, but comments were requested concerning all the training activities of the company. The vast majority of the interviewees were very communicative and the number about which the author had any doubt concerning the honesty of opinions expressed was so small that the results of the examination would be unaffected.

CHAPTER 9: STUDY RESULTS.

9.1. Preliminary Considerations.

As a result of the interviews the author was able to obtain a clear body of opinion concerning the development of the training function in the company and its present status. These matters are basically important and will therefore be discussed prior to analysing the opinions/answers prompted by the questionnaires.

(a) Training is considered over the years to have been organised in a haphazard fashion, with courses emerging perhaps as a result of a general felt need but certainly not as a result of a searching assessment of performance. In-company courses in particular have been regarded as very general, to meet a possible need at some particular level in the company, everyone who could be released attending the particular course.
Employees have observed a significant increase in the amount of training activity over the last two or three years, but again in general feel that the degree of planning devoted to the function is minimal.

(b) At all levels and with few exceptions at any level the training function is regarded as a personnel function, and the personnel department through its training section is seen as the initiator; there is a dissassociation of training and development from the workplace.
The emergence of a separate education and training department has contributed to this divorcement and in the company this is to some extent associated with the Industrial Training Act, virtually 100% of the interviewees being conscious of the fact that there now existed a financial return from training "which

the company would be foolish to ignore".

9.2. Senior Management Interviews.

9.2.1. The Act and the CAP-ITB.

Without exception all interviewees were of the opinion that the change in tempo of the company's training activities in recent years had been the result of a company need. However in addition they felt that national propaganda as a result of the Act and the appointment of a specific Board embracing the company had led to a greater acceptance of the need for training, had made people more financially conscious of the discipline and had perhaps stimulated people by acting as a source of fresh ideas.

A general comment was that the company had always been "training conscious" and was now deservedly receiving something of a bonus through the Act, but that the company had not deliberately increased its training commitment to improve this bonus, rather it had recognised a company need to extend its training activity in recent years.

None of the literature published by the Board has been circulated through the company at these levels. Though some interviewees were conscious that literature existed and could be obtained within the company through their own initiative, only a small minority had in fact read any of the literature. The training section of the personnel department were considered a screening medium in regard to all training literature.

9.2.2. The Line Management Role.

As was anticipated considerable discussion took place around this topic and it tended to recur at intervals during each interview. An impression of relative responsibility did emerge, approximately as follows:

	% of Interviewees.
Who considered their role to be the primary role in the training and development function (1)	40%

	% of Interviewees.
Who considered their role to be secondary to that of the training department.	60%

(1) In terms of establishing individual needs, setting priorities, planning and organising the training of employees and assessing results.

9.2.3. Line Management Involvement.

Follow-up questions to reveal evidence of and the extent of line management involvement in the training function revealed the following:

	% of Interviewees.
Who had an established appraisal scheme for subordinates.	20%
Who had made an assessment of individual training and development needs departmentally.(1)	10%
Who had in existence a training plan.	10%
Who maintained or requested any training statistics.	0%
Who had initiated any training personally during, say, the previous twelve months.(2)	15%

(1) A majority stated that they had done this informally and lists have recently been drawn up on the initiative of the training department, but in conjunction with line managers, revealing the numbers of employees who have and have not attended particular in-company training courses.

(2) Other than simply forwarding a list to the training department stating who would attend a course laid on by the department.

In two departments of the company training had recently been given prominence through the appointment of training foremen to meet the particular needs of new recruits. It is interesting to note that early indications reveal that this action has significantly reduced labour turnover in these areas. Time did not allow the author to study this feature in depth and it has probably been in existence for too short a period of time for conclusions to be possible, but the indications to date give cause for optimism that training may be seen in a different light.

9.2.4. Assessment of Training.

The two aspects of assessment were considered:

9.2.4.1. Employee - oriented.

Those managers who operated an appraisal scheme utilised the appraisals as a time for assessing training effectiveness and obviously a degree of assessment is carried out continuously through the observation of individual performance and therefore some assessment of the return fro particular training obtained. However, no body of opinion is collected in any form over a period of time concerning training policy or the relative value being obtained in terms of individual performance and attitude.

9.2.4.2. Course - oriented.

Informally criticisms of existing courses are passed to the training section by all managers and through this means a course structure may be changed.

No formal means exists for periodic discussion of the training function between line management and the training section.

9.2.5. Future Practice.

The interviewees generally saw a need for change in existing training practice, a summary of the suggestions being:

(a) Induction practice needs to be extended at all levels in the company in terms of content and follow-up through time.

(b) Courses and programmes must be more tailored to suit particular requirements rather than a number of general courses being presented, some aspects of these courses being far too extended whilst others were not dealt with in sufficient detail.

(c) The training area should be tackled in a much 'bigger' way, in terms of ensuring sufficient labour slack to allow training to meet particular needs, a much greater involvement of all parties, and especially a greater association of training specialists and line departments, and an extension of the use of external specialists for internal courses.

(d) The training emphasis must be moved into the operating departments and away from the centralised establishment.

9.3. Middle and Junior Management Interviews.

9.3.1. The Degree of Personal Association with Training.

As has been stated previously the general training 'image' is that it is of a depersonalised nature, the company having 'blown hot and cold' on the function over the years. Evidence from the interviews illustrates this as follows:

	% of Interviewees.
Who felt that individual needs were considered in the planning of training and the selection of employees for courses.	15%
Who had considered training and development to be in any way systematic through the years.	10%

9.3.2. The Application of the Training.

Very little positive interest is taken in preparing a trainee, discovering if he enjoyed a course, benefited from it, or was critical of it, in the short or long term.

	% of Interviewees.
Who had discussed courses with their supervisors either prior or subsequent to their attendance.	10%
Who had been counselled about any course some months after its completion (1)	5% (2)

(1) There has for some time been an open discussion period at the end of an in-company course.

(2) Recently a post-course comment form has been introduced by the training section, for completion by the trainee approximately two months after the course, and with space for comment from the trainees supervisor.

9.3.3. Course Evaluation.

Discussion of actual in-company courses revealed some satisfaction with what was presented, though the material was not seen to be of great practical value:

	% of Interviewees.
Who considered that the aims of particular courses were clearly established.	80%
Who considered that the aims were achieved.	90%
Who considered the course syllabus in general relevant to their job.	90%
Who considered the material presented to be of practical value.	30%

9.3.4. Reasons for Ineffective Training and Recommendations for the Future.

General criticisms which emerged were:

(a) That training needed to be more work-centred and that there needed to be a more committed attitude toward training at all management levels.

(b) A large gap exists between the training given and the real everyday working environment of the trainees. In particular course structure and content (especially case studies), and the level of appreciation of the training specialists of the workplace and the trainees were criticised.
Insufficient attention is given to structuring courses in terms of the types of employees attending and the ability of the syllabus/presentation to meet the needs of personnel of a very different set of backgrounds. All the interviewees recognised that there was considerable value in a cross-section of employees meeting and discussing common problems. However, the consensus of opinion was that training courses were not the place to achieve this communication, the atmosphere created by the structure inhibiting some people and creating boring situations for others. Course length was considered too great in a number of areas, and the pitching of some lectures far too low so that trainees felt they were being talked down to.

Most of the interviewees felt that in future it was essential that the company extended its training activities further, in terms of greater breadth, and depth through the structure to educate lower category employees. The area requiring most urgent attention at present was seen to be operator training, but it was felt that greater efforts should be made to ensure that all training undertaken was more effective.

CHAPTER 10: DISCUSSION OF THE RESULTS.

10.1. The CAF-ITB.

It is certain that the CAF-ITB has had little or no impact upon the training activities of this company and it is extremely doubtful whether it can have any future impact in itspresent mode of operation. The Act and the Board may have had a marginal effect upon the level of training consciousness in the company, in particular through associating training with financial outlay, but this has been very much a surface effect and no real progress has been made in modifying attitudes to the extent that training has been more soundly organised.

In training conscious companies Boards have a different responsibility. If they are going to significantly affect the training practice they must penetrate the companies in depth. To provide broad guidelines and then leave it to these companies to do what they feel is best is a pointless activity.

10.2. Company Training Practice.

The picture which emerges from the interviews is that in general (though exceptions exist) current training practice is not basically sound in terms of the accepted criteria discussed in chapter 3, viz:

(a) training is a person-centred activity;

(b) training is an integral part of a line manager's task, not a staff activity;

(c) the training system involves the establishment of individual training needs based upon job performance, the formulation of training policy and the assessment of training effectiveness.

Because the training is not basically sound only minimal value is being obtained from a great deal of genuine effort and the expenditure of a considerable sum of money. In fact the author discovered areas of the company where attitudes toward training are extremely cynical and therefore

destructive. Whilst training can be a valuable asset it must be recognised that it can also have a negative effect and be responsible for such phenomena as declining morale, informal strife and in the extreme increased labour turnover.

Training has mushroomed with the growth of the company and of a general felt need, but largely through the initiative and an extension of the responsibility of the personnel function. Hence there has been a tendency for all training activity and responsibility to gravitate toward the personnel function and away from the line departments. The company is too large and diverse for this degree of centralised control of the training function to be practical. A centralised co-ordinating, record-keeping and specialist service is necessary, but the real motivation for training must stem from the line departments; they must define the needs, establish policy and ensure that needs are met through implementing the training system and assessing the results. Training must be appropriate to the individual and must immediately be seen to be relevant to his day-to-day work. The manager, as the leader of the working group, must recognise that it is one of his functions to train and develop his subordinates.

The degree of autonomy exercised by the personnel department is at present so great, and the line management role generally so peripheral, that although there is a large consensus of opinion that changes are necessary (and the correct changes are recognised), it is difficult to foresee change occurring. No formal platform exists within the company which would be likely to provoke the degree of change necessary and the informal channel is unlikely to provide the necessary pressure. A small minority of line managers have recently taken the initiative, for example in the appointment of training foremen, but considerable pressure will be essential to bring about the degree of change necessary to place training on a sound basis and thereby optimise the return from the function.

CHAPTER 11: CONCLUSIONS.

1. The CAP-ITB in its present form is not achieving the purpose for which it was established in this company and by inference in a large sector of the chemical industry. The Board must recognise that it has a dual function if it is going to achieve the aims of the Act:

(a) To establish training in companies which previously had no training practices; and

(b) In medium and large "training conscious" companies, which employ the majority of the labour force in the industry, the Board must assume a more penetrating role. Taking advantage of the expertise in the Board and the advantage it has of having an independent and objective approach it must raise the value being obtained from training in these companies. The latter represents the key area where the Board must concentrate its effort.

2. The company studied is receiving only minimal value from the training function despite a great deal of genuine effort and the outlay of considerable money. In order to remedy this situation the company must take immediate steps to place the responsibility for training in the hands of the line managers and to ensure that training undertaken meets the specific needs of individuals in the performance of their jobs. Formal means must be established for continuously assessing and reviewing training at all levels.

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11. Training Within the Organisation, D.King (Tavistock Publications, 1964).
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    (a) The Role and Function of the Education and Training Officer, Survey Report, B.A.C.I.E.Journal.,V.16,No.1, March, 1962.

(b) The Personnel Officer and the Training Function, A.C.Hamblin, ibid.

14. Almost any of the proliferation of books on training could have been referred to as source material for this section. Basic texts chosen were:

(a) Industrial Training Handbook, op.cit.

(b) Training Within the Organisation, op.cit.

(c) Analysis and Costing of Company Training, J.R.Talbot and C.D.Ellis (Gower, 1969).

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16. Examples:

Recruitment to Skilled Trades, Gertrude Williams, Routledge and Kegan Paul (London), 1957;

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19. Material for this section has been based upon the Industrial Training Yearbook, 1970, an annual by Kogan Page.

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21. Ninth Report from the Estimates Committee, together with the Minutes of the Evidence Taken before the Sub-Committee on Economic Affairs, Appendices and Index, Session 1966-67: Manpower Training for Industry, H.M.S.O.1967.

22. Industrial Training Management, J.Flanagan, Business Books, 1970.

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24. For example:

(a) according to D.E.P. (Statistics) the number of boys entering apprenticeships between 1964 and 1969 rose by nearly 10%;

(b) since the Act the numbers under training in manufacturing industry have risen by 15%, and in engineering - the largest single sector of the economy - by a quarter.

(c) the number of off-the-job training places in engineering, ship-building and iron and steel has more than doubled.

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35. Basic material for this section has been obtained from two sources:

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    (b) Interviews with CAP-ITB staff.

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ACKNOWLEDGEMENTS.

The author would like to record his thanks to Messrs.P.Dibbings and G.Noble of the Imperial Smelting Corporation for providing facilities for the study and to Mr.L.G.Pitteway for his guidance during the work. Thanks are also due to employees of the Imperial Smelting Corporation, in particular Mrs.M.P.Turner, for ready assistance during the field study.

FIG. I EMPLOYEE NEEDS — MAINTENANCE AND MOTIVATIONAL

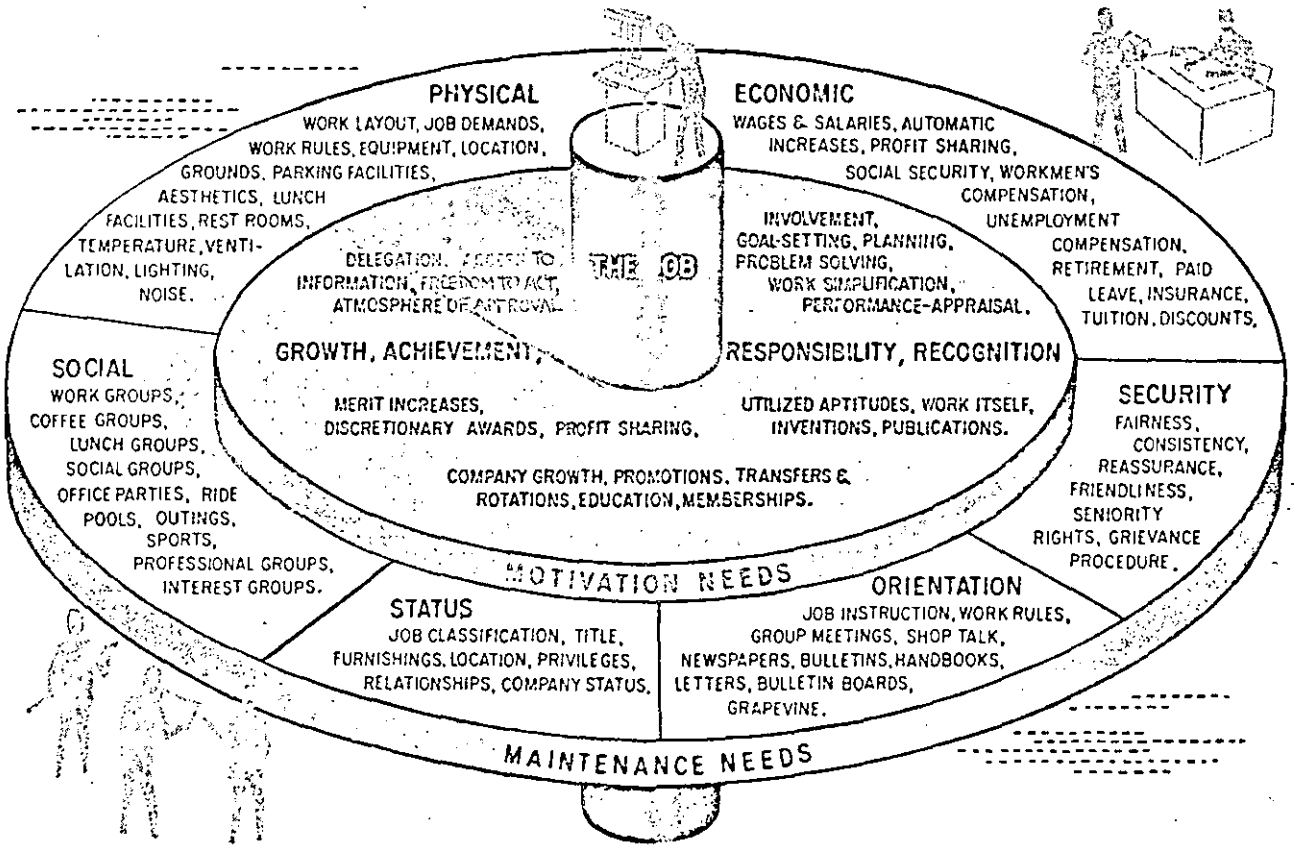


FIGURE 2. THE TRAINING SYSTEM

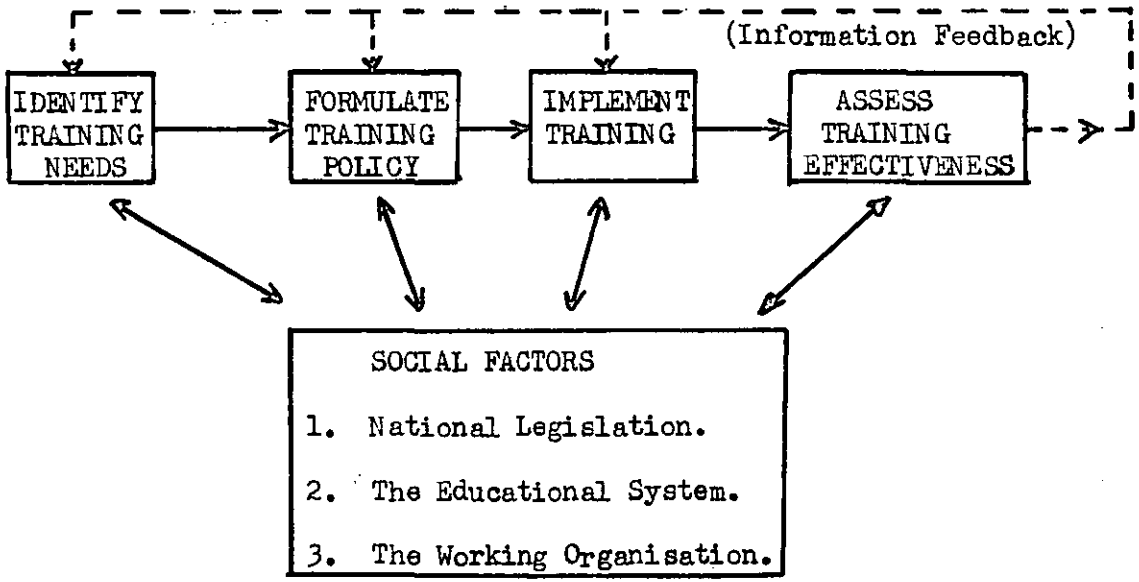


FIGURE 3. THE PRESENT COMPLEX OF RESOURCES, INFORMATION AND OBLIGATIONS IN INDUSTRIAL TRAINING

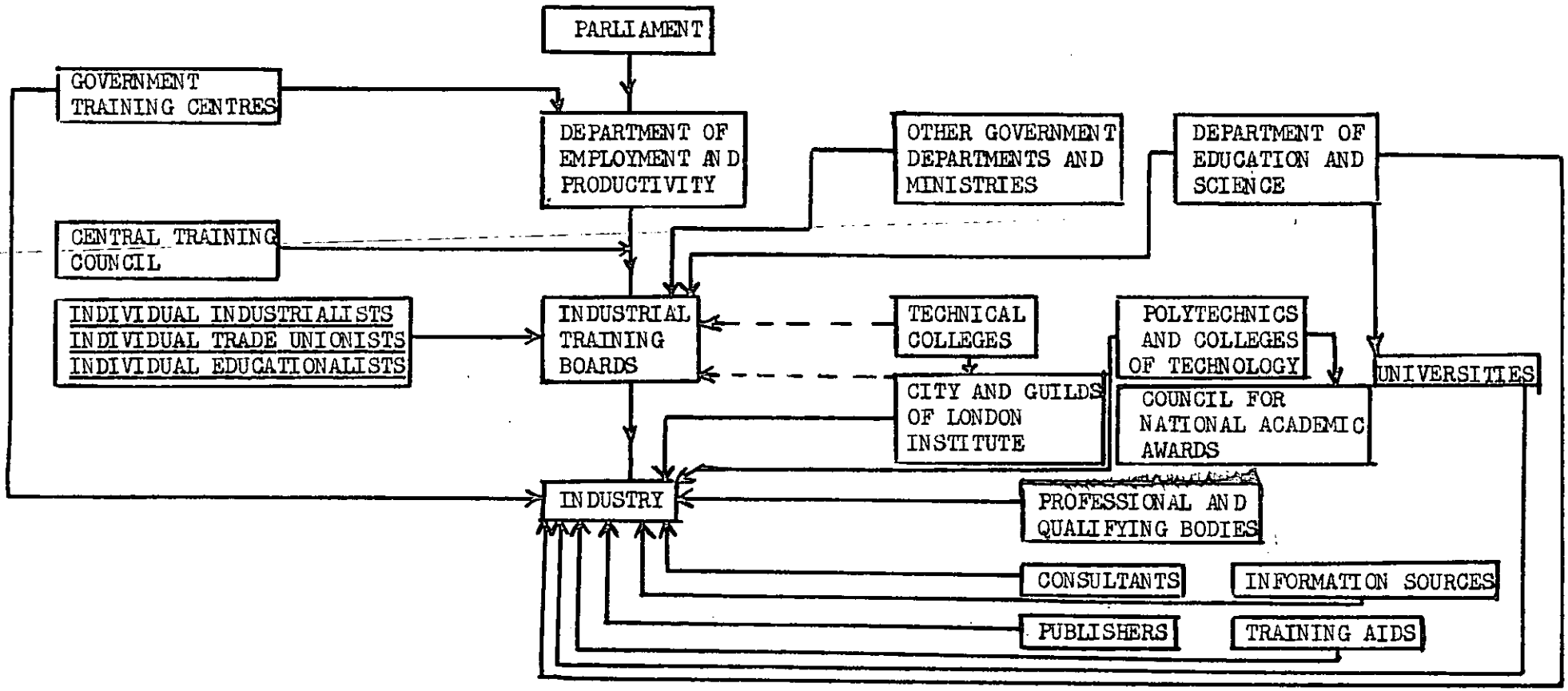


FIGURE 4 - ORGANISATION OF THE CAP - ITB
COMMITTEES, SUB-COMMITTEES, WORKING PARTIES, STUDY GROUPS - FEBRUARY, 1969

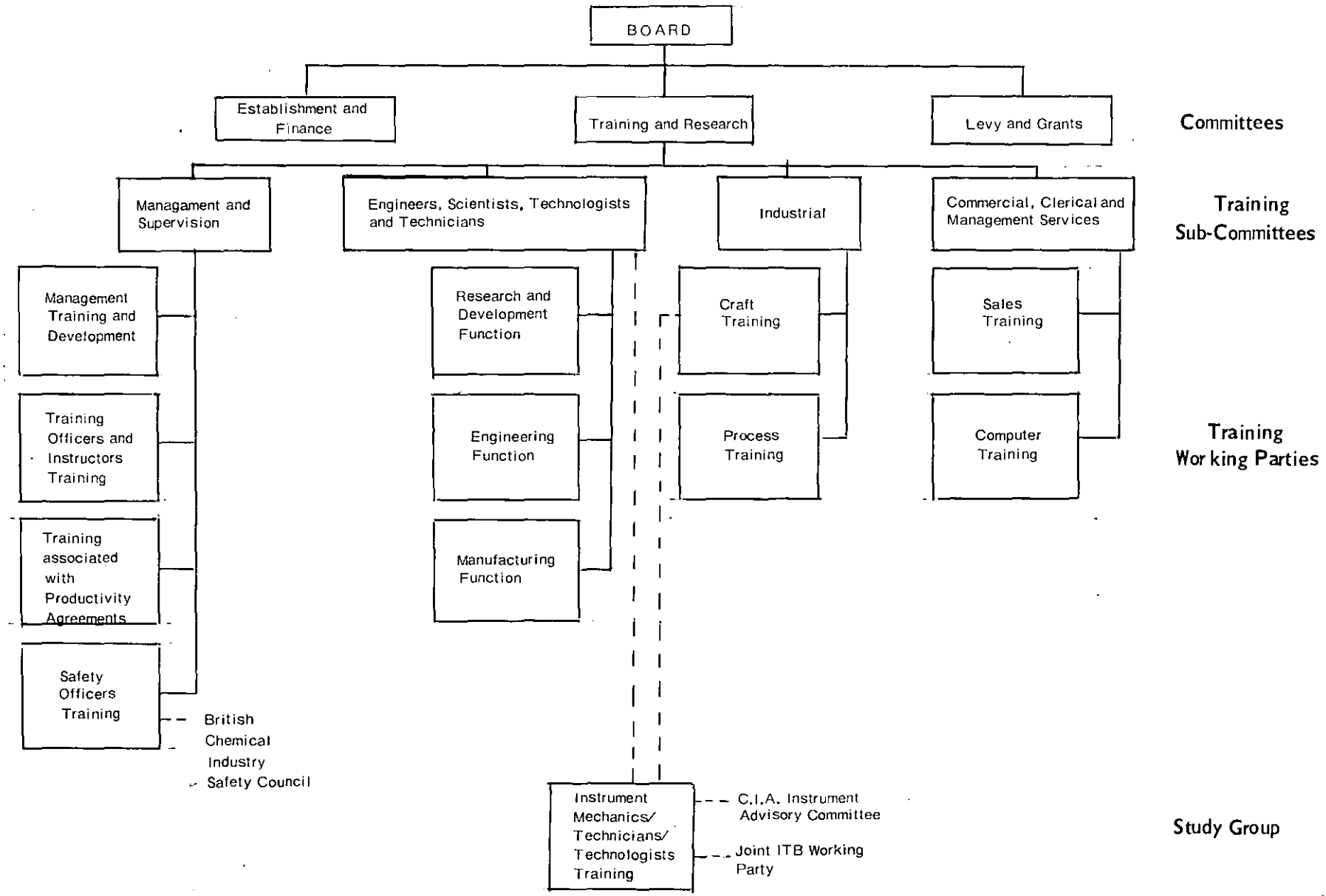


FIGURE 5 - ORGANISATION OF THE CAP - ITB COMMITTEES, SUB-COMMITTEES, WORKING PARTIES, STUDY GROUPS - OCTOBER, 1969

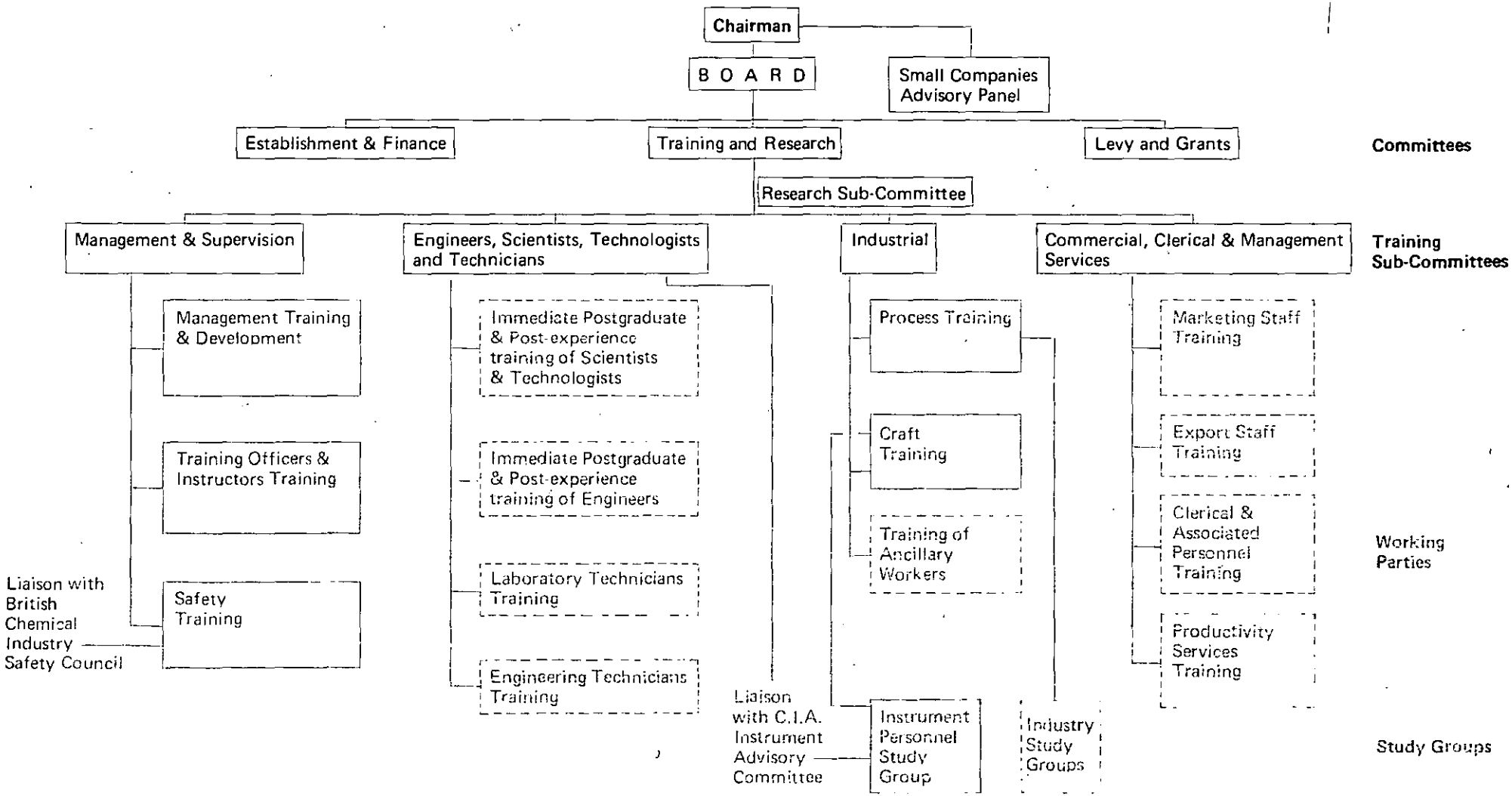


FIGURE 6 - ORGANISATION OF THE CAP - ITB COMMITTEES, SUB-COMMITTEES, WORKING PARTIES, STUDY GROUPS - FEBRUARY, 1970

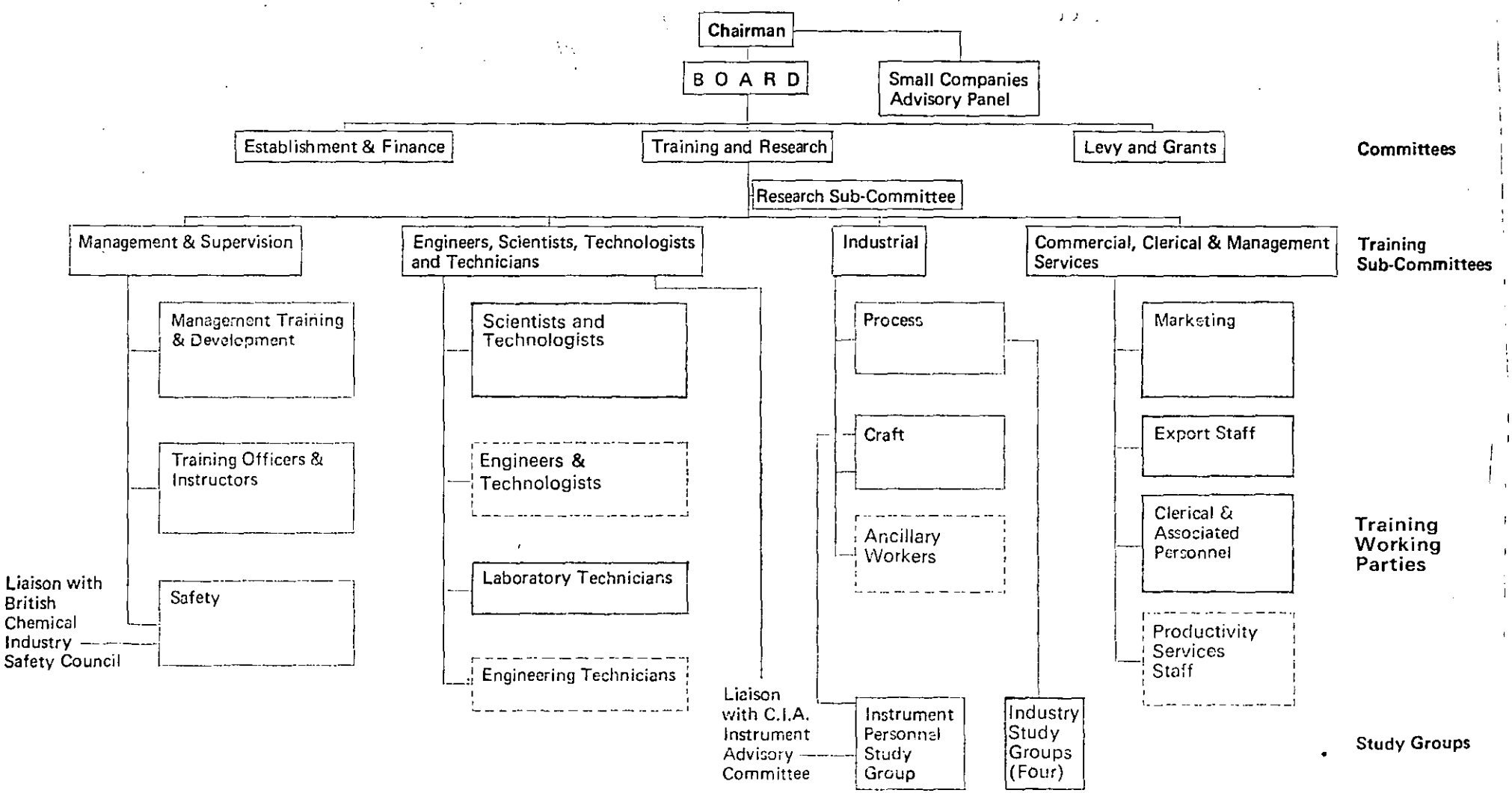


FIGURE 7 - MODIFIED CAP - ITB STRUCTURE - JULY, 1970

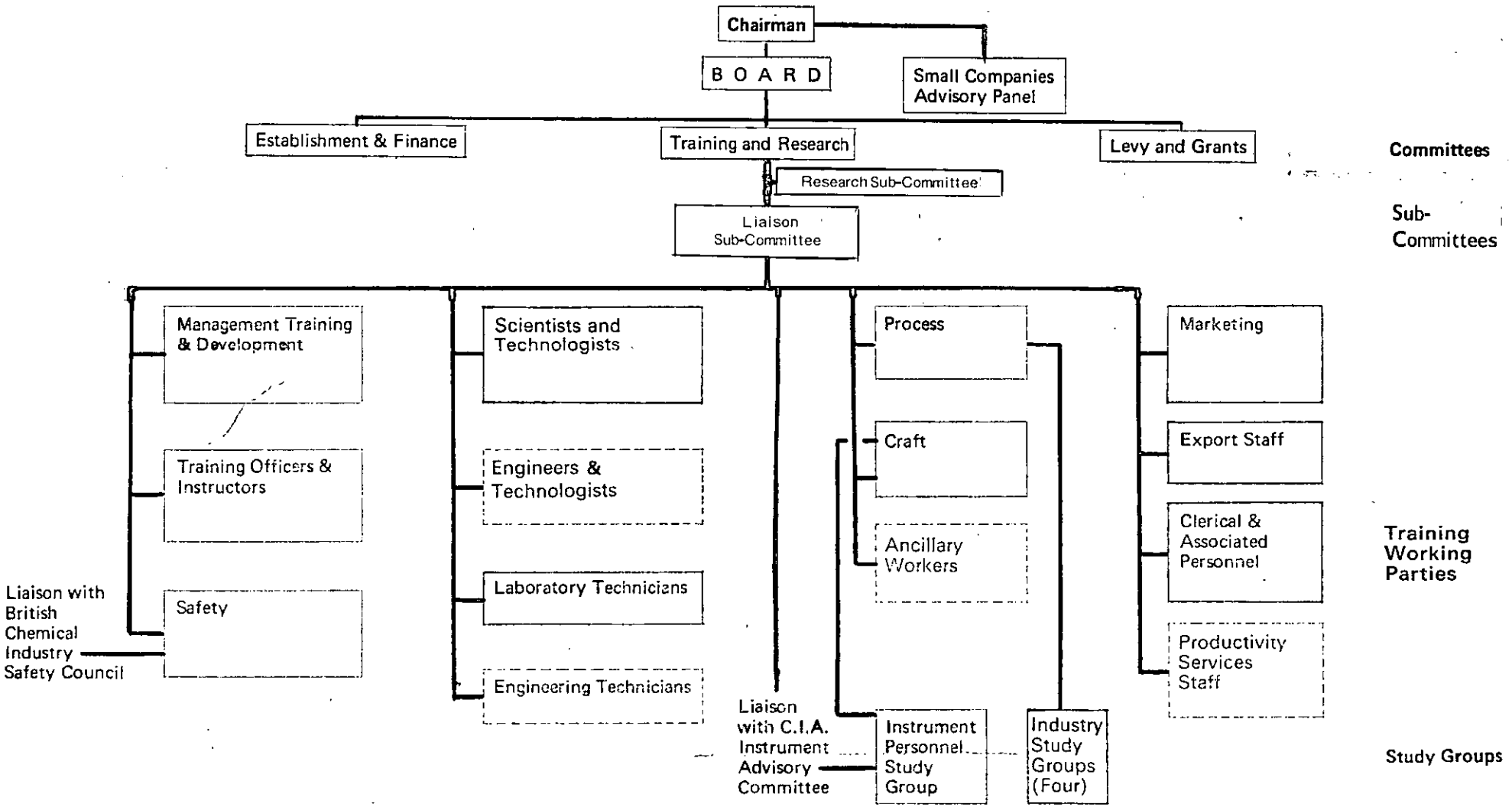


FIGURE 8 - CAP - ITB
STEPS LEADING TO THE PUBLICATION OF A TRAINING RECOMMENDATION

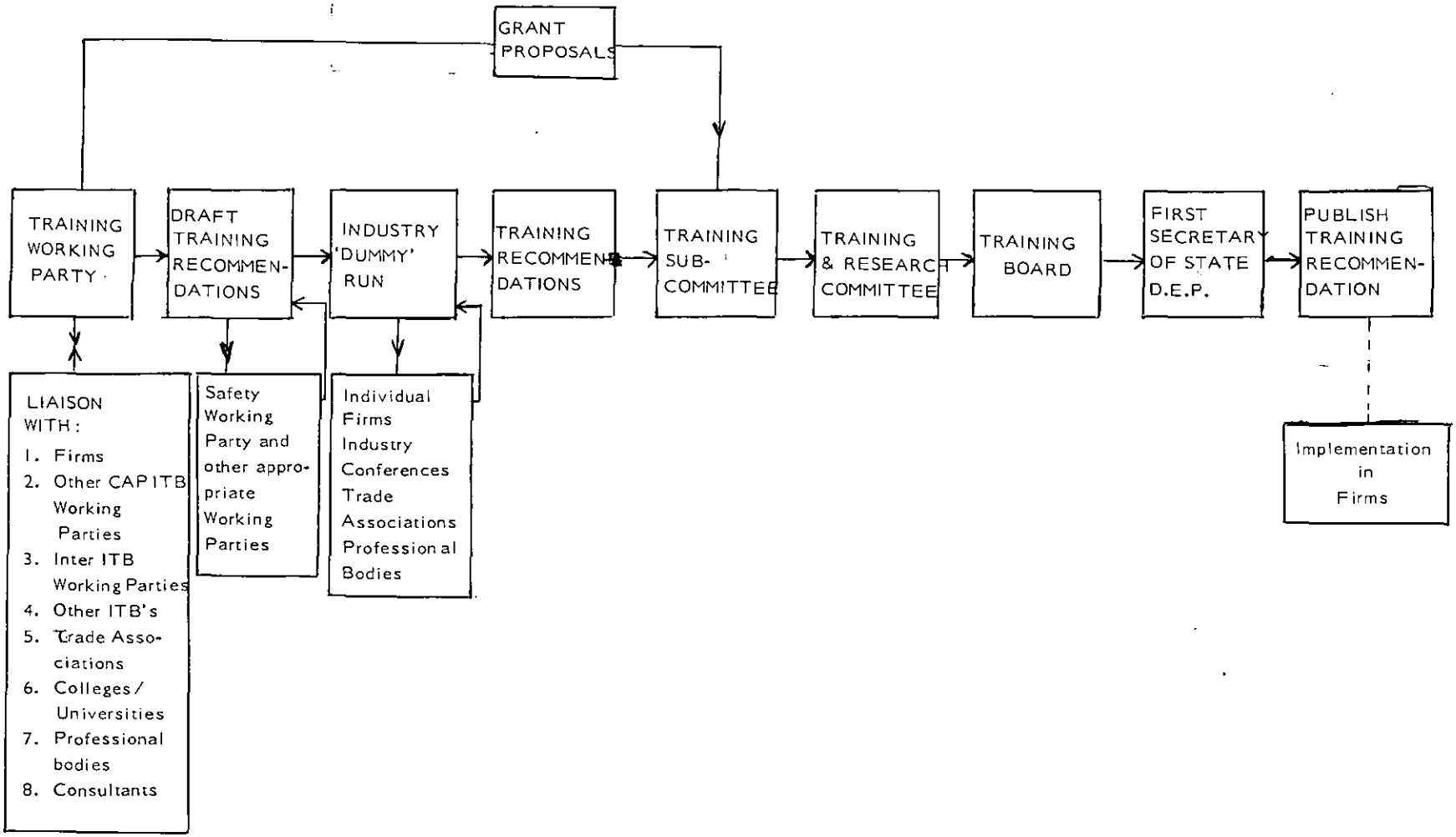


FIGURE 9. ORGANISATION STRUCTURE OF IMPERIAL SMELTING CORPORATION - JULY, 1970.

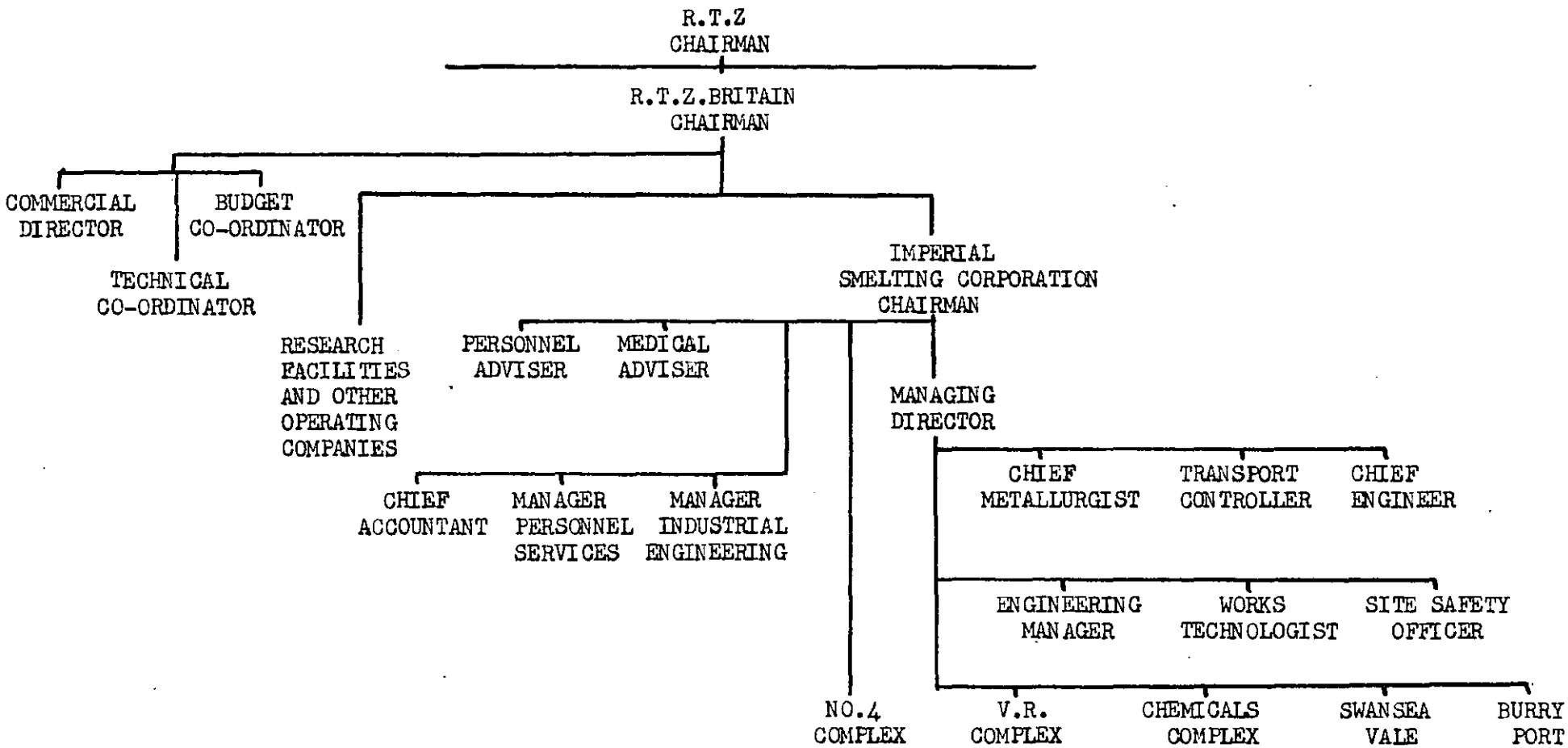
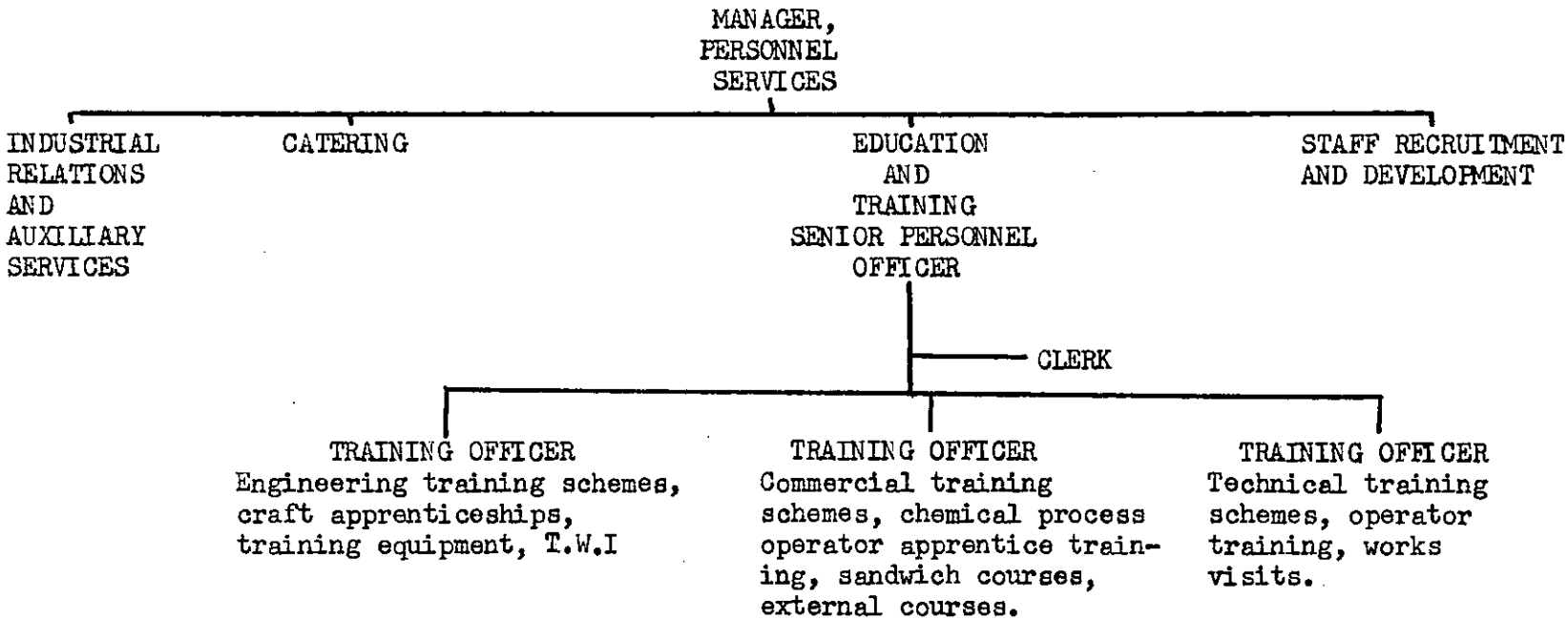


FIGURE 10. ORGANISATION STRUCTURE OF THE EDUCATION AND TRAINING SECTION, PERSONNEL SERVICES DEPARTMENT, IMPERIAL SMELTING CORPORATION - JULY, 1970.



The Senior Personnel Officer carries overall responsibility for the administration and organisation of education and training. The three training officers are deployed on any aspect of the work, but have the particular responsibilities shown.

CHEMICAL AND ALLIED PRODUCTS INDUSTRY TRAINING BOARD
ANALYSES OF EMPLOYERS* AS OF 14TH NOVEMBER 1969

No. of Employees	Industry Group											Total in Size Group	Cumulative Total
	A	B	C	D	E	F	G	H	I	J	L		
Under 10	74 (20%)	2 (7%)	76 (29%)	8 (19%)	36 (25%)	31 (24%)	36 (41%)	2 (8%)	17 (35%)	90 (48%)	14 (31%)	386 (28%)	386 (28%)
10 - 25	78 (21%)	4 (14%)	53 (21%)	8 (19%)	17 (11%)	31 (24%)	19 (21%)	3 (12%)	10 (21%)	42 (23%)	14 (31%)	279 (20%)	665 (48%)
26 - 50	64 (17%)	5 (17%)	44 (17%)	9 (22%)	20 (14%)	15 (12%)	15 (17%)	4 (15%)	9 (18%)	16 (9%)	5 (11%)	206 (15%)	871 (63%)
51 - 100	39 (10%)	6 (21%)	32 (12%)	6 (14%)	17 (11%)	12 (9%)	5 (6%)	2 (8%)	6 (12%)	15 (8%)	9 (20%)	149 (11%)	1,020 (74%)
101 - 200	35 (9%)	3 (10%)	28 (11%)	6 (14%)	18 (12%)	11 (9%)	3 (3%)	3 (11%)	2 (4%)	11 (6%)	2 (5%)	122 (9%)	1,142 (83%)
201 - 500	39 (10%)	4 (14%)	15 (6%)	2 (5%)	17 (11%)	16 (13%)	4 (4%)	3 (11%)	4 (8%)	4 (2%)	0 (0%)	108 (8%)	1,250 (91%)
501 - 1000	22 (6%)	3 (10%)	6 (2%)	1 (2%)	15 (10%)	3 (2%)	1 (1%)	6 (23%)	1 (2%)	4 (2%)	1 (2%)	63 (4%)	1,313 (95%)
Over 1000	25 (7%)	2 (7%)	5 (2%)	2 (5%)	9 (6%)	9 (7%)	6 (7%)	3 (12%)	0 (0%)	4 (2%)	0 (0%)	65 (5%)	1,378 (100%)
TOTAL IN INDUSTRY GRP	376 (100%)	29 (100%)	259 (100%)	42 (100%)	149 (100%)	128 (100%)	89 (100%)	26 (100%)	49 (100%)	186 (100%)	45 (100%)	1,378 (100%)	

INDUSTRY GROUP CODE

Code Letter	Industry Group
A	General inorganic and organic chemicals (including explosives, fertilisers and plastics, U.K.A.E.A.).
B	Coke, smokeless fuel, tar
C	Surface coatings, adhesives, mastics.
D	Inks, printers' rollers.
E	Pharmaceuticals
F	Cosmetics, perfumes, aerosols
G	Detergents
H	Non-ferrous metals
I	Fatty acids, glycerine, polishes, waxes, candles
J	Manufacture and processing of photographic film
L	Disinfectants, pesticides (including application)

ESTABLISHMENTS

The total number of establishments within scope is 3,513 of which about 2,600 are visited by Training Staff.

* An '**employer**' is a company or group of associated companies controlled by a common parent.

APPENDIX 2

CHEMICAL AND ALLIED PRODUCTS INDUSTRY TRAINING BOARD

ANALYSIS OF EMPLOYEES BY TYPE OF JOB

TYPE OF JOB	PERCENTAGE OF EMPLOYEES.
Managers, Dept.Heads etc.	5.1
Supervisors and Foremen	4.9
Engineers, Scientists and Technologists	5.6
Technicians	7.9
Marketing & Sales Staff	4.9
Clerical, Office	14.7
Other Administrative and Commercial Staff	3.4
Craftsmen	9.8
Production Workers	27.5
Other Employees	16.2

January, 1969.

APPENDIX 3

CHEMICAL AND ALLIED PRODUCTS INDUSTRY TRAINING BOARD

ANALYSIS OF EMPLOYEES BY SECTIONS OF INDUSTRY

SECTION OF INDUSTRY	% OF TOTAL EMPLOYEES	% FEMALE
General inorganic and organic chemicals including Explosives, Fertilisers, Plastics; aromatic compounds or mixtures, U.K.A.E.A.	55	29.2
Coke, smokeless fuel, tar	3.1	5.2
Paint, putty, luting, adhesives, mastics	7.6	26.7
Ink and printers rollers	.8	15.7
Pharmaceutical products, sutures	14.6	44.3
Cosmetics, perfumery, aerosol products and filling	5.3	61.7
Soap etc.	4.5	37.4
Non-ferrous metal and assaying nobel metals	3.2	15.0
Fats, distillation, polishes, cleaners, waxes	.9	27.9
Photo studios/labs and sound labs	4.5	34.5
Disinfectants, pesticides and their application	.5	22.4

May, 1969.

CAP-ITB TRAINING RECOMMENDATIONS

By mid-1970 the following recommendations had been published:

No.1 - Management and Supervisory Training and Development.

No.2.- Immediate Post-Graduate Training of Engineers, Scientists and Technologists.

No.3.- Induction Training for Operators, Craftsmen, and Ancillary Workers.

No.4.- Induction Training for Clerical and Associated Personnel.

No.5.- Sales Training.

No.6.- Conversion Course for Electricians and Mechanical Fitters to Instrument Craftsmen.

No.7.- Punch Operators or Verifiers.

The Board anticipate that there will be 20 to 30 Recommendations by 1972. Figures 6 and 7 show the structure established with the following 1969/70 programme in mind.

1. MANAGEMENT & SUPERVISORY TRAINING

The following work will be undertaken by the four Working Parties reporting to the Management & Supervision Training Sub-Committee without the formation of any new Working Party.

1.1. Management & Supervisory Training and Development.

The first priority is the follow-up of Recommendation No. 1 Management and Supervisory Training and Development, through a series of countrywide industry meetings. The Working Party will also be producing further guide lines on the principles given in Recommendation No. 1, an outline of the preferred content of short follow-on management courses for medium and smaller firms, and separate guidance on the training of supervisors.

1.2. Training Staff.

The first priority is to launch short basic courses designed for the

senior staff of the smaller company, who must inevitably take the main burden of handling training in this size of firm. Further work will include preparation of short courses or modules for trainers, e.g. in techniques of instruction, and investigation into instructor training needs.

1.3. Safety Training

Evaluation and development of the pilot safety appreciation courses being run this autumn is the first priority. These will be followed by special courses for small firms if necessary, and recommendations for systematic safety training are being considered.

1.3. Training Implications of Productivity Agreements.

The Working Party hopes to report by late autumn.

2. ENGINEERS, SCIENTISTS, TECHNOLOGISTS & TECHNICIANS

Of the three first stage Working Parties appointed to define technical jobs, Research and Manufacturing are expected to report in October with Engineering reporting fully in December. Four second stage Working Parties will then be formed to use these reports to consider each of the following areas with detailed tasks as shown. Only initial priorities are embraced in the technician area at this stage.

2.1. Immediate Postgraduate and Post-experience Training of Scientists and Technologists.

Covering:

(1) Assistance in promoting the interim Recommendation No.2 for Immediate Postgraduate Training for Engineers, Scientists and Technologists, and development of more permanent proposals.

(11) Assessment of present and probably future needs of industries served by the Board for introductory and updating post-experience courses in particular aspects of technical and scientific knowledge.

(111) Assessment of the needs for courses in managerial techniques specifically slanted to technical departments.

2.2. Immediate Postgraduate and Post-experience Training of Engineers.

Covering investigation of:

(1) Differing approaches to the training of engineers.

(11) Applicability to our Industries of the Engineering Industry Training Board (EITB). Recommendations for the training of professional engineers.

2.3. Laboratory Technicians.

Covering production of:

(1) General training recommendations including specifically the research area.

(11) Specific recommendations on the industrial training content of integrated courses.

(111) Specific recommendations for particular industries, e.g. pharmaceuticals.

2.4. Engineering Technicians.

Covering:

(1) Consideration of whether draughtsmen and engineering laboratory technicians require similar training.

(11) Consideration of how far EITB technician training proposals when published, will be applicable to our industries.

2.5. Industrial Training Associated with Sandwich Courses.

Interim training recommendations will be prepared.

2.6. First Line Supervision - Technician Aspects.

As soon as the new Working Parties have cleared the agreed priorities, this subject will be given attention.

3. COMMERCIAL, CLERICAL & MANAGEMENT SERVICES.

3.1. Existing Working Parties.

The Sales Training and Computer Training Working parties will move on to a "care and maintenance" basis in late 1969 as they complete the work set out below:

Sales

(1) Assistance in launching the Sales Training Recommendation.

(11) Consideration of the possibility of developing modules of sales training for each of the Board's Industries in conjunction, as necessary with the Trade Associations.

Computer.

(1) Completion of Training Recommendation for Programmers now at an advanced stage.

(11) Preparation of Training Recommendation for Management Systems Analysts.

(111) Assistance in launching computer training recommendations and a countrywide series of one-day computer appreciation courses.

3.2. New Working Parties.

Four new Working Parties, which will liaise with the relevant Inter-Board Committees, will be covering the following:

(1) MARKETING - A follow-on to Sales Training which was our first priority within the total Marketing concept.

(11) EXPORT SALES - A follow-on to the Sales Training Recommendation which relates specifically to Home Sales.

(111) CLERICAL - This will include export office procedures and will make recommendations on a systematic approach taking into account all forms of clerical training.

(IV) PRODUCTIVITY SERVICES - This is an area which can have an appreciable effect on efficiency and productivity in other functions. The Working Party will examine handling of Organisation and Methods, Operational Research and other related areas including their relationships with training.

3.3. Computerized Process Control.

In addition CAPITB has now initiated through DEP the establishment of an Inter-Board Working Party on training associated with computer

controlled processes in which the Chemical & Allied Products Industries have special interest.

4. PROCESS OPERATORS, CRAFTSMEN AND ANCILLARY WORKERS.

4.1. Process Operator Training

The following possible stages have been identified:-

(1) Induction - Already covered by Recommendation No.3.

(11) Specific Operator Training - As a precursor to a training recommendation on Systematic Operator Training, which it is hoped will be published in time for the 1970/71 Grants Scheme, The Working Party is preparing an integrated series of Information Papers on Analysis of Plant Training Needs; Operator Job Analysis, Fault Analysis; and the Training Programme.

The series is designed to provide systematic training for particular jobs based on in situ analysis of training needs.

(111) Possible General Basic Training - This would be specific to individual industries.

(1V) Possible Modular Training - This, if applicable, would be specific to individual industries, and the modules would be of varying duration and complexity.

4.2. Study Groups.

To arrive at conclusions on 4.1. (111) and (IV) will need detailed study by persons well versed in the detail of the various industries involved and accordingly five Study Groups are being set up covering the main industry groups.

4.3. Craft Training.

A draft recommendation for First Year Training of Engineering Craft Apprentices based largely on the Engineering ITB (EITB) First Year Apprentice Training Recommendation, and a syllabus of Conversion Training for Instrument Mechanics have been produced and are currently

being tested with Industry. Future priorities for the Working Party are as follows:

(1) Examination in depth of a number of training modules for engineering craft and construction craft trades, and consideration of the need for an illustrated instruction manual for each module. Whilst we prefer to use EITB modules as they stand wherever possible, experience to date indicates that in most cases some modification will be necessary because of the accent in our industries on engineering maintenance rather than on engineering production.

(11) Consideration of the necessity for certification and registration of craft trainees, and the manner of linking it to the EITB registration and certification scheme.

(111) Consideration of the training of fitters from other industries.

4.4. Ancillary Worker Training.

A Working Party is to be formed probably with rotating membership, bearing in mind the many miscellaneous occupations involved including drivers, warehousemen, storemen, oilers, greasers, etc.

APPENDIX 5.

FIRST-LINE MANAGEMENT TRAINING COURSES.

Course Number.	Date Commenced.	Course Number.	Date Commenced.
001	31.10.55	016	10.1.66
002	28.11.55	017	21.2.66
003	30.1.56	018	21.3.66
004	27.2.56	019	9.5.66
005	9.4.56	020	14.11.66
006	3.12.56	021	2.1.67
007	7.1.57	022	13.2.67
008	4.2.57	023	9.1.67
009	4.3.57	024	12.2.67
010	21.10.57	025	15.1.68
011	2.12.57	026	22.7.68
012	6.1.58	027	11.11.68
013	10.2.58	028	17.3.69
014	17.3.58	029	22.9.69
015	28.4.58	030	12.1.70

APPENDIX 6

I.S.C. JUNIOR RECRUITMENT

Year.	Clerical Comm, Off. M/cs, Tracers etc.	Typists (Shorhnd and copy)	Lab. & Science	Chefs	Drghtsmen	Craft Apprentcs.	C.P.O Apprentcs	Total
1960	40	10	32	-	-	3	-	85
1961	32	3	33	-	3	6	2	79
1962	24	1	15	-	3	7	2	52
1963	4	-	20	-	-	8	2	34
1964	10	6	32	-	-	10	2	60
1965	23	15	26	-	4	9	7	84
1966	1	-	-	-	1	9	6	17
1967	16	6	22	1	5	4	6	60
1968	20	3	22	1	5	13	10	74
1969	13	7	21	1	4	13	12	71
1970 anticipated	15	5	25	1	2	13	15	76

I.S.C. CHEMICAL PLANT OPERATOR APPRENTICESHIPS

Year	Number Started	Qualified as	
		QCO	TCO
1953	5	2	2
54	4	1	2
55	None		
56	2	1	1
57	3	1	1
58	3	3	
59	2	2	
60	None		
61	2	2	
62	2	2	
63	2	2	
64	2	2	
65	7	3	2
66	6		
67	6		
68	10		
69	12		

I.S.C. JUNIOR TRAINEES, 1st.MARCH, 1970.

Science and Laboratory	73
Commercial	42
Draughtsmen	9
Tracers	5
Chefs	3
Chemical Plant Operator Apprentices.	23
Craft Apprentices	44
	199

I.S.C. PROGRAMME OF TRAINING COURSES 1969/70.

1. OPERATOR/INSTRUCTORS (2 days)

June I 16th and 17th; II 18th and 19th;
Oct. III 6th and 7th; IV 8th and 9th; V 20th and 21st.; VI 22nd. and 23rd;
Nov. XII 3rd. and 4th; VIII 5th and 6th; IX 24th and 25th; X 26th and 27th;
Dec. XI 1st. and 2nd; XII 3rd. and 4th.

2. INDUCTION TRAINING

a. SENIOR STAFF (2 days in addition to initial morning on joining)

July 7th and 8th;
Oct. 13th and 14th;
Jan. 8th and 9th;

b. 'M' GRADE STAFF ($\frac{1}{2}$ day in addition to initial morning on joining)

July 10th.
Aug. 12th.
Sept. 9th.
Oct. 30th.
Dec. 9th.
Feb. 9th.

c. JUNIOR AND APPRENTICES AND GRADUATE TRAINEES.

4 days commencing 2nd. Sept.

3. SAFETY TRAINING

a. First-Line Supervisory Staff (2 days)

Oct.	16th and 17th
Dec.	11th and 12th
Jan.	6th and 7th.

b. Safety Induction for new Staff. ($\frac{1}{2}$ day)

July	9th
Aug.	13th
Sept.	10th
Oct.	15th
Dec.	10th
Feb.	10th

4. PRELIMINARY MANAGEMENT TRAINING COURSE (First Line Supervisory Management) (3 weeks)

Sept. 15th to Oct. 3rd;
Jan. 12th to 30th (this latter is primarily for the Graduate Trainees)

5. SUPERVISOR SELECTION COURSE (2 weeks)

Nov. 10th to 21st.

6. GENERAL MANAGEMENT TRAINING COURSE (Superintendent Level)
(Second week of course started December, 1968)
Dec. 15th to 19th.

7. INTERVIEWING (3 days)

   July 28th to 30th.

8. STAFF APPRAISAL SEMINAR (1 days)

   Oct. 10th.

9. STAFF APPRAISAL APPRECIATION SESSION ($\frac{1}{2}$ day)

   Oct. 24th.

10. DISCIPLINE SEMINAR (1 day)

    Oct. 29th.

11. PRODUCTIVITY AGREEMENTS SEMINARS ($1\frac{1}{2}$ days)

    To be discussed further.

12. TARGET-SETTING (1 day)

    To be discussed further.

13. GUIDING FOR WORKS VISITS. (2 days)

    Oct. 27th and 28th.

APPENDIX 10

QUESTIONNAIRE FORMING THE BASIS OF THE SENIOR MANAGEMENT INTERVIEW AT IMPERIAL SMELTING CORPORATION.

1. Has the Industrial Training Act and the Appointment of a CAP-ITB affected training practice in this Company in your experience?
2. Have you read/studied any of the CAP-ITB training recommendations or draft proposals?
3. Do you receive any literature concerning training, especially that issued by the CAP-ITB?
4. What do you feel is your role in the training function?
5. Is there a training plan available now?
6. Has there been, in say the last 12 months, any assessment made of the future training needs of the personnel in this department?
7. Is there a general appraisal/development programme for the employees in this department?
8. Are any training statistics produced for or by this department?
9. Has this department initiated any training in the last 12 months, i.e. by direct request to the Personnel Services Department?
10. Is any assessment made of the value of sending employees on training courses?
11. Has your department influenced the structure of any training courses?
12. Have any particular personnel in this department direct responsibility for training or liaisson with the training section of the personnel services department?
13. What changes do you feel are necessary to existing company training practice?
14. In which areas do you feel the company training effort needs to be concentrated in the immediate future?

APPENDIX II

QUESTIONNAIRE FORMING THE BASIS OF THE MIDDLE AND JUNIOR MANAGEMENT INTERVIEW AT IMPERIAL SMELTING CORPORATION

The author introduced himself and initially requested information concerning the interviewees training back-ground.

1. Were the courses you have attended:
   (a) Part of a Company training programme for your personal development?
   (b) Presented to employees systematically over the years?
2. What do you feel has been the basis of your selection for courses?
3. Did your supervisor discuss courses with you:
   (a) Prior to your attendance?
   (b) Subsequent to your attendance?
4. Was there any course follow-up by Training Department staff?
5. Were the aims of the courses you have attended made clear?
6. Do you think the courses were in general effective?
7. Were the course syllabus relevant to your job?
8. Was the material presented of practical value?
9. Can you suggest any ways in which courses might be made more effective?
10. What changes do you feel are necessary to existing company training practice?
11. In which areas do you feel the company training effort needs to be concentrated in the immediate future?