

The determination of professional and managerial salaries in Australia

Author:

Donnelley, William Edwin

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THE DETERMINATION OF PROFESSIONAL
AND MANAGERIAL SALARIES IN AUSTRALIA

William E. Donnelley

Master of Business Administration

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I N D E X

INTRODUCTION

	<u>Page</u>
<u>Section I The Economists' Theory of Wages</u>	<u>1</u>
Institutional Aspect of Wage Fixing:	
(a) Empirical Studies	7
(b) At the Union Level	9
(c) At the National Level	13
(d) At the Firm or Industry Level	19
Summary	24
 <u>Section II Motivation</u>	
The Motivation of Working Groups	1
Individual Motivation:	
Incentives and Achievement	11
Money as a Symbol	15
The Perception of "Fairness"	18
Psychological Research on Pay:	21
(a) Perceptions of Pay Levels and Satisfaction	23
(b) Pay Comparisons	26
(c) General	27
 <u>Section III Job Evaluation</u>	
Introduction	1
Job Evaluation and the Wage Structure	4
Methods of Job Evaluation	5
Managerial Evaluation Schemes	10
Setting up a Salary Structure	16
Pricing the Salary Structure	18
Problems of Job Evaluation Schemes:	
(a) At the National Level	20
(b) At the Company Level	24
(c) General	27
Professional Job Evaluation within the Australian Arbitration System	31
Summary	39

Section IV Professional and Managerial Salaries

Salary Surveys	1
A. Australian Graduates' Salaries:	
(a) A Comparison of Age/Salary Relationships for Chemists, Engineers and Accountants	5
(b) Recent Trends in Graduate Salaries	7
(c) Employment Patterns	10
(d) Salary Differences Between Employers	11
B. Australian Wage Trends:	
(a) General	13
(b) Professional	14
(c) Conclusion	14
C. Comparisons of U.S. and Australian Graduate Salaries	15
Comparisons of U.S. and Australian Engineers' Salaries:	
(a) Rates of Salary Change	17
(b) Change in Salary with Experience	17
(c) Recent Trends	19
D. The Chief Executives' Salary	22
(a) Industry Differences	23
(b) The effect of Company Size on Salaries	25
(c) Relationships between Salaries, Sales and Profits	26
(d) A Theoretical Approach to the Salary/Size Relationship	30
E. Executive Salary Structure	32
F. Executive Salary Review Practices	35
G. Salary Characteristics	37
H. Salary Ranges	41
I. Executive Organisation	46
Summary	51

INTRODUCTION

1.

In discussing the rationale of executive compensation structures Arch Patton (1) defines the aim of these as being "to attract men competent to accomplish company objectives and motivate them to seek ever-greater responsibility in the company".

Implicit in such a definition is the belief that companies and industries can establish appropriate rates to attract executives and that competent men for each industry can be selected and so motivated as to help achieve the organisation's long term objectives.

This thesis examines the economist's theory of wages and explores the applicability of this theory to the individual firm. Empirical studies on practical wage fixing are examined, and this process is also considered from the social scientist's point of view. Here the actions of the institutions are seen as dominant, so that wage fixing emerges as a product of powerful forces attempting to reach "equitable" solutions. In these terms the organisation tries to establish salary structures which are comparable with those of other firms and which internally are consistent with the firm's objectives.

The idea of money as a motivator appears in its simplest

(1) Patton, A. "What is an Executive Worth?" McGraw Hill Book Company, New York, 1961. P. 67

form in the "classical" wage theories, but recent research by industrial and social psychologists has shown motivation to be very complex indeed.

This theses explores the extensive research into motivation of people in industry, in working groups and as individuals. The effect of the work organisation and the type of control, on the attitudes of employees are considered.

An attempt is made here to place the role of money as a motivator in perspective and to examine the perceptions of "equity". Recent empirical work in this field is used to show how salary administrative practices may be made more effective.

Various techniques of job evaluation have been developed for application at the level of the firm the industry and between sectors of the economy. These are considered since large organisations must have formalised procedures for salary administration and job evaluation techniques are used extensively to achieve this.

Some of the practices followed by Australian organisations are discussed and attention is given to the problems which arise in job evaluation-based salary administration schemes. The activities of Australian arbitral authorities and the Commonwealth Public Service are explored briefly in this light.

Finally, the results of surveys of salaries paid in Australia to employed graduates and to managerial staff are examined in detail. Salary levels and trends in Australia and the U.S. are compared. Some of the organisation patterns, salary review procedures and salary structures are considered in detail , since these appear to have important theoretical implications.

THE ECONOMIST'S THEORY OF WAGES

"The theory of the determination of wages in a free market is simply a special case of the general theory of value. Wages are the price of labour; and thus, in the absence of control, they are determined, like all prices, by supply and demand." (i)

It is argued that, given a fixed supply of labour and of potential employers, an equilibrium wage rate will be established at which supply and demand are equal. This equilibrium wage rate equals the marginal net produce of the labour force available in this particular market. Apart from explaining how wages would reach equilibrium, this theory also explains the mechanism by which workers would be encouraged to move from one part of the industry to another. Here a rise in the wage for any occupation or for a part of industry would tend to attract additional workers into this part, and this movement would lead to a tendency to increase wages in the low paying sector.

This argument suggests that wages, or more properly, the net rewards of all occupations, are constantly driven towards a common level. In competitive conditions "labour tends to move

(i) J.R. Hicks "The Theory of Wages" London MacMillan 1932, P.1

into industries which are paying the higher wages, until the wage-rate is the same in all industries (ii)

In practice, mobility throughout the industry is likely to be slow and incomplete, so that the equalising process will be obstructed.

Complete equality of wages also may not be obtained since the attractive power to prospective employees of two jobs carrying unequal rates of pay may be equalised by the existence of less favourable working conditions in the better-paid job.

Even so, it is important to realise that under this theory actual wage differentials are seen as mere imperfections in a system which should produce absolutely equal wage.

In its simpler form the theory does not make allowances for the effects of collective bargaining, but modifications have been introduced to do so. The usual approach is to regard trade unions as monopolistic organisations, which by controlling entry into the industry act as sellers of labour in a monopoly position. Here, although they cannot alter the equilibrium wage, they can, by withholding labour, lead to an increased wage for a smaller number of people.

Further elaborations have been made by economic theorists to handle union activities. Professor Hicks develops the theory that the policy of a union and the employer's response to

- (ii) J.E. Meade, "Economic Analysis and Policy" 2nd Edition, London, Oxford University Press, 1937, P.212

this can be determined by each side calculating the costs of a strike against the costs of increased wages. These calculations could lead to the balancing of the "employers concession schedule" (the amount of extra wages they will pay to avoid a strike of a certain duration) against the union's "resistance schedule" which is the other side of the coin. Hicks recognises that this is not even remotely likely to occur in practice and that there is no data to allow either party to construct a realistic schedule even if it wanted to do so.

However, he then goes on to show that the regulation of wages, either by collective bargaining or by legal measure is a self-defeating process. Long-run forces gradually ensure that unemployment occurs in the industry which has had this "unnatural" wage fixation.

The publication of the "General Theory of Employment, Interest and Money" in 1936 by J. M. Keynes impacted these classical theories of the general level of wages by showing that the equilibrium position of employment may be one which does not make full use of all available resources. Keynes argued that in conditions where there are unused resources an increase in general wage levels should stimulate consumption and increase the level of employment.

Under the classical treatment the general wage level and the

wage level for individual industries followed the same pattern, since each individual calling has its own equilibrium rate which equates supply and demand in that trade, so reflecting the marginal productivity of this class of workers. Since the repercussive effects of wage movements in one trade have only minor effects on the total purchasing power of the community and through this, on the level of economic activity, these can generally be ignored, so that the effect of Keynes on the traditional demand and supply theory is not significant in practice.

The most recent textbooks tend to adopt this pattern of analysis, perhaps allowing for more uncertainty about the actual effect of union activity upon the theoretical model. Mr. J. K. Eastham (i) treats the subject in this fashion, and then deals with possible consequences of monopoly by either employer or union. In addition he comments "the market for labour is so sectionalised and so full of elements of monopoly that the tendency to equality of payment to workers of the same type would hardly be very strong in the absence of trade unions. Indeed, trade unions probably have the effect of introducing equality of wages where differences in marginal productivities would otherwise exist". Since unions try to achieve national

(i) J. K. Eastham, "Introduction to Economic Analysis" London, English University Press, 1950 (P.206)

wage rates, they tend to reduce geographic differentiation for specific jobs and since they insist that all male adults performing the same job must receive the same rate they disregard the differences in the ability of individual workers.

Again, Professor P. A. Samuelson sees as important the need to understand the institutional forces which determine the absolute and relative shares of labour and other factors in the national income. He observes, "we must confess that there is no satisfactory body of economic principles that tells us a great deal about this subject.....The old view that artificial interferences with the order of nature cannot affect wages has long been abandoned. The opposite view that the average income of the working class depends only on the militancy and political power of trade unions is probably equally extreme and unacceptable. Within limits real wages can be affected by the process of collective bargaining. But although no-one can define the exact nature of these limits, they are nevertheless real."

The revision of the assumptions of the marginal productivity theory to bring the theory closer to practice appears to make wages so indeterminate that no useful explanation is possible.

The theory largely concentrates on demand, and it is necessary

to examine the nature of the supply of labour to the firm, to establish the effects of lack of information and other impediments to mobility and also the reactions of other firms to changes in wage rates.

As L. G. Reynolds (i) points out, "a given level of output is not associated with a unique level of costs and profits. With no change in factor prices changes in managerial effort may increase or decrease unit costs very considerably. The cost curve, for a decline in demand will usually bring pressure on management to lower costs, while rising demand will be conducive to cost increases." For short run analysis at the level of the firm, the theory is useless, and for long run analysis it may be largely indeterminate, since in practice the objectives of management appear to be quite complex and susceptible to many non-economic criteria.

SUMMARY

It appears that little will be gained by trying to develop a determinate solution to the problem of wage rates. Extensive empirical studies at the national level are helping to give some understanding of the important factors here. At the level of the firm, information is needed on the elaborate system of differentials which characterises wage and salary rates.

- (i) L. G. Reynolds "The Theory of Wage Determination" Editor J. T. Dunlop. MacMillan, 1957.

INSTITUTION ASPECTS OF WAGE FIXING

(a) Empirical Studies

Many American economists and social scientists are attempting to build up a meaningful approach to a practical theory of wages. Lloyd G. Reynolds (i) suggests that such a theory will be " a generalised statement bearing some resemblance to reality, of how money wage rates are determined and of how changes in these rates are related to changes in prices, output and employment."

Professor Clark Kerr (ii) of the University of California, in an extensive examination of the objectives of techniques of craft union officials suggests that wages are determined as follows:

1. "The wage is set by collective bargaining in response to many considerations, including economic ones.
2. "Demand, which changes constantly, determines the amount of unemployment at the fixed rate.
3. "Supply is constantly adjusted by the union to keep close contact with the changing volume of jobs offered by employers.

- (i) L.G. Reynolds, "The Theory of Wage Determination" editor, J.T. Dunlop, MacMillan, 1957. P.443
- (ii) Clark Kerr, "The Theory of Wage Determination" editor, J.T. Dunlop, MacMillan, 1957. P.445

He argues that for craft unions, control over supply is used more to preserve the integrity of the wage-rate than to create it. In this case he found that the demand, the wage rate and the supply of labour are all susceptible to some measure of control by the bargaining institutions.

Industrial unions operate differently from craft unions since the supply of workers cannot be easily controlled in the absence of compulsory unionism. These unions attempt to stabilise the demand for labour so that all workers with seniority rights may have assured employment. Here the impact of fluctuating demand falls most heavily on those in the least skilled jobs and those with less seniority.

"The institutional rules in the labour market, establish boundaries between different markets and make them more specific and harder to cross. They define the points of competition, the groups which may compete and the grounds on which they compete....It is debatable whether wage policies of unions and employers have much impact on wage determination. It is not debatable that institutional rules in the labour market do have sustained effects on the performance of our economic system. These rules increasingly affect both the opportunities held open to workers and the contributions which they can make to the national product." (i)

- (i) Clark Kerr, "The Theory of Wage Determination" editor, J. T. Dunlop, MacMillan, 1957, p. 456

The social scientist would readily accept this concept of institutional forces and would see the trade union, not as a monopolistic seller of labour, but as an institution representing a large number of individual sellers of labour. On this view, restriction of supply, except at the point of entry to the union, would not be an acceptable union strategy since the gains from the increased wage rates obtained would accrue to one set of members whereas a loss of employment would be experienced by another set of members.

Commencing on U.S. trade union wage policy, Professor A.M. Ross (i) points out that in pursuit of a uniform wage throughout their jurisdiction unions tend to throw away the gains they might make under "Discriminating monopoly". "There is little doubt that a union could achieve a higher average wage-rate and a greater total wage-income for its members if it were to extract from each employer the most that he could be made to pay.

(b) At the Union Level

Wage and salary rates in industry are determined in practice by three main methods. These are: collective bargaining, statutory regulation and arbitration. A recent study by Mr. H. A. Turner (ii) of English practices shows the way in which political aspects influence union wage objectives. Before 1914

- (i) A.M. Ross, "Trade Union Wage Policy". Berkley, University of California Press, 1948. P.46
- (ii) H.A. Turner, "Trade Unions, Differentials & the Levelling of Wages" The Manchester School of Economic & Social Studies, Sept.1952,P280

there was little collective bargaining on a national scale, but local groups negotiated separately on behalf of different classes of workers. These groups have gradually merged, and larger, more powerful, more national unions have developed. With this change, there has been another trend towards a narrowing of the wage differentials between skilled and unskilled workers. This appears to result from the merging of unions, and because such unity could not be based on disproportionate gains by one group, flat increases which do not raise contentious issues of preference have been favoured. Certainly, management prefers changes which are simple to administer and which do not upset existing relationships.

Where percentage increase claims are the rule, as in coal mining, and steel, the unions are concerned with highly specialised industries which operate on a basis of promotion from within, usually on seniority. This means that a steady job progression can be accompanied by a steady wage progression without fear of outside competitors affecting the top level positions. The pattern of salary increases sought by a union will clearly be significantly affected by internal "political" considerations.

Mr. Turner comments that wage relativities are increasingly
 (i)
 set "by neither the accident of the labour market (a dubious term) nor the conscious will of those involved. They derive

(i) Turner H.A. op cit. P.280

rather from the interplay of forces in the present structure of trade unions , collective bargaining and relations between people at work."

Barbara Wootton points out that economic theory must judge as "wholly accidental" the clash of forces between employers and unions, and the events in the lives of individuals and institutions which have contributed to the present structure. "These complexities, unknown to the psychology of economic theory, are the familiar stuff of political life in any of its forms." (i) The Australian developments in many ways parallel the English ones with greater emphasis here on the judicial arbitration structure. In both countries union organisations have been extended to include more and more non-manual workers. This means that trade unions now have extended their influence from wage areas into professional salary areas on an increasing scale, and today, the Australian Council of Salaried and Professional Association claims a membership of 250,000 people.

"In consequence, it is no longer true that trade union action, or collective bargaining is primarily an instrument for levelling up the incomes of lower paid workers. Although his freedom of action may be restricted by sensitivity to public opinion, the trade union or professional representative in wage negotiation

(i) Wootton, Barbara. "The Social Foundations of Wage Policy" London Unwin University Books, 1962, P.79

at EVERY level has a duty to get the best bargain he can for his members in all the circumstances of the moment (amongst which, the prevailing mental climate must be included). And his concern is with his own members and nobody else; that is what he is paid for. Should he permit the interests of some other group to take priority over the claims of those whom he represents he would, in fact, be open to just criticism for failure to fulfill the terms of his employment. It makes no difference that his own workers may already have attained the £1,000 or £2,000 a year class; his vigour as their champion must not be tempered by any regard for egalitarian policies".

The success in Australia of the Association of Professional Engineers in obtaining an award for graduate engineers reflects this growing industrial strength of the "white collar" unions. The Association initially approached the Commonwealth Conciliation and Arbitration Commission to obtain the award in this new field of salaried professional employees.

Following an extremely protracted series of hearings this award was granted covering all employers. Subsequently for the Commonwealth Public Service a series of managerial salary minima for engineers was established. Here the Association has ensured that its members shall run no risk of being affected by egalitarian tendencies. Such an approach should ensure

harmony within this particular union, even if it has major repercussive effects upon other unions and upon the use of resources within the economy.

(c) At the National Level

With the shift from wage determination based largely upon supply and demand considerations to the institutionalised techniques of collective bargaining, statutory regulation and arbitration, there has been a shift in power. At the same time, the need has arisen for the decisions reached by these means to be justified in ethical terms.

In the case of collective bargaining the unions in their role as spokesmen for their members, wish to indicate that their advocacy has resulted in wage justice for their members in situations where this has been denied them. When the claims are successfully rebuffed, the employers in their role as guardians of the economy point out that this is a fair and equitable result. The parties do not indicate that as a result of superior force, they have extracted or denied concessions. The claims are couched in ethical terms and the results are similarly made "legitimate" in terms of superiority of moral position. In this way, the claims of groups for preferential treatment are seen by their members, as being rightfully met. Members of the public however may be somewhat confused by these ritualistic role playing activities and accuse the parties of

insincerity.

Tribunals generally claim to base their findings on fair and reasonable considerations. Arbitration judges never appear to be in any doubt that their decisions represent wage justice. Initially in Australia the earlier rulings of the Commonwealth Court of Conciliation and Arbitration concentrated on improving the position of the unions as the weaker party in the struggle. However, the outstanding post-war economic phenomenon in Australia has been that full employment has been successfully maintained. A consequence of the resulting scarcity of labour has been the strengthened bargaining position of the unions. Throughout the period the only movement in wages has been upwards and the wage increases have made a contribution to the general inflation so that further wages increases become inevitable. Under the circumstances the Court has concerned itself largely with the maintenance of the status quo. In this context, the acceptance of the public interest as a third party has become more widespread and more important, although effective means of representing this interest have not been developed.

Probably the need for widespread economic planning, for agreeing a basis for resource allocation has lead to increasing emphasis on "wage policy" and in the Vernon report new emphasis was given to the probelm. Although initially rejected by the Government

such an approach is already gaining stronger support from "free-enterprise" elements.

Certainly the Commonwealth Government's submissions to the Court in the basic wage hearings have been heavily on the side of wage restraint and the need to control wage advances in light of the needs of the community. The unions have argued strongly for the need for wage increases to maintain real wages as the purchasing power of money declines. The controversy which attended the use of the "C" Series" Index and later the Consumer Price Index show the difficulties inherent in the preparation and use of such measures. Questions such as, the composition of the index, the dates for comparison, the need for change as community consumption patterns are modified, are all basically ethical in nature. The Court sees itself as administering justice - as balancing the needs of the two parties directly involved, with due regard for the public interest in the light of previous rulings and judgments. While the procedures are legalistic in form the assumption that wages and salaries "ought" to keep pace with rising costs is ethical.

In a period of systematic upward wage adjustment, the need for increases, had become publically accepted as the right to increases. The underlying economic assumptions are examined by the Court, but dismissed as being largely irrelevant to the

case. In Australia the determination to maintain standards of living has a direct and major effect on the setting of wage levels.

The result is, of course, existing relationships are maintained although changes in supply and demand are still reflected in the amounts of over-award wages and of additional overtime offered to scarce tradesmen. However, for the great bulk of fairly immobile workers, the periodic salary increases maintain their relative incomes in historic relationships and offer little scope for improvement.

The problem of whether to award flat increases in margins, which have the effect of reducing the percentages of differences between the top and bottom margins, or percentage increases which result in people getting very different cash amounts is, again, an ethical one. In the case of Awards for salaried employees in Australia a middle course has been chosen. As a result of the "Margins Case" brought by the Metal Trades Union, before the Commission in 1962, the fitters' margin was increased by 10%, which was equivalent to 10 shillings per week. While an increase of this order was not made automatic, most unions received it by application to the Arbitration Court.

It was contended that the "margins" in professional salaries, seen as the difference between the total salary and the basic wage, should be increased by ten percent. The Public Service

Arbitrator attempted to solve the problem by relating the increase to the total wage rather than to the excess over the basic wage.

Since the fitters' total wage increased by 2.5% as a result of the ruling, professional employees in the Commonwealth Public Service were granted increases ranging from 2.5% to 3.5% of their total wage. This percentage rises as the total wage increases, but the percentage increase over the margin, falls, or is "tapered".

This effect is shown in Table 3.

<u>Total Wage</u>	<u>Increase</u>	<u>New Wage</u>	<u>% of Total</u>	<u>% of</u>
£	£	£	Wage	Margin
1,431	32	1,463	2.23	4.7
1,571	37	1,608	2.30	4.5
2,231	64	2,295	2.87	4.3

The result is that while the fitter obtained an increase of £ 26 per annum, the experienced engineers' increase was £64. Both the fitter and the engineer could have grounds for feeling that in this case, justice had not been done.

In December, 1963 Commissioner Portus followed this procedure of "tapering margins" when dealing with the application for margins increases in the Bank Officers' case and this concept will probably be used when dealing with future adjustments, in order to convey "substantial wage justice".

The employers' case for a total wage instead of a basic wage

plus margin, put before the Full Bench in March 1964, was based in part on their desire to avoid percentage increases in the structure of professional and managerial margins whenever the fitters' margin over the basic wage is altered. On this view, "tapered margins" represent an approach which might lead to future conflict within the ranks of management.

Barbara Wootton observes (i) that "the practice of reckoning differentials as a percentage rather than an absolute basis appears to be yet another indication of the great weight given to social prestige in our wage and salary structure. It seems to imply that we are more interested in keeping our distances above other people than in the actual level at which our earnings make it possible for us to live. Standards of living can be reckoned in absolute quantities of bread and meat, and motor cars and holidays abroad, whereas prestige is inherently relative."

In 1957, in England, a Court of Inquiry into applications for improvement in wages and salaries for railwaymen by their unions examined the question of wage relativities with considerable care. It concluded that (ii) "the principle of relativity does not provide any secure criterion by means of which a decision can be reached as to the correct basis of comparison

(i) Wootton, Barbara. "The Social Foundations of Wage Policy" London Unwin University Books, 1962. P139.

(ii) Report CMD 8154 (1951) P.37

between different industries." Despite this rather dismal pronouncement the need still exists to make decisions on relativities in line with current expectation of wage justice.

SUMMARY.

National wage negotiation deals with ethical questions and attempts to maintain traditional relationships. When fixing margins, questions of prestige and status are also involved; thereby further complicating the decisions.

(d) At the Firm or Industry Level

Each firm, as an administrative organisation, generates its own body of policy, sets its objectives and approaches its markets within specified limits. These variables are sufficient to make each independent firm a unique entity with distinctive modes of action. In addition, its employees, particularly in the upper management levels form co-operating groups which establish patterns of belief and behaviour acceptable to the group and in reasonable conformity with the patterns of other groups and with the goals of the organisation. In this sense, the firm becomes a stable, self directing organisation, capable of adaptive behaviour in response to changes in the environment.

Although accounting concepts do not allow people to be valued

as assets, most managements see the need for doing this, even if this perception is sometimes limited to their own executive group. Generally, the claims of employees to a share in the net proceeds of the organisation are accepted but they must be reconcilled with the shareholders' claims as the legal owners. Relatively fixed beliefs about the firm's reward and recognition needs become embodied in its approach to salary administration. While these practices would be expected to vary fairly widely between firms, they must be above fairly definite lower limits, set either by law or by supply considerations, with the upper limits largely set by the profitability of the firm. The decisions of the managers of the firm on the uses for profits for dividends, growth via re-investment and so forth, will affect the amount allocated to salary increases for all types of employees.

It is unlikely in one view (1) "that executives will keep their salaries small in order to leave more for profits. On the contrary, the salaries of top executive will tend to get as high as the community will condone or as the conscience of the executive themselves will permit (and sometimes higher if the size of the remuneration can be concealed or "justified" by devices such as stock purchase options or other bonuses).

(1) Penrose, Edith. "The Theory of the Growth of the Firm". Basil Blackwell - Oxford, 1959. P.28

The total remuneration of 'top' executives in a large corporation will be such a small proportion of total profits that its effect on net profits has little practical significance and the executives know this."

An organisation requires people to do specified work and to accept the responsibility for the quality, quantity and timing of this work. On the shop floor this is usually covered by a written or unwritten job description and clarified by custom and by the supervisors. However, people are needed who will accept more responsibility, who will undertake difficult and degrading work, and here it is customary to pay increased amounts for those jobs which otherwise would have little appeal.

Within the hierarchy of the organisation structure, it is an almost invariable rule that the supervisor shall receive more salary than the people he supervises. This recognises the fact that status and income are viewed as closely related within a firm.

The giver of orders, who has a higher organisational status than the receiver of orders, must receive a higher salary. This ensures that the salary structure to a large extent mirrors the organisational structure. Since the organisation wishes to stress these distinctions, salary levels between successive grades of supervisors tend to increase sharply.

The salary structure needs to be fairly easily understood, particularly at the lower levels and needs to be acceptable to the people involved since it acts as a form of job recognition and also as a status system. A formal system has considerable advantages since it can be easily communicated and administered. Over a period of time, such a system can acquire considerable stability through usage. At the same time, the system must be capable of responding to changes in the environment. Since the firms will need to recruit some people who are in short supply it must keep up with changes in its own pattern of needs. (1)

Firms tends to look outwards at the other firms which help to make up their industry. In this way an accepted pattern of relativities becomes consolidated and widespread. We have previously discussed the role of unions at the national level and their operations at the industry and firm level ensures that national minima are observed and that traditional patterns are maintained.

The firm has a need to be able to provide employees with incentives to perform at higher levels. Usually regular salary review, promotions, systems of incentive payment, commissions, bonuses and forms of non financial rewards are established to meet these needs. The unions traditionally oppose most of these

(1) See Barnard. C. "The Functions of the Executive" Cambridge: Harvard University Press, 1938.

since they result in a large proportion of the pay packet being outside the unions' direct control. Those schemes other than measured work incentives, accordingly are more common at the specialist and managerial levels where the scope for major improvements in individual contribution is greater.

In meeting these requirements, within the limits of available funds, it is not possible for the firm always to operate so as to minimise salary payments. Long term requirements and the complexity of the operations must lead to satisficing rather than maximising behaviour.

SUMMARY

An organisation's perceptions of its objectives sets up the need for a specific salary policy. It adopts a balance of policies and procedures for salary administration which appear to meet its needs, and these have many characteristics in common between firms since they are based on the needs and responses of people and the scope for action is limited by the environment. In general, while economic criteria are important, they are not the only criteria operating in the salary administration area.

SUMMARY OF SECTION I

Attempts to explain the determination of wages as a special case of the theory of value, have been unsuccessful, as the extensive structures of wage differentials cannot be explained in economic terms. Empirical studies suggest that the demand for labour, the wage rate and the supply are all susceptible to some measure of control by the bargaining groups.

The actions of these groups can be explained in institutional terms and each union appears to be involved in maintaining internal cohesion by pursuing the agreed goals of its members with little regard for repercussive effects on other unions or groups in the community. The rules adopted by the bargaining institutions and unions, increasingly affect the opportunities open to workers and employers and so may affect the patterns of resource allocation at the National Level.

The procedures which have been developed, largely ignore the existence of the public as a third party, and deal with non economic questions of an ethical nature, and with considerations of prestige and status. The status quo appears to be adequately protected, but there is little provision for making rapid changes in the traditional relationships when the need arises.

The firm, as an adaptive organisation with specific objectives accepts certain attitudes to wages which are consistent with

these objectives. These attitudes determine salary structure, and define the firms responses to attempts to alter existing relationship while the lower limits will be set by the law or the market, the upper limits will depend on the current and anticipated financial position.

There is a need for much empirical investigation of the way in which wage rates are determined and how changes in these are related to changes in prices, output and employment. While determinate solutions cannot be obtained, it may be possible to establish the important factors, and the way in which these interact. Such studies on a wide basis may be an important prerequisite for effective national economic planning.

SECTION II - MOTIVATION

Motivation of Working Groups

It is a commonplace thought that people work for money and that by controlling the conditions under which financial rewards are administered, the organisation can obtain the active co-operation and service of the people it employs. Salary administration text books typically commence with an introductory page in this view and then move on to the detailed techniques used by practitioners.

Investigation reveals that the psychology of motivation, although of major importance to our institutions and to business in particular, has until lately, been a neglected field of research.

In the Nineteenth Century a basic economic assumption was that money was a direct motivator and that people would act rationally in an attempt to maximise their net incomes and that economic man, as a maker, bought and sold in the best market, while as a worker, he sold his labour at the best available price.

Personnel administrators in this century have sought other means of motivating employees and numerous fringe benefits have been designed with the hope that improved morale and satisfaction would provide positive stimulation for the worker to improve his productivity.

The series of studies carried out by Elton Mayo (i) and his colleagues at the Hawthorne works of the Western Electric Company were particularly important in breaking the old pre-conceptions. These studies showed the positive effects on worker output when supervisors took an interest in the employees as individuals. The identification of an informal organisation of employees into work groups led to a fuller understanding of the social and cultural aspects of work.

While Mayo suggested that the men naturally gathered into these groups as sources of primary satisfaction, later work by Schachter (ii) suggests that these groups may result from dissatisfaction with the job itself. He suggest that affiliation into informal groups is a way of adapting to a type of work organisation which depersonalises the individual and regards him as a pair of hands. In such a group everyone is a victim of the system, and so there is no blame on any one individual for his defeat. The group is, in this sense, not the result of "natural" gregariousness, but is largely a defensive reaction and a symptom of basic dissatisfaction with a depersonalised work environment.

Investigations by Abraham Zaleznick and his co-workers from

- (i) Mayo Elton - "The Social Problems of an Industrial Civilisation" Harvard Business School - Boston 1945.
- (ii) Schacter S. "The Psychology of Affiliation" - Stanford University Press, Stanford, California, 1959.

the Harvard Business School (i) into the informal group and its impact on productivity have shown management to be relatively impotent to motivate in the long term any of the men, whether regular group members or high or low producers. Acceptance of the group was the key motivator, even for non-members and the price of membership was conformity to the group norms which included an indifference to management. They concluded that the "rate busters" were not responding to the efforts of management to raise the level of output, but were flouting the values of the group which excluded them.

The Harvard group point out that management's plans for workers in routine jobs are based on the assumption that workers will need to develop little more competence of accept more responsibility than they do at present. If growth on the job, in terms of increased skill and responsibility, it is not perceived by management as a probability then the situation just described, appears certain to continue.

Following Mayo, Rensis Likert, (ii) of the Institute for Social Research at Michigan has also questioned the "traditional" theory of management. His work suggests that management has been entirely too logical, too pre-occupied with tangible results

- (i) Zalesnick, A., Christenson, Roethlisberger F: "The Motivation Productivity & Satisfaction of Workers! A prediction Study" Harvard Business School, Boston - 1958.
- (ii) Likert, Rensis F - "New Patterns of Management", McGraw Hill Book Co. Inc. New York - 1961.

and afraid to deal with people as individuals. In Likert's view, management has been trying to buy co-operation and industrial peace with a variety of wage and benefit packages and incentive schemes, without providing the supportive, non-intrusive leadership which will allow people to perform at their best.

On this argument, supervisors are seen as people who facilitate production by providing resources and services, by arranging supply of materials and by co-ordinating the work between different departments. The workers provide the control of their own special operations as self-disciplining groups who achieve self-respect by meeting the agreed targets.

It is clear that at the shop floor level many investigators have concluded that the methods of organising work, controlling output and supervising performance are such as to provide little real participation and little chance of satisfaction from the job itself.

One of the most sophisticated studies to date in the field of work motivation was by Frederick Herzberg and his colleagues at the Psychological Service of Pittsburgh, (1). They interviewed two hundred engineers and accountants selected at random from within nine companies operating in the Pittsburgh area. These

(1) Herzberg, F, Mausner, B., and Shyderman, B., "The Motivation to Work". New York - John Wiley & Sons Inc. 1959.

people occupied managerial positions, or else functioned in fully professional roles. They were asked to recall work incidents they had recently experienced which made them feel particularly good or particularly bad about their jobs. They were also asked to indicate what effect these incidents had on their performance and attitudes and whether these effects were of short or long duration.

These investigators wished to examine as a whole, the factors which affect a person's attitude to his job and to relate these changes in attitude to changes in his job performance. Their criticism of the previous work was that it had only looked at isolated aspects, rather than seeing the factors, the attitudes and the effects as an inter-related whole. They realised that the recollections might be incomplete, but expected that a skilled interviewing technique would provide a check on the content so that the significance of the episodes could be assessed.

The results showed that when these professional employees felt good about their jobs it was usually because something had happened which showed them that they were doing their work very well or that they were becoming technically more proficient. They most frequently stressed the challenge of the job itself, their feelings of responsibility, and professional advancement as leading to long-term positive changes in job attitudes.

These in turn, they claimed, led them to become more creative and productive in their work. Output was usually increased and the quality of their work appeared to them to be much better.

Recognition by others for good work caused fairly short-lived positive feelings, whereas being assigned to stimulating work being promoted to positions of greater responsibility lead to positive feelings which were much longer lasting.

They appeared to be highly achievement-oriented, obtaining satisfaction from doing first class work and more strongly stimulated when their performance was recognised. These factors of the work itself, feelings of achievement and recognition were the positive motivators and were related to success in work and to individual growth.

When they felt bad about their jobs it was usually because some disturbance in factors such as fringe benefits, security or working conditions caused them to believe they were being treated unfairly.

The investigators concluded that there was a clear distinction between these two sets of factors. Those that uplifted performance and had a favourable effect on job attitudes they classed as motivators. Those which served to prevent a falling off in morale, or efficiency, they classed as hygienic factors. It was clear that while the hygienic factors were necessary

pre-requisites for effective motivations, improving the level of pay, security and working conditions would not motivate these engineers and accountants. Essentially hygienic factors are concerned with the environment in which the job is carried out and, provided these are maintained at an adequate level, the true motivators can become operative.

Poor supervisory practices and communication which did not keep people informed of management's goals and policies led to discouragement. Improvement in these factors overcame this but did not of itself motivate the men. It appeared from analysis of the comments made, that salary in recognition of performance provided powerful motivation, but salary unrelated to performance only served to reduce dissatisfaction without increasing motivation.

For these professionals, the "human relations" approaches suggested by the earlier investigators seems to be of hygienic rather than motivational value. Apparently the existing job environment was generally adequate, so that improvement here would not result in any exciting developments. These would spring from the freedom to exercise initiative and ingenuity, to experiment and to handle the problems of their jobs in their own way and from more challenging and responsible work. Control of their own work and the nature of this work rather than the tangible rewards, were the motivators.

It is apparent from this that poor hygiene will lead to dissatisfaction and that improvement, up to a point, will result in job satisfaction but will not motivate. The motivators on the other hand do not appear to be so limited and as they become present in greater quantity, so the individual's motivation is improved.

The engineers and accountants, when they felt better about their jobs, put more care, imagination and creativity into their work. When they felt negative, they did not consciously go slow, but treated their work more routinely and worried less about fine details. Here we have a form of restriction of output amongst professional and managerial workers which, while real, will not necessarily show up in the production statistics. Their company could benefit from their ability to do work of excellent quality only when the correct motivators were present.

Herzberg's approach was repeated at Texas Instruments (i) with a wider range of professional and managerial employees. The results for scientists and engineers were very similar to those obtained in the Pittsburgh study. Manufacturing supervisors were less achievement oriented and heavily motivated by possibilities of advancement and responsibility, "reflecting

- (i) M. Scott Meyer. "Who Are Your Motivated Workers" Harvard Business Review January - February 1964. P. 73

a higher aspiration toward success through administration than was apparent for scientists -- pay for these people signifies success or failure, and in terms of the duration of the feelings, is more potent as a dissatisfier than as a motivator."

With the non-graduate electronic technicians, responsibility and advancement are by far the most important motivators.

"Since most hourly paid technicians feel they have little opportunity to advance and experience a sense of responsibility, the impact of these factors when they do occur, is substantial.

The hourly man, usually not a college graduate, tends to see himself in a supportive role doing the unpleasant and uninteresting tasks which professionals choose to avoid.

The importance of the work itself as a dissatisfier reflects the hourly paid man's contention that he gets stuck with the dirty work. The competence of supervision factor, which refers to the supervisor's skill in planning and organising work, to his delegating practices and to his impartiality, emerges as a potent dissatisfier. Even at this level, pay, while an important factor, still functions more as a dissatisfier than as a motivator."

It appears that as the possibility of original, independent and creative work is reduced; as the work becomes more standardised and repetitive and dependent, there will be a shift of

emphasis. The factors which are important at each level will be those which represent the boundary conditions of the job. When the possibilities of achieving self actualisation from the job become less likely and more remote these are not as frequently perceived as motivators. However, when experienced, they are valued very highly, so that the motivators listed by the professionals may be applicable to a very wide range of employees.

INDUSTRIAL MOTIVATION

Incentives and Achievement

Social scientists from Cornell University under the guidance of William F. Whyte (i) have spent months as worker-observers in industry. They have observed at close range what happens when money incentive schemes are introduced.

The increases in output which usually follow the installation of incentive schemes have been used to "prove" that most workers are motivated by money and that they will respond directly to such a chance to increase their incomes by producing more.

Whyte's observers point out that there are at least three other likely factors which singly or together could have had as much an incentive effect as the money.

Firstly, having a daily output target at which to aim can add interest to a job and Whyte's observers were struck by the game-like quality of many comments made by workers about their production records and of their success in "beating the system". Provided the target is set at a high, but not impossible, level this may provide the stimulus and interest needed to improve output.

Secondly, there seems to be an optimum working pace for many jobs and when the work is performed at this tempo less fatigue

(i) Whyte, W.F. "Money & Motivation" - Harper & Row Publishers Ltd. New York - 1955.

is experienced than at erratic or unnaturally slow speeds.

It is easier to maintain this unconscious rhythm than to deliberately and consciously adjust the pace. This factor would reinforce the first and lead to new levels becoming routinised.

Thirdly, making quota may be seen as the price of gaining immunity from the supervisor and Whyte's observers saw many cases where workers seemed to take special delight in conspicuously flouting some minor rule right under the foreman's nose, when they were producing their quota. In many cases, marked improvements in working methods, and particularly in planning and flow of work are made when incentives are introduced. The supervisor's responsibilities alter considerably and he must be able to keep work up to his people. Delays which would previously have been accepted as occasions for social activities then appear to provoke criticism of the work organisation and much of the improved output may result from improved efficiency in such managerial tasks as planning and organising the work together with a reduced emphasis on maintaining discipline.

In every occupational group there are people whose response to financial incentives is direct, positive and predictable.

Whyte has attempted to estimate the percentage of production workers who fall into this class. From the ratio of high producing "rate-busters" to low producing "restricters"

he estimates that about ten percent of U.S. production workers will ignore group pressures and produce as much as they can in response to a monetary incentive scheme. For the remaining ninety percent, if there is any reaction at all, it is usually one of resistance to such schemes.

It is probable that people to whom an incentive plan would have strong appeal would tend to seek employment outside the production area where there would be more scope for their preferences for direct reward. In fields such as selling, the widespread use of incentives and their ready acceptance suggests that such a shift does occur.

Research by David C. McClelland and his group from Harvard University (1) into the use of the Thematic Apperception Test to explore the "achievement motive" helps to explain some of Whyte's results. They found that people who have a strong personal need for achievement will respond directly to appeals to work harder and will set heavy demands on themselves to achieve their goals. While not spurning tangible rewards, they seem to make accomplishment an end in itself and respond more strongly to the challenge than to the reward.

McClelland argues that the profit motive, in so far as the highly achievement-motivated person is concerned, has been

McClelland, D. "The Achievement Motive" (Atkinson J.W. and Clark, R.A. and Lowell, L) - Appleton-Century-Crofts Inc. N.Y.'53

misunderstood. He sees it as a necessary and objective measure of success in accomplishing difficult tasks and winning. To these people, accomplishment plus profit would have much more appeal than would a safe and easy profit by itself.

In effect, the achievement-motivated man appears to co-incide with the classical entrepreneur, except that he is not motivated by the chance of earning a profit, but by the challenge offered. Apart from this, he is the man who will optimistically tackle the challenging and the new; who will balance his risks carefully and drive strongly to his objectives without expecting lucky breaks.

In the professional groups studies by Hertzberg, a moderate amount of achievement motivation would be essential merely to qualify for employment. The key motivator was found to be a sense of personal progress and professional growth. This seems to correspond closely to the enjoyment of concrete feedback and striving to meet a job challenge which McClelland finds to be characteristic of the achievement motive.

SUMMARY.

It seems probably that what may be broadly termed "self¹ actualisation" provides the major motivation for professional and managerial employees. It appears that these people will largely respond to challenges connected with their work and

and will seek feedback in the way of financial recognition to indicate success. Money in these cases does not appear to be a prime motivator, but an important indicator of success.

Money as a Symbol

It is apparent that people are motivated to different degrees by money, and that this effect may vary with time. Any theory of money motivation must deal with the fact that for some people money is everything all the time, for others money is very important only some of the time, and for still others, money means very little at all times. Money can motivate in its own right or can provide the feedback system through which other motivators operate. In some situations monetary rewards can be completely impotent and in others, they can be extremely effective.

Money serves a rational economic purpose in our community, and it functions as a store of value, a means of exchange and a system of pricing.

Since money has no intrinsic meaning of its own, each person can place his own meaning on money. It therefore can come to represent whatever that person desires, and as a symbol for these intensely individual desires, it functions as a motivator.

Money has a purely economic function in those primitive

communities where few money transactions occur, and those that do represent the exchange of labour for a few simple commodities. Despite the fact that additional money could be earned, these people tend to work only long enough to purchase a few bare essentials. Here money's motivating power is minimal and it has little strength as a symbol.

Only when changes in status, security, or comfort are perceived as feasible and worthwhile does money begin to symbolise these intangible goals and so begin to acquire the power to motivate. In Rostow's "traditional society" the uses of money are very limited and only as the breakthrough occurs are the social possibilities confronting individuals opened up sufficiently to make accumulation of capital a worthwhile objective.

People who have little or no money are not necessarily those who are "hungry" for it. What they usually need is an assurance that their services will continue to be needed in the future and they usually act so as to make sure this level of demand continues, rather than to maximise present earning power.

As people begin to accumulate capital, this in turn affects their expectation of the future and their attitude to present income. Young professional men entering the market are often strongly money motivated, since they see the additional income as having a great effect on their standard of living. Here

an extensive system of needs has been generated and a fairly direct response could be expected.

The drive to earn more money and to increase standards of living appears to be subject to diminishing returns. Material desires for most people do not continue to multiply over long period of time and the direct economic motivating aspect of money is gradually reduced. The emotional effects continue to be important as material needs decline for most, but not all people. That is perceptions of money becomes increasingly irrational as initial material needs are progressively satisfied and in an affluent community, the potency and significance of money motivation declines.

In the case of highly paid executives where over half of additional earnings are lost in taxation, salary increases must still be given since they serve as feedback on performance and also recognise performance and attest to their status. This money serves almost completely non-financial ends and yet for these reasons, may provide intense motivation for these people.

For any one person it is apparent that the rational and emotional components of the money motive will vary in importance throughout his lifetime. Saul Gellerman (1) summarises the

(1) Saul Gellerman - " Motivation & Productivity " - American Management Association - Vail-Ballou Press Inc. U.S.A.

situation when he observes that "In a sense a man's reaction to money summarises his biography to date: His early economic environment, his competence training, the various non-financial motives he has acquired, and his current financial status... like the psychologist's inkblots, money is an essentially neutral object, which each man interprets in terms of his own habitual ways of thinking about the world, and his relation to it."

The Perception of "Fairness"

Recent investigations by psychologists and by social scientists throw some light onto the important question - How does an individual judge the fairness of his salary?

- (1) Patchen's studies show that individuals select as "reference groups" people whose salaries are readily available. These include neighbours, relatives, friends and also people whose salaries are published, such as government servants. Some are chosen because they represent a status level which he feels he should equal or exceed, such as schoolfellows or employees of equal seniority. In each case, he seeks out specific information as feedback on the critical question of how his superiors value his worth and whether this agrees with his own estimate.

- (1) Patchen, M. "The Choice of Wage Comparisons" Prentice Hall New Jersey - 1961. Page 106 et seq.

This is a type of unstructured salary survey which has important defects. In some cases the reference positions are irrelevant and could not reasonably be filled by the individual. Again, hearsay, inference and even guesswork may be used to arrive at salary levels for these positions. His conclusions will be biased upwards by his own estimate of his ability so that some degree of discontent is certain to exist even in someone who is being clearly paid at the correct market rate.

Accordingly, the market price for a person's job lags behind its "ego price". It is important to realise that in an institution sense - organisational custom, the unions and the law - arrived at a working compromise so that the market price for a man's services is a compromise between its "ego price" and the price determined by supply and demand.

The wage market has been made to conform to the way in which self concepts function rather than the contrary.

The action that any individual will take, as a result of conclusions reached from his judgment of the fairness of his pay, will be determined by his perceptions of the world about him. Whether or not he sees himself as capable of influencing events - of having some measure of control over what happens will be of prime importance. So will his perceptions of the rewards offering, as being generous and easily won, or

being inadequate and hard to get.

Managers are people who are in the habit of controlling their environment. They act upon it and expect to bring about important changes. They usually have good expectations of reward and can be expected to take action to obtain the rewards they believe to be rightfully theirs by the means within their control. The individual follows a strategy which is consistent with meeting the threats, challenges and opportunities of the world he perceives about him. He seeks his maximum advantage where this is not defined in exclusively economic terms, but in rational plus emotional terms.

Financial advantage makes sense in some, but certainly not all environments, and so people will formulate strategies which eschew economic gains and favour some types of emotional support.

"The monetary theories of motivation have lost some of their credibility because they tried to generalise the entrepreneur's perception of his world, to the employee's perception of his; they failed to recognise that in a psychological sense, there are many different worlds in one company." (i)

(i) Gellerman, S.W. "Motivation & Productivity" -AMERICAN Management Association - Vail-Balrow Press Inc. U.S.A. P.198.

PSYCHOLOGICAL RESEARCH ON PAY

Recent work at the Institute of Industrial Relations at Berkeley by Mason Haire, Edwin Ghiselli and Lyman Porter has been aimed at "the psychological problems underlying pay." (i) These people see three relatively distinct areas, involving motivation, perception and social psychology, where little of the ground work has been done.

They point out that the manner in which pay operates as an incentive is quite obscure. We do not know the affect of different frequencies and sizes of pay increases on productivity when they are accepted as form of recognition.

In the perception area, the relative values placed by people on pay versus additional benefits is not known. The effects of perceived pay inequities is obviously one of the important unresolved issues here. Again, if the preconceptions about pay vary with management position, age etc., then this is important information for effective salary administration. In the area of social comparison, we need to find out the comparisons made by different groups and the method by which salary equity judgments are made.

One recent investigation by J.S. Adams (ii) threw some light on the behaviour of people who believe they are being overpaid.

- (i) "Psychological Research on Pay: An Overview" - Industrial Relations Vol. 3, No. 1 October 1963. (A Symposium)
- (ii) Adams J.S. - "Wage Inequities, Productivity & Work Quality" Industrial Relations, Vol. 3, No. 1 October 1963.

Two randomly selected groups of students were asked to conduct interviews after being informed that the rate of pay was standard for people with their acceptable level of qualifications. One group was paid at an hourly rate and the other at a piece rate. Two other groups, also paid at hourly and piece rates were "accepted" with great reluctance as being inadequately qualified for the work. It was made plain that they were not really worth their pay. It was found that "inadequate" hourly workers had a higher mean productivity than their controls, whereas the "inadequate" piece workers had a lower mean productivity than their controls.

In terms of the theory of perception prepared by Leon Festinger (1) a person experiences emotional stress when his perception of a situation gives apparently irrational and contradictory results. Those people who were convinced that they were unqualified for the task, on this theory, would try to reduce their dissonance by refusing to accept the going rate for qualified people. Those on hourly pay could only do this by working harder so as to do more work per hour, whereas those on piece rate could do so by spending more time on each item of work, and so earn less money. The results were as predicted by this theory.

In a modification of this experiment the quality as well as amount of work performed was measured and here again piece workers who

- (1) Leon Festinger: "A Theory of Cognitive Dissonance" Evanston, Ill. Row, Peterson - 1957.

perceived their pay rate to be excessive for their skill level performed at a lower productivity than those paid at the same rate who perceived themselves equitably paid. In addition, the "inadequate" people significantly improved the quality of their work over that done by the adequate people, presumably in an attempt to do a more "worthwhile" job.

In these experiments, in their attempts to reduce their dissonance, people have behaved so as to earn less, while applying more effort to the job. This clearly contradicts the usual assumption that people behave to maximise their gains and minimise their efforts. The results give some indication of the complexity of human response to incentives, and show the need for much additional work here before we have a workable theory.

(a) Perceptions of Pay Levels and Satisfaction

Lawler and Porter (1), found that managers had realistic appreciation of their present pay levels as a result of the external and internal comparisons made. Based on these salary comparisons, managers formed definite ideas on what pay they should receive for their job. Those who were in fact the most highly paid at each level felt that this was the case and they attached less importance to pay than did the less highly paid managers.

- (1) Edward E. Lawler III and Lyman W. Porter: "Perceptions Regarding Management Compensation". Industrial Relations, Vol. 3 No. 1 October 1963.

While the highest paid groups at each management level were not completely satisfied, these managers claimed to be better satisfied about security, autonomy and esteem than were the lower paid members of the same level. It appears that salary is being accepted as a means of recognition and the perceptions are related to the extent of the recognition and its appropriateness. Apparently when the manager considers himself to be equitably paid, he is least dissatisfied, is appropriately recognised and sufficiently free from doubts to be able to work at his highest levels of productivity.

They found no differences between line and staff managers at the same level and receiving the same pay, in reporting different satisfactions with pay.

In their paper "Management Attitudes Towards Pay", Andrews and Henry (i) examined the effects of anticipated pay increases. They found that people expecting a large pay increase over the next five years tended to be younger, better educated and relatively highly paid, but less satisfied with present pay levels. They considered the strongest motivation for outstanding job performance was "promotion". Those who expected smaller pay increases believed their strongest motivation came from "doing a good job for its own sake", and placed more emphasis on seniority. They

- (i) I. R. Andrews and Mildred M. Henry: "Management Attitudes Towards Pay" Industrial Relations Vol. 3 No. 1 October 1963.

were less willing to risk security to gain increased pay and more inclined to view the "top managers" salary as being adequate.

These findings suggest that for individuals at a stage of high upward mobility, present pay is evaluated at least partially in reference to an aspired-to position and pay level, rather than strictly in term of the appropriateness of pay for the present position. This is consistent with Patchen's findings that upwardly mobile, non-management refinery workers were "More likely than others to choose presently dissonant comparisons and more likely to be presently dissatisfied with comparisons". It ~~seems~~ probable that where effective incentives are operating, some measure of dissatisfaction with present pay levels should be found.

Pay and Benefit Preference has been examined by Nealey (1) who found that a low morale group of employees tended to prefer pay to benefits, whereas the high morale group was willing to go along with the Company in various forms of deferred pay-out such as pensions and hospital plans. Apparently changes in morale will change the values people place upon a given benefit package. Certainly the evaluations made by both wage and salary earners vary with age, marital status, etc., so that the choice of a company benefits package is very complex.

- (1) Stanley M. Nealey: "Pay and Benefit Preference" Industrial Relations, Vol 3, No. 1 - October 1963.

Given this degree of variability, it would appear a better solution for people to be allowed to choose from among equal cost benefit items so as to maximise their own satisfaction rather than use a common benefits package for all employees.

(b) Pay Comparisons

In the area of social comparison, the question of standards used by people to determine when pay is equitable is a critical one. Andrews and Henry (1), in an investigation of management attitudes to salary, found that the degree of pay satisfaction increased steadily with increase in management level (and hence total pay). However, beyond the salary level of \$10,000 per annum there appeared to be little change in the percentage who were dissatisfied, but those who considered their pay to be average decreased.

At this salary level also the responses to the disposition of a hypothetical 20% pay increase, changed markedly and were less focused on repayment of debts.

These results appear to be consistent with Herzberg's findings in that the improvements in pay attitudes up to \$10,000 for this group were of greater consequence to the enhancement of overall feelings about the job than the improvements after this. From

- (1) I. R. Andrews and Mildred M. Henry: "Management Attitudes Towards Pay" Industrial Relations, Vol. 3 No. 1 October 1963. Page 29.

this stage there appeared to be less emphasis on the reduction of a perceived salary deficiency, and more emphasis on other elements of compensation.

Another result of interest was the 67% of the management sample said that they would take a pay decrease to obtain an increase in feelings of worthwhile accomplishment.

They also found that lower management groups tended to make comparisons within the firm whereas a higher level management group more frequently chose outside reference groups. Again, as a man's education increased, he was more likely to compare his pay with that paid by other employers.

Managers who considered themselves underpaid were more likely to be unhappy over too small a differential between their pay and that of their subordinates than over a too large differential between their own and their manager's pay. The importance of outside pay comparisons was indicated by the result that people in a good relative pay position within a low paying company were less satisfied with pay than people in an average pay position in high paying companies. A good relative pay position did not compensate for inadequate pay levels within a particular company, so that both external and internal comparisons are important.

(c) General

D. R. Roberts observed (1) that the \$100,000 president is not

- (1) D.R. Roberts "Executive Compensation" Free Press Glencoe, 1959, P.161

more strongly motivated than the \$75,000 president, if the relative profitability of their companies is accepted as the measure of motivation. Again, payment of bonuses did not achieve this result, since the firms which did this were not more profitable than those paying straight salaries. In the latter the amplitude of fluctuations in salaries paid showed much less variation and it is possible that a very moderate range of salary fluctuations provides adequate incentive and that the firm gains nothing by making life more uncomfortable for its executives.

It is clear that empirical research is beginning to clarify the psychological and social aspect of pay and so make effective salary administration, with reward related to sustained performance a possibility. The work in this area is only at its beginning and a major expansion is needed if salary administration practices are to be based on proper data rather than hunches.

SECTION II - SUMMARY.

Over the last forty years psychologists and social scientists have explored the man, his job and his working group to find better ways to operate business organisations. The early enthusiasm for the human relations approach has been tempered by unpredicted responses suggesting that the problem had been oversimplified.

Recent investigations have emphasised that much production work is so organised and standardised and controlled as to provide little real sense of achievement for the workers.

Professional workers are strongly motivated to peak performance when the job itself offers challenge and scope for self-actualisation. They perceive money as a "feed back" which confirms and justly recognises their achievements.

Production line workers respond similarly, but since they expect less job independence, are motivated by what they perceive as an increase in opportunity to advance and to be treated as responsible people. Even at this level, pay functions more as a dissatisfier than as a motivator.

Clearly, there exists very real scope for improved productivity in industry, not through treating the worker as a human being, but by proper job design, more advanced training and recognition of achievement. Evidence from incentive studies suggests that improvement has been obtained from such changes and from a shift of emphasis from direct supervision to a more supportive management role.

The drive to achieve appears to be widespread and leads individuals to respond to challenge and to seek feed-back on performance.

To the individuals, money appears to provide a ready symbol for his hopes and his fears. When a man sees that money can buy increased need-satisfaction, it begins to symbolise this, to

allow long term goal seeking and in turn, acquires the power to motivate him. With increasing affluence, its force declines and for experienced skilled people may serve largely non-financial ends, such as recognition and confirming status and prestige.

Recent psychological research on pay, serves to strengthen these suppositions by indicating that people have very definite perception of the amount of pay they should receive for their present jobs. Those who are upwardly mobile tend to compare with their anticipated earnings in their aspired-to jobs and accordingly show more dissatisfaction with the present.

There is ample scope for empirical research here, since we have at present, no clear indication of the amount of pay satisfaction expected in a strongly achieving group and how much incentive pay is needed to provide the best level of extra effort. It is possible that the difficulties lie in "definition" of the goals which are to be achieved and to which individuals can make a clear contribution and to measure this contribution with equity.

SECTION III - JOB EVALUATION

Introduction

Usually the wages to be paid for a particular job are determined by the employer, unilaterally, or by collective bargaining or in relation to a legal framework set by wage fixing or arbitration.

In each case, the employer is basing a management decision on the requirements of the work organisation and working methods as he perceives them. While the other parties may enter into the decision, the employer will still attempt to obtain the structure of rates which he regards as necessary for his profitable operation.

As the International Labour Office (i) points out in its report on Job Evaluation, large "undertakings are now generally recognised to require an established wage system, if only as an administrative device. Employing large numbers of workers, they have to have some rules for paying them. Otherwise, estimating and controlling costs would be a very difficult task. Nor would the firm be assured that it could recruit and retain the manpower it needs. Again, the administrative work of calculating people's wages would be very complex and difficult,, "

- (i) International Labour Organisation. Geneva. Studies and Reports No. 56. P. 6.

It is basic to such an administrative system that rates are fixed for jobs and not for individuals. Since many people, performing hundreds of different jobs, must work together in a closely co-ordinated system in a large firm, individual jobs must be precisely defined and workers whose jobs are inter-related must follow common rules on the job to facilitate co-ordination. Under these conditions individuals rates of pay should be identical where identical work is performed. This leads to the existence of the "rate for the job" concept, and this is reinforced by the needs of collective bargaining and of arbitration for a systematic approach.

In many industrial jobs the skills required in new recruits do not differ greatly between jobs, whereas differences in what must be learned on the job, and on the responsibility, effort and nature of the work, have become more important. As a result, these other requirements have become important in establishing wage relativities. G. W. Taylor (1) observes that "while skilled craftsmen may be said to be paid in accordance with what they are able to do, semi-skilled and unskilled workers tend to be paid according to what they are actually doing".

As working methods or job contents are altered, problems arise in deciding the wage rates which should apply in the new

(1) G. W. Taylor in "New Concepts of Wage Determination" op cit P.93 (Also see E.R. Livermore and J. T. Dunlop in this publication.)

situation. Both management and unions often have to spend time in settling claims and disputes over wage differentials which no longer appear to correspond with changed job relativities.

Various techniques of job evaluation have been developed to provide a more "systematic and objective basis for the comparison of job contents as an aid in the establishment of a more rational wage structure."

Job evaluation has been defined by the U.S. Department of Labour in its "Glossary of Currently Used Wage Terms" as "the evaluation or rating of jobs to determine their position in a job hierarchy. The evaluation may be achieved through the assignment of points, or the use of some other systematic rating method for essential job requirements, such as skill, experience and responsibility. Job evaluation is widely used in the establishment of wage rate structures and in the elimination of wage inequalities. It is always applied to jobs rather than (to) the qualities of individuals in the jobs." (1)

The International Labour Report stresses that "wage earners, like most other people, have strong feelings about the 'fairness' or 'equity' of relative wages, this being judged normally on the basis of comparative job contents. A wide-spread opinion

(1) International Labour Organisation - op cit. P9-10.

on this matter is, for example, that people doing the same job with equal efficiency should be paid the same wages; as a corollary of this claim for equal pay for equal work, most people feel that differences in job content in the way of either job requirements, or job deterrents, should be reflected in unequal pay for the jobs concerned. Furthermore, there is a good deal of agreement as to the sort of job characteristics that matter from this point of view -- This broad measure of agreement provides a sound basis for attempts to fix wage differentials acceptable to the workers, through systematic analysis of job contents."

Job Evaluation and the Wage Structure.

In Western Europe, job evaluation is usually seen more as a way of determining equitable wages and salaries than as establishing the value of the job. In this case elaborate systems of grievance procedures, departmental committees and worker participation are likely to be associated with the job evaluation, so that an acceptable wage structure can be developed and maintained.

Since job evaluation is concerned with job relativities it does not by itself permit the setting of absolute wage levels or cash differentials between jobs. This means that the problem of constructing a cash scale is a separate one so that the field for collective bargaining or judicial award-making still remains

open. However, one aspect, and that a contentious one, can be removed from the area of disagreement by the use of an agreed evaluation procedure.

METHODS OF JOB EVALUATION.

Jobs may be evaluated using four different techniques; by ranking, by grading by a comparison of factors and by a point rating system.

Under all of these, with the exception of ranking, it is necessary to define in clear and precise terms the criteria which will be used and the way these will be combined. Written job descriptions need to be prepared, listing the duties involved and giving statements of initial skill levels, training needs and so forth.

(i) The Ranking Method

This is the simplest and merely entails placing the jobs concerned in the order of increasing job demands. No attempt is made to separate different aspects of any job, and an overall judgment is made. This approach has the advantage of simplicity and ease, but it appears to be wholly subjective, and provides no easy way to reconcile differing opinions. Since the jobs are ranked without close definition, there is a possibility that the incumbent may be ranked rather than the job and that the status quo will be wholly maintained.

(11) The Grading Method

Under this method a series of labour grades is established initially before the actual job characteristics are examined.

The lowest grade will correspond to a position which makes very limited demands for skill, education, responsibility and other job characteristics. This may cover jobs under close supervision with little training requirement. Each succeeding grade will then reflect a higher level of skill and responsibility with progressively less supervision.

The job description for each position is written in these terms, so that by a matching process the appropriate grade may be selected.

This system is used extensively by government departments and instrumentalities and will be discussed in detail. It has also been accepted for industries where identical operations are carried out by numerous employees.

Problems arise since borderline jobs will possess characteristics from each of several different grades. This lead to pressure for increased numbers of grades which may destroy the basic simplicity

of the system.

In 1955 in the British coal mines, 6,500 "jobs" were condensed into a standard list of about 400 national jobs and these were then placed in three to five grades. The simplicity of this method allowed agreement to be reached despite the complexity of the task and the strength of custom. (i)

Federal civil servants in the U.S.A. are classified into 18 "General Schedule" grades. Here for example a "moderately difficult and responsible" administrative job and a simple scientific job with little responsibility are both classified as GS-5, so that entirely different characteristics are equated to one another in the classification process.

(iii) The Factor Comparison Method

In this method the factors to be used are selected and clearly described. Commonly used factors would be - skill, mental requirements, physical requirements, working conditions and responsibility.

Certain jobs are selected and these are used as

- (i) W. H. Sales & J. L. Davies. "Introducing a New Wage Structure into Coal Mining" in Bulletin of the Oxford University Institute of Statistics, Vol. 19, No. 1. August 1957. pp201

"benchmarks" or points of reference in ranking other jobs. These benchmark jobs should be capable of clear description in terms of the factors chosen and should between them cover a wide range of each of the factors. They would usually include some of the highest paid and lowest paid jobs so that a good comparison is possible.

A table of rankings is then set up, with all of the key jobs ranked separately for each factor in turn. In setting wage rates in this system the existing wages are divided amongst the factors in the proportions in which these are considered to contribute to the total "price" paid for each key job in the form of its wage rate.

The ranking obtained by these two approaches are then compared and adjusted, either by modifying the money values of the different factors for the jobs concerned, or by adjusting the factor ratings.

The system can then be used to rank other jobs, and to fix their wage rates, since each factor level now has a cash value attached to it. The rate for the new job is the sum of these cash values obtained by ranking each job factor against the key jobs.

The system is difficult to explain and it assumes that the wage rates for key jobs are correctly set. It is difficult to see the apportionment of wages among factors as being other than quite arbitrary and forced. The ability of the system to meet long term changes in working methods would be low since it is based very strongly on the existing job hierarchy.

(iv) The Point Rating Method.

As with the factor comparison method, several factors are identified and a series of degrees of each factor are described. Point values are assigned to each of these degrees, so that a total "value" may be obtained for each job.

Job descriptions are prepared for a series of key jobs and these are written in terms of the factors being used. Once a group of jobs has been allotted points, other related jobs are conveniently ranked in terms of the key jobs.

The total number of points awarded to each factor may vary quite widely so that the "weighting" placed upon one factor will differ from that placed on another.

The system has the advantage of keeping job

evaluation and wage fixing separate since a wide range of systems can be used to convert job points to wage rates. Since the jobs are evaluated on the basis of predetermined definitions of factor degrees, it is probably less subjective and fairer than the other methods. However, there are many arbitrary aspects in this method, including the selection of factors, the definition of degrees and the system of allocating points.

C. W. Lytle (i) states that job evaluation seeks to establish "not what the management thinks it ought to pay, nor what the worker or his union thinks he ought to get, but the fair share to which a satisfactory performance of that job should entitle the man who performs it, of the profitable result to which his performance contributes". Against the techniques described, this claim and many similar claims by other authors appear to be completely naive.

Managerial Evaluation Schemes

Lanham comments that surveys show the point method to be the most popular, followed by factor comparison, then grading and then ranking.

- (i) C. W. Lytle - "Job Evaluation Methods" New York, Ronald Press 1946, P.3/

"No final conclusion can be drawn with regard to whether an organisation should attempt to extend its lower level evaluation plan to include its managerial positions, or whether it should select a completely new set of factors and create new scales with these factors. The actual decision depends on whether or not the factors in the original plan will measure the components of the managerial positions. A basic principle in factor selection is that those chosen should exist in the majority of jobs and be important to them. If the factors in the original plan do not meet these criteria when measured against managerial positions a new set should be selected. Sometimes the original plan will serve with one or two additional factors. Each organisation must weigh its existing plan in light of its problems in order to determine which of the (four) procedures would serve it best." (i)

There appear to be no managerial plans operating in the U.S. across broad sections of industry as do the hourly plans. Managerial schemes are usually individual ones, with wide variations in approach.

J. W. Riegel (ii) of the University of Michigan, examined the administration of salaries to scientists and engineers in a number of large firms in the U.S.A.

- (i) Elizabeth Lanham "Administration of Wages & Salaries" - Harper and Row - New York, 1963. P. 25.
- (ii) J.W. Riegel "The Administration of Salaries for Engineers and Scientists" Bureau of Industrial Relations Report No. 8. University of Michigan, Ann Arbor, Michigan.

To examine the views of executives on appropriate factors for evaluation of technical positions he submitted a lists of these to 55 engineering and 26 research executives from different organisations. They were asked which should be used in evaluating engineering or research positions in their own firms. if this was to be done on a basis of the difficulty and importance of the projects typically assigned to these positions. The percentage favouring the specific factors are shown below:

A.	<u>Engineering Executives.</u>	<u>Research Executives</u>
Technical difficulty of typical assigned projects (Investigation and the solution of problems		
(i) Novelty (Pioneering and originality needed)	90	96
(ii) Complexity and scope breadth of perception and analytical ability needed)	98	96
(iii) Limitation (deadlines, restricted facilities)	70	30
(iv) Consideration to be given to economic factors	83	44
B. Responsibility for reporting and interpreting findings and recommendations:	90	96
C. Nature and frequency of collaboration needed with people not in line of authority:		
(i) With technical personnel	88	96
(ii) With non-technical personnel	67	70
D. Managerial Responsibility:		

	<u>Engineering Executives.</u>	<u>Research Executives</u>
(i) Planning and delegating work to team members	96	100
(ii) Responsibility for control of expenditure	77	48
(iii) Leadership and instruction of others (grade and number of subordinates)	90	92
(iv) Responsibility for customer and supplier contracts	58	44
E. Dangerous and disagreeable features of work (hazards, travel, irregular hours)	55	36
F. Trust imposed (confidential reports, projects, etc.)	75	62
G. Economic importance of typical assigned projects (i.e. importance to the success of the business)	82	42

Both groups of executives clearly thought that the degree of difficulty of the projects typically assigned to a position should be considered in appraising its value. This they thought could be judged in part by the novelty of the problems and by their complexity and scope. The responsibility for reporting and interpreting findings and making recommendations about the projects was seen to be important, as was the need to collaborate with people in other departments. Managerial duties which necessitated planning the work of team members, delegating it to them and directly supervising and instructing them was also

seen to be important in the evaluation process.

There was much less agreement on the other factors, with the engineers placing a higher value on the need to respond to economic and time factors than did research executives.

Riegel also explored in detail the salary administration practices in eight large U.S. manufacturing companies and two public utilities. Each of these had some type of job grading or ranking system, but these varied quite widely in concept and scope.

At one extreme a scheme was entirely a classification of responsibilities in the position for activities such as program making and execution, establishing standards, maintaining customer and public contacts, for economic gain and for loss, for supervision and for investigation. At the other extreme' was a scheme which considered only factors which referred to the individual, such as his academic training and experience, initiative, resourcefulness, insight into problems etc.

Most used a mixture of these two - of qualifications and responsibilities. He noted that all of the firms have had to use a committee to appraise unique positions using their own system of evaluation.

The plan adopted by the General Foods Corporation in the U.S.A.

for 600 "executive and high grade technical positions" (i) uses the factor comparison method. Positions are evaluated in terms of three main factors and evaluators are provided with a detailed explanation. They must rank the level of each of three factors, against a series of predetermined bench work positions. The basic questions which must be answered are:

1. What does the incumbent have to know in general, technical and specialised fields?
2. How new and complicated and difficult are the situations to which he must apply his knowledge and on which he must form correct decisions and judgments?
3. What is entrusted to him that is valuable to the Company and may be affected by his decisions and judgments?

Again, point ranking schemes as used in Australia by Caltex and by IBM are shown in Appendix A. It may be seen that there some similarity in the factors selected, but it would be unlikely that the two systems would give comparable results since the weights assigned to the factor degrees differ so

- (i) The American Management Association Handbook of Wage and Salary Administration: M. J. Dooher and V. Marquis (Editors) A.M.A. 1950. Chapter XXII.

widely. The Australian firms which use managerial evaluation systems generally inherit these from overseas - usually with little or no change for local conditions. Unilever, ICIANZ, Ford and U.S. owned oil companies all use such systems,

SUMMARY.

Managerial job evaluation schemes are based on a variety of factors. Some research work has been done to establish a group of factors which appear to executives to be relevant in judging the demands of the technical positions. Much additional work is needed to establish sounder grounds for these schemes, based on the beliefs within an organisation rather than the prevailing ad hoc approach. Techniques developed for attitude surveys appear to be particularly appropriate here.

Setting Up a Salary Structure.

In the point rating and factor comparison methods it would be reasonable to fix the rates for all individual jobs in accordance with their rank or the number of points awarded to them, and this practice has followed to some extent in Europe. However, the most common practice has been to split the actual range of job points into a number of equal parts, each of which

POINT VALUES FOR FACTOR DEGREES

		<u>Degrees</u>																
<u>Factors</u>		A	A/	B	B/	C	C/	D	D/	E	E/	F	G	H	H/	I	I/	J
Education	(10%)	10		14		20		29		42		<u>60</u>	86					
Experience	(20%)	20		25		31		39		49		61	76	96	107	<u>120</u>	134	150
Judgment	(30%)	30	38	47	59	74	92	115	144	<u>180</u>	225	282						
Responsibility- Financial	(10%)	10	13	16	20	25	30	38	48	<u>60</u>								
Responsibility- Contacts	(10%)	10	13	16	20	25	30	38	48	<u>60</u>								
Responsibility- Supervision	(10%)	10		14		20		29		42		<u>60</u>						
Physical Effort	(5%)	5		9		17		<u>30</u>										
Working Condit- ions	(5%)	5		9		17		<u>30</u>										

NOTES:

() - Weights Assigned.

1. Education: Level C corresponds to Matriculation
Level E corresponds to Bachelor's Degree
Level F corresponds to Masters Degree
Level G corresponds to Doctors Degree
2. Judgment: Greater than 180 points
for extremely complex
government negotiations
3. Experience: Unique combination of
experiences.

then becomes a salary grade. In the A.M.A. Handbook of Wages and Salary Administration, E. N. Hay (i) suggests that intervals of 10% may be desirable since the error in evaluating any job is unlikely to be less than 5%.

This procedure simplifies administration and reduces management's need to adjust salaries as job contents are varied within reasonably wide limits.

J. W. Riegel, (ii) in his studies on the determination of salaries for scientists and engineers, noted that for the 10 companies he surveyed the salary structures typically had four or five grades of positions from approximately the \$6,000 per annum level to approximately \$10,000 level. "Obviously the grading of professional jobs is not nearly as precise as the grading of these other types of positions. In contrast, to professional jobs, manual and clerical jobs, generally speaking, are more standardised, the duties assigned any one of these have known limits of difficulty and they do not offer much latitude for the exercise of insight and creativity."

It is very common for a salary range to be chosen to correspond with each salary grade, although in some cases a fixed salary and not a range is used. Reasonable limits are suggested in the

- (i) A.M.A. Handbook of Wage and Salary Administration. op cit Chapter XVII
- (ii) J. W. Riegel - op cit P. 22

A.M.A. Handbook as being plus and minus 20% of the mid-point. The use of such ranges means that there will be considerable salary overlap between successive salary grades. It is argued that the mid-point of each pay range should correspond to average performance and excellent performance in a low grade can then be paid as much, or more than poor performance in a more highly graded job. Salary ranges have major administrative advantages since they reduce the importance of distinguishing between grades, particularly in the case where a position in a lower grade may be more demanding in certain aspects than a more highly graded job.

The Commonwealth Government has recently adopted sequential salary grades where the top of one grade is the bottom of the grade above it. Problems of drawing the line can be expected to vex those responsible for administering this new system.

Pricing the Salary Structure

Most manuals on salary administration are in agreement here. Finding the appropriate pay level for a job is not a part of job evaluation - it will depend on many factors and a market survey must be carried out to find acceptable rates.

As mentioned earlier there are usually legal minima which fix lower limits and that for "hiring jobs" the ruling wage rates

must be paid to obtain or retain labour. For jobs other than these the "market price" is much harder to assess and the range of discretion for wages is much wider. In the salary area, where comparison of responsibilities is harder to make, the range appears to be greater still.

Apart from external criteria the existing inter-relationships of salary rates usually limit the scope in setting salary rates.

The Australian companies which have a formal position classification system appear to participate in salary surveys conducted by consultants and also to carry out their own survey, particularly in the salary area.

It is of course extremely difficult to get strictly comparable data, since titles such as "accountant" cover positions over a wide range of responsibilities and duties. It may be necessary to inspect the job and it is certainly essential to get a clear understanding of the position content before reaching any salary conclusions. However, once these comparable positions have been identified within different firms then until the duties are significantly altered, salary surveys can be conducted with great ease. A danger is that this could lead to groups of firms blithely surveying each other's salaries in isolation from the rest of the business community. Precautions would also be desirable since the sample is biased by the rates paid by large

firms with formal salary administration systems.

It is usual to compare actual salaries paid rather than the ranges which have been established. It is preferable to select as survey companies those which would compete for the same applicants. This will vary and for professional positions would need to cover a large area since Riegel found in his survey that "professional workers are quite alert and knowledgeable with regard to salary levels and employment opportunities. They can finance trips to inspect job opportunities and also move from one employer to another when these appear advantageous. Fringe benefits, which do restrict mobility to some extent, do not hold them, particularly the younger ones, to their employers." (i).

Problems of Job Evaluation Schemes

(a) At a National Level

Since 1945 industry in Germany and the Netherlands has, with official backing used job evaluation techniques extensively as a means of making wage adjustment to particular jobs or industries without upsetting the general objective of maintaining stability of national wage levels. In The Netherlands this has led to the use of job evaluation in dealing with claims for wage increases where the rate for the same work appears to differ between industries so that jobs and wages in agriculture have

been compared with those in manufacturing.

It is probable that at the time such schemes were introduced the general level of wage differentials according to skill in the economy would be acceptable. Factors and weights would have been selected so that for most jobs the current wage corresponded to the wage determined by the evaluation system. However, slow changes can be expected to occur which will alter the need for skills within industries and will lead to changes in the desired distribution of labour between industries. In the absence of a well contrived system for adjusting weighting factors and the values placed on skills, the system is likely to become unworkable. In The Netherlands it has been suggested that an additional factor based on some measure of the number of unfilled vacancies may help to make the system more responsive to demand. (i)

The International Conference on Job Evaluation held at Geneva in 1950 decided to investigate the effects of different rating and weighting systems on the results for a group of standard jobs. "Twenty representative industrial jobs were selected and agreed definitions of the duties and responsibilities of each were circulated to 12 job evaluation groups using different (point rating) systems in Belgium, Finland, France, The Federal Republic

(i) International Labour Organisation. op cit. pp 61 ff.

of Germany, The Netherlands, The United Kingdom and the United States.

They found significant variations in the evaluations of three out of seventeen jobs which suggested that major differences might result from the values placed upon duties and responsibilities in different systems. Differences in interpretation of the job descriptions, by different groups of experienced assessors also appeared to be important.

The Conference reported that "Job evaluation can be regarded as being 'scientific' only to the extent that it treats its problems in the 'spirit of science', that is in an ordered and systematic fashion". Obviously much more research is needed before a system can be developed which can meet the needs of national job evaluation structures.

An example of job evaluation on a massive scale occurred in the 850 nationalised collieries operated by the National Coal Board in the United Kingdom in 1955. Over many years a series of completely unrelated pay agreements and ruling had produced a wage structure which was a "cobwebbed and rickety tangle, almost without rhyme or reason". Some jobs which were agreed to be worth the least pay received higher amounts than more demanding jobs, while at different collieries considerably different rates were paid to men doing identical jobs.

Sales and Davies commented that "Adjustment of the old structure to meet specific objectives was extremely difficult because of ignorance about the scope of particular classes or occupations. Consequently, any attempt to do so was a hit-and-miss affair....It is no accident that for many years in coal mining flat-rate increases were the rule, with occasional minor deviations. The necessary framework for doing anything else was simply not available for the existing wage structure was unsatisfactory in itself". (1)

All of the positions were reclassified to fit into one of 400 jobs. Here the typical bias in job populations became apparent, since 83% of the men were in 100 of the jobs and 200 jobs contained only 3% of the men. This means that the changes in the rates paid in a small number of critical jobs has a dominating effect on the total wage bill.

To keep the cost of wage revision within bounds without creating widespread dissatisfaction wages were either kept constant or increased.

The final wage structure replaced the old pattern of minimum rates supplemented by "personal rates" with a system of "standard" rates for each job, grade. Rates below this were immediately adjusted and workers whose rates were equal to or above the

(1) W. H. Sales and J. L. Davies. op cit pp 222-3

limits for the grade remained as they were. All others received a general flat rate increase. These changes, while adding fourteen million pounds to the annual wage bill, resulted in a comprehensive wage structure. "The reform of the system was an essential preliminary to applying in a more intelligent and rational manner, sums of money which would otherwise be devoted to flat rate increases and so to the perpetuation of a wage structure out of line with the needs of a nationalised industry."

This is a use for job evaluation which was hardly foreseen by the Americans who pioneered these systems in the name of private enterprise.

At the Company Level

Kerr and Fisher (1) studied the effect of environment and administration on job evaluation schemes in a number of Californian air-frame manufacturing plants. The comment that "plans vary in weights for skills, allowances made for community wage rates, fineness of job definitions, etc. However, all represent an attempt to discover a system of analysis which can be described, transmitted and repeated whereby a variety of jobs can be related to one another logically and equitably and a series of appropriate wage rates can then be derived. Each attempts to develop an internally consistent, rational

- (1) C. Kerr and L. H. Fisher "The Effect of Environment & Administration on Job Evaluation". Harvard Business Review May 1950 pp 77-80

FACTORS IDENTIFIED IN 14 HOURLY AND 12 SALARIED PLANS

HOURLY PLANS		SALARIED PLANS	
<u>Factor Name</u>	<u>No. of Cos. Identifying Factor</u>	<u>Factor Name</u>	<u>No. of Cos. Identifying Factor</u>
Mental Development	3	Accuracy	1
Job Learning	2	Mental Skill &	
Knowledge	3	Experience	1
Education	6	Responsibility for	
Experience	5	Performance	1
Mentality	1	Job Training	1
Mental Application	1	Knowledge	4
Know How	1	Decision Making	3
Skill	6	Accountability for	
Responsibility - Safety	5	Employees	1
Responsibility - Work		Accountability for	
of Others	3	Assets	1
Responsibility - Tools		Creativity	1
and Equipment	4	Relationships	8
Responsibility -		Resp. for Public	
Material or Production	4	Relations	5
Responsibility - Confi-		Initiative	1
dential Information	1	Monetary Responsi-	
Responsibility	1	bility	2
Hazards	6	Teachability	1
Working Conditions	9	Skills	5
Physical Demand	7	Working Conditions	5
Maintenance of Production	1	Special Mental Skills	1
Effort	3	Analytic Ability	2
Procedures	1	Special Personal	
Organisation	1	Requirements	1
Practice and Policy	1	Application	1
Personal Contacts	1	Complexity	4
Integrity	1	Experience	4
Accuracy	1	Policy Formulation	1
Independent Action	1	Policy Interpretation	1
Supervision Received	2	Supervision Received	3
Initiative	2	Supervision Exercised	4
Mental & Visual Demand	4	Education	3
Complexity	1	Physical Effort	2
Effect of Errors	1	Seriousness of Errors	2
Supervision Exercised	3	Resp. (various)	15
Care	1	Overall Job Scope	1
Dexterity	1	Judgment	3
Versatility	1	Normal Skill	1
		Mental & Visual attn.	2
		Personal Hazards	1
		Human Resources	2
		Assigned Tasks	1
		Background	1
			<u>8</u>
AVERAGE NUMBER OF FACTORS <u>7</u>			

and systematic plans for allocating the wage bill of a plant to the various claimants upon it in accordance with some scheme of relative value ascribed to the different claims."

Initially, an evaluation scheme is acceptable to workers and to unions, provided the scheme does not materially upset the traditional job hierarchy and usually it corrects some long felt grievance. The existence of a scheme is a contribution towards stability since it limits the areas of disagreement and provides a point of reference and a procedure for resolving differences. It allows management or the union to compromise without fear of appearing to be defeated since the formula provides its own authority. Since both jobs and employees change fairly quickly, initial anomalies become unimportant in a short time.

However, the system requires considerable administrative skill and wisdom if it is to survive excessive claims for re-evaluation and the market pressures of scarce skills.

On the aspect Kerr and Fisher comment that "the selection of a single measure of equity, nor how persuasive its logic, cannot meet all the demands upon it and cannot satisfy all the needs and interests which require satisfaction. Job evaluation faces its gravest threat from the monolithic character of the value system it assumes. For at base, all job evaluation systems attempt to measure the relative work of a job by ascribing

given exponents of value to such characteristics of the job as skill, hazard, job conditions and the like. The more fixed, definite and self-executing the formula, the less will it allow for other and perhaps more important pressures to which job rates respond" - "As other considerations become important, such as the multiplicity of outside rates, wage traditions, scarcity of labour, strength of unions etc, the less likely will they be met. It may be necessary to live with the contradictions and seek no greater precision in the construction of the plan that is needed to survive in the operating environment."

In a very comprehensive survey by H. Baker and J. M. True of Princeton University (1), executives of 73 firms with job evaluation schemes were questioned, as were officials from 20 unions. Some firms reported on more than one scheme. They found that the longer a scheme had been in operation, the greater the chance that it would need major revisions. Of 56 point rating schemes, one-third were felt to be unsatisfactory because of management's too rigid adherence to the scheme and refusal to modify it as changes occurred in local collective bargains and labour supply and in production methods. Of 20 ranking and classification schemes, only one-fifth were considered unsatisfactory and here lack of adequate job descriptions was a problem.

- (1) H. Baker & J. M. True: "The Operation of Job Evaluation Schemes" Princeton, N.J. Princeton University 1957.

A major gain in many cases was that the wage structure was more logical and equitable and had considerably improved worker morale. Again, schemes had facilitated the processes of collective bargaining since the agreed pattern of wage rates set the framework for discussion. Industrial relations had improved as a consequence.

(c) General

The empirical research work at the Institute of Industrial Relations has indicated that it is possible to determine employee preferences on pay and benefits. It also shows that managers have a realistic idea of the adequacy of their salaries compared with those received by others at the same level of responsibility in other firms. It shows that comparisons are made inside and outside the firm in deciding the equity of salaries paid, particularly by professional workers.

Wage and salary administrators appear to be obsessed with techniques, so that their objectives have become obscured. Most text books define the field on wage and salary surveys, job description and evaluation, and merit rating. In doing so, they assume that the system has somehow measured universal aspects of the jobs on which agreement is possible, that it has allowed the contribution made by the person to be assessed and that equity has resulted.

Commenting on this problem, Dr. D. W. Belcher points out "that equity implies numerous assumptions concerning employee comparisons and perceived satisfactions or dissatisfactions, with the results of these comparisons. Achieving motivation from wage and salary programmes logically depends upon creating differentials that (1) are perceived as appropriate and (2) motivate the individual to contribute significantly to the organisations goals." (i)

The major assumptions which appear to have been made in the salary administration area are that:

1. Pay comparisons are made firstly in terms of other similar jobs and then secondly, in terms of performance on the job.
2. Pay comparisons are not greatly influenced by levels of aspiration and pay history and that therefore managers' expectations do not differ significantly from those of rank and file employees.
3. Employees accept the concept of a hierarchy of jobs and pay and that they use similar yardsticks to those of management.

(i) D. W. Belcher: "Ominous Trends in Wage & Salary Administration" Personnel Vol. 41, No. 5, October 1964, P48.

4. Employees agree with management on what they are paid for and can accept the job evaluation scores as an equitable representation of their ideas.

We are dealing here with institutionalised assumptions about the way in which people perceive their salaries. The empirical evidence however suggests that there is a conflict of opinions which cannot be easily resolved. Patchen has shown that an employee defines equity, not only in terms of the absolute amount of his salary but also how his salary matches that of other people he compares himself with. If the difference between his salary and that received by these people seems to be appropriate in terms of other differences between them, such as age, education and skill, then his comparison increases his satisfaction. If, however, the salary difference seems greater than these differences merit then his pay satisfaction is diminished. Here we also face the basic problem of whether pay which motivates employees should satisfy them. There are obviously levels of dissatisfaction which an individual can tolerate and in some cases this will lead to positive steps to improve his position. Within this region we have an acceptable pay policy.

The institutional aspects of salary administration are clearly

seen in the use of ready made evaluation plans imported from U.S.A. or U.K. Some of these place heavy rewards on seniority rather than merit, so that the problems of appraising performance are removed, along with the possibility of recognising good performance by appropriate salary action.

Summary.

There is scope for wage and salary administrators to use their knowledge of their organisation and the skills it utilises, to assist in redesigning jobs, modifying organisational patterns, and reviewing manpower budgetting. They must accept the need to develop a flexible administrative system which allows the recognition of outstanding performance rather than act as policemen over salary expenses. They need to extend empirical research and innovation rather than accept a formalised and institutional approach.

Professional Job Evaluation Within the Australian Arbitration System.

The salary patterns of professional employees in Australia have, in recent years, been shaped by the key decisions in June 1961 of the Commonwealth Conciliation and Arbitration Commission in the Professional Engineers' Base Grade Case (i). Following this the salary patterns for managerial levels have, in turn, been modified by their decisions in June 1962 in the Professional Engineers' Case No. 2.

During the hearing of the Base Grade Case attention was focussed on the Grade 1 Engineer in the Commonwealth Public Service. Essentially he is "a qualified engineer without extensive experience in his profession, who is capable of carrying out technical work of a high standard and responsible nature under the general guidance of more senior members of his profession, and whose contribution increases progressively in the first four or five years. He may be required to supervise and/or co-ordinate staff, machines and equipment engaged in related engineering tasks..."

The Commonwealth Public Services uses a position grading system so that the position of the Grade 1 Engineer is covered by a definition and a statement of characteristics of the class,

- (1) Commonwealth Public Service Arbitration Reports, Vol 41. 1961.

and lays down the general features of the duties he can be expected to perform. The Grade 2 Engineer is expected to carry more responsibility for his own professional decisions and may have increased supervisory duties.

The Commission observed in its judgement that "In relation to the professional engineer there has in the past been too much attention to salary patterns, the appropriate position in wage structure relationships with other employees, and possible repercussive effects, and too little attention to actual duties, responsibility and work value. The great amount of evidence and material placed before us has given the commission a unique opportunity of adopting for the fixation of salary rates for a Grade 1 Engineer the method most likely to meet the ends of justice - the assessment of his worth in the lights of the work and its responsibilities.

"We think that the work is truly professional, that whether the profession is entered by way of degree course or diploma course, intensive study is required, that this study must be such as will enable any employee to acquire the knowledge of higher mathematics necessary for dealing with complex engineering problems; that notwithstanding the existence of supervision, a Grade 1 Engineer carries the responsibilities of professional duties and that in practice he performs useful and essential work as a member of a team.

The members of the Commission accepted that a degree or diploma were essential qualifications, and that either course called for extensive study. They carried out extensive site inspections in a number of major engineering undertakings and examined the responsibilities of the engineers for technical and supervisory matters.

While the criticism of the past pre-occupation with salary administration is possibly justified, the opportunity to set new patterns by showing the techniques the Commission evolved to allow the assessment of the Professional Engineers' job in the light of the nature of the work and its responsibilities was regrettably allowed to pass. However, it appears certain from the terms used by the Commission that the job classification system used by the Commonwealth Public Service was taken by them as the means by which the worth of the job could be assessed "in the light of its content and its responsibilities".

Since they were expected to fix wage rates for the Base Grade Engineer, they were required to decide the wage that this particular combination of skills and responsibilities merited. Very extensive salary data had been submitted and the lower limits had been established by the Union and by the existence of a margin for qualified engineers in Part II of the Metal Trades Award. They stated "that Grade 1 Engineers are entitled to an increase in salary rate. We think that salaries should

move with increased experience and responsibilities".

In awarding a substantial increase, the Commission pointed out that since there was no substantial difference between the work of professional engineers in the Public Services and of those employed outside, the same rate for the new engineer and the man with five years' experience would apply throughout.

It is not the practice of the Commission to explain the economic reasoning followed by its members in this pricing decision.

However, where individual judgments have been made in previous cases it is apparent that each member makes notes of his evaluation, that these are discussed and the final wage-rate awarded is a compromise between the ad hoc rates decided by the individual members.

The State and Federal Public Service Boards were concerned with the effects of the Base Grade Award on their customary salary relationships. All qualified engineers received the minima specified, but many anomalies resulted, where supervising engineers suffered greatly reduced (or no) margins over their junior engineers. Some attempts were made in the next 12 months to consolidate engineering grades and apply traditional supervisory margins to these, but in the main this process was a temporary expedient since a further case (no. 2) was submitted by the Association of Professional Engineers, and this was

decided on 15th June, 1962.

The Commission, in its report on the No. 2 Case stated that "Supervision does not diminish responsibility for the proper exercise of professional skill, judgment, ability and experience. The availability of advice and instruction from superior officers to an extent lightens the burden which an officer would otherwise carry."

In this major essay in the field of appraisal of managerial positions the Commission has focussed on the distinctive managerial features which form the basis of the Commonwealth classification system. Here they were working with fairly closely defined position and duty statements which have been tested in practice over a considerable period.

Such statements are not common within industry and there is no agreed structure which would allow easy extension of this ruling to privately employed engineers. Although rough comparisons could be made, these new rates had no immediate effect on these people.

The Commissioners were aware of the possible impact of their judgment on other classes of professional employees in the Commonwealth and State Public Services and Instrumentalities. In Section 24, under "Repercussive Effects", they observed:

"The Commission is at present directly concerned with an enquiry only and is not sufficiently informed by the parties

to justify its entering upon a consideration of what effects its decision may indirectly have in other fields, or to speculate as to what use people outside the case may seek to make of this decision. At the same time it is realised that the Public Service Arbitrator exercising his jurisdiction alone may be quite differently placed, when he is concerned with separate investigations involving professional and other classes of officer and employee, and as a consequence is perforce placed in a position where he may be obliged to appreciate possible repercussive effects. The Public Service Board as the Commonwealth's employing and primary wage-fixing authority, is probably in a similar situation.

The Commission was in the Base Grade Case, as it is in this, anxious to avoid any improper use of its decisions, but clearly it has neither expressly nor by implication, subscribed to the view that there could not be circumstances in which either the reasons for decision or the salaries determined may quite properly be used by employee organisations, the Board or the Public Service Arbitrator.

For the purpose of avoiding any possible misconception of the Commissioner's remarks in the Base Grade Case, we are able to state that the sole concern of the Commission in that case was to make it understood that a work-value assessment is made primarily for the employees who have established its reasonableness

and does not entitle other to demand the same rates.

However the Public Service Board in the exercise of its discretion is fully entitled to waive proof of work-value, and by agreement or unilateral act to determine salaries for one section of employees by relation to those fixed or prescribed for another section."

The Public Service Arbitrator)a member of this Commission) subsequently dealt with an application for an award covering Professional Scientists in the Commonwealth Public Service. In his judgment he commented that the applicants "have not made out a case for the salaries recently awarded to Professional Engineers. There are distinctions and, in my view, they are of sufficient weight to justify the conclusions that different salaries are required." (1)

At these hearings, the Board gave evidence and tendered public documents with the aim of having the Second Division accepted as "higher public service" in which salary levels are commensurate with the high responsibility of office, but would not be governed by awards for individual classes of public servants in the lower divisions. When a man reached this level, he would for salary purposes, lose his professional identity as an engineer, chemist or economist and become a professional

(1) Determination No. 76 of 1963 of the Public Service Arbitrator.

executive. His salary relativity would not then be subject to the distorting effects from a variety of different awards.

The ten percent increase which had been awarded to the fitter in the recent Metal Trades Case, was passed directly into the salary grades, and in most cases, without "tapering" into individual salaries. The revised approach to "professional executives" was then accepted by the professional associations.

At this stage then, the problems produced by the arbitral decisions in the first engineers' case, were resolved. From this basis of agreement it is probable that increasing professionalism within the Commonwealth Public Service can be accommodated for a number of years to come.

Following this, consent awards with minimum salaries up to £2,800 per annum has been made for four private industries, using the Commonwealth position classification system and almost identical salary levels. The industries concerned were civil constructions, oil, chemical and automotive and each industry group was approached separately and with considerable sophistication and skill. A copy of the Vehicle Award is shown in Appendix "B".

These consent awards can be expected:

1. to accelerate the extension of formal management job evaluation procedures within industry,

leading in turn to more formally defined salary structures and,

2. to have a major impact upon salary levels paid to managerial and professional people throughout industry.

SECTION III - SUMMARY

Four basic techniques are used for evaluating the demands made by a position on the person occupying it. These techniques are "scientific" in the sense that they follow an order and systematic approach to the facts. As such, they leave unanswered the question of ~~what~~ contribution the individual sees himself making to the goals of the organisation. Upon this estimate he appears to base his concept of the equitable wage for this job. However, apart from a few isolated cases, the tendency has been to deal with administrative problems of wage structures rather than attempt to find systems of administration which will provide strong motivation to a wide range of people.

In so far as formal techniques have been discussed and agreed with the unions, improved understanding has resulted and both parties have gained from the authority of the system. However, the problems of adjustment to change in the need for

particular skills within an industry, and at the national level with changes between industries, have not been solved. Complex administrative problems arise and these become worse when the procedures are laid down and enforced inflexibly.

The real need is to expand the base of information on which salary administrators work, so that they can redesign jobs, modify organisational patterns and review needs. They must set up flexible system which recognise outstanding performance rather than act as policemen obsessed with the details of a technique and with control of salary expenses. The need to explore with social psychologists the amount of salary dissatisfaction which a person can tolerate without frustration and which he will respond to as to improve his position.

In Australia, the Arbitration Commission has adopted completely the Commonwealth classification system of graduate engineers in establishing the base grade salary for the graduate engineer. Although this was claimed to be an assessment of his worth in the light of its work and its responsibilities, no evidence has been forthcoming as to how this difficult task was achieved. In extending this into the appraisal of managerial positions in the Commonwealth Public Service in the 2nd Case, the Commission worked exclusively within their position definitions. The A.P.E.A. has subsequently used these definitions in

obtaining consent Awards, so that industry is now in danger of having the Commonwealth J. E. system and pay structure imposed upon its managers.

We can expect managers in industry with very different skills to receive repercussive salary adjustments in line with those awarded to the engineers to bring them into line with those employed in the Commonwealth Public Service.

PROFESSIONAL AND MANAGERIAL SALARIES
SECTION IV

Salary Surveys

The most comprehensive regular survey of professional and executive salaries in the U.S.A. is carried out by the Bureau of Labor Statistics. Their third survey of professional administrative, technical and clerical salaries covered winter 1961-62 and is an extremely comprehensive and well planned survey which could certainly act as a model if such a survey was to be undertaken in Australia by the Commonwealth. The main purpose of the survey appears to have been to find the equivalent industrial salary rates for Federal Government employees as a basis for fixing salary ranges in line with those common in industry.

"The occupations selected were judged to be surveyable in industry within the framework of a broad survey design, and which are representative of occupational groups which are numerically important in industry as well as in the Federal Service". (p.viii)

The occupational definitions used were based upon and closely comparable with those of the Federal Classification Act. Field economists visited the selected firms and obtained the salary

data after reaching understanding of the scope of the position descriptions.

The 1961-62 survey covered establishments with more than 250 employees in urban areas, and salaries were obtained for nearly 950,000 employees representing 8% of the estimated total work-force in the establishments within the scope of the survey.

There is no comparable published survey in Australia, although the Commonwealth Public Service Board does from time to time, using interview procedures, establish the current salary rates paid in industry for various professional positions. It is clear that the U.S. practice of publishing the results from an expertly planned and conducted survey is very much superior, since it allows action to be taken on a basis of fact rather than supposition.

Surveys of engineering salaries were made in 1955 and 1957 of members of the Association of Professional Engineers, and five similar surveys were made among members of the Royal Australian Chemical Institute between 1953 and 1962. The Melbourne University Appointments Board surveyed a wide range of professional organizations in 1956 and 1964 although this was restricted to Victorian members only.

Surveys of executive and professional salaries in industry are carried out by various consultants. Results of Australian surveys

by the McKinsey Corporation have been published, but the results obtained by others are not freely available. The Sydney division of the Australian Institute of Management carried out surveys in 1964 and 1965 amongst a wide range of member companies and this material has been useful. Surveys carried out by the Department of Labour and National Service into executive salary and organisation practices have been very valuable but do not appear to have been followed up in the last four or five years, so some changes in policy may have occurred.

Some information is available through the pattern of regular salary surveys conducted, usually on an annual basis between different firms. However, most of this is aimed at establishing trends in wage patterns. The administrative decisions on salary changes which derive from changes in wages depend largely on the policy of individual firms.

Given the small numbers of professional employees within individual firms and the wide spread of responsibilities and duties assigned to individual positions, inter-firm comparisons are useful only for setting trends.

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AUSTRALIAN GRADUATES' SALARIES

Details of a number of surveys of Australian graduates' salaries are shown in Appendix 1. The results for chemists, engineers and accountants, the three major groups of salaried graduates, are summarised there.

(a) Comparison of Age/Salary Relationships for Chemists, Engineers and Accountants.

The curves in Figure R show the median salary increase an individual would have received between the two surveys conducted by K. Gravell in 1956 and 1964. A new graduate aged 22 in 1951 would have had 5 years' experience when earning the median salary for the 25-29 age ranges in 1956. By 1966 he would be receiving a salary in the mid-point of the 35-39 age range. These best estimate of his 1964 salary is the mid-point of the 35-39 age range less two years' salary adjustments at the rate of £50 per annum.

On this basis the salary increases generally range from £700 to £1,300 over the eight year period. The absolute increases are greatest for the groups with least experience and since these receive lower pay than more experienced groups, the percentage increases here are much greater. For engineers and chemists the increase is about £1,100 to £1,300 for the 20-40 age range. The accountants show a smaller increase of £800 to £1,000 over the

same range so that their salaries have not kept up with those of the engineers and chemists.

For the first ten years after graduating the engineer in both surveys has a margin of 5% to 10% over the chemist. After this, both appear to be paid very similar salaries. Accountants seem to receive salaries of 10% to 20% less than the engineers' salaries and in the later survey their differential worsened slightly.

All three groups show a pattern of steadily increasing median salaries for successive age groups up to about 40-50 years.

Engineers and chemists' salaries show median increase of £45 to £60 per annum. After age 45, the median salaries become rather erratic since the numbers in the groups are smaller, but salaries generally appear to increase much more slowly and in some cases would probably remain constant.

In the 1957 A.P.E.A. survey respondents were asked the reason for their last salary adjustment. In the case of municipal engineers, 37% stated that this had been due to a new award or industrial agreement, as did 25% of the State (Victorian) engineers, 17% of the Commonwealth, but only 3% of those from industry.

Upgrading and position change were the reason given for increased salaries by 46% of industry engineers, and another 29% claimed the rises were merit increases. This amount of position and level

change within two years in industry suggests that organisation structures may be fairly flexible with considerable internal adjustment taking place over a short period. With 75% giving these reasons it appears that private industry was little affected by awards and were carrying out a quite extensive performance and salary review programme, which was not viewed as a system of annual salary increases.

The engineers employed by the State and Commonwealth attributed 40% and 20% respectively of the change to annual increases, so that the custom here appears to be common. Upgrading and position change resulted in 20% and 35% of salary change in Commonwealth and State salaries, being considerably less important than those in industry.

(b) Recent Trends in Graduate Salaries.

From the two surveys conducted by Mr. K. Gravell of the Melbourne University Appointments Board in 1956 and 1964, the recent trend in Australian graduates salaries can be established.

The age corrected median salary of chemists increased by 5.6% per annum while the engineers' increased by 7.2% and the accountants by 5.7%. Here the changes in chemists and accountants salaries are virtually identical. The overall increases on 1956 figures are 53%, 74% and 56%, so that the engineers have increased their

margins by 20% over the other two groups of graduates in this period.

Data from the Royal Australian Chemical Institute surveys indicate that chemists' salaries increased at the compound annual rate of 5.8% in 1955 to 1960 and at the lower rate of 3.8% in the two years 1960 to 1962. The Association of Professional Engineers survey in 1957 was a repeat sample of the respondents to the 1955 survey and the median salary was found to have risen from £1,430 to £1,708. On an age corrected basis, this corresponds to an overall increase of 12.6% or a compound annual rate of 6%. These facts suggest that salaries were rising quite sharply in the whole period 1955 to 1964, although there may have been some falling off in the rate in the last two years.

The salary to be earned by an engineer with 5 years' experience was specified in the Professional Engineers' Award made in May 1961 at £2,200. The APEA surveys show that the median salary for an engineer 27 or 28 years old was £1,300 in 1955 and about £1,500 in June 1957. At the average rate of increase for engineering salaries this would have increased by 31% to become £1,965 by 1961.

It is obvious that the Award resulted in significant increases to the salaries being paid to these people - probably in the

the vicinity of £250 per annum. This lump sum increase is probably the main reason for the higher rate of salary increase shown by the engineers compared with the other two groups. Without it their overall increase would be 60%, which compares well with the 53% and 56% shown by the others.

This interpretation is in line with the fact that the salaries of engineers are consistently higher than those of chemists in the earlier age range, but that this differential vanishes after 15 years' experience.

It appears that engineers with five years' experience have received an upthrust from the PEA which has not had its counterpart in the chemists' salaries. Here there are a lower percentage employed by the governments and in industry - their positions are harder to classify than engineers' positions.

K. Gravell's survey showed that the incomes earned by graduates in Law and Medicine rose by 65% and 55% respectively over the same period.

The starting salary for engineers in industry according to the APEA surveys was £1,050 in 1955. The Melbourne University Appointments Board reported this to be £1,300 in 1960 and it apparently had increased at about £50 per annum over this period. This would suggest a figure of £1,350 in 1961, compared with

£1,530 set by the Award. Here again a substantial salary lift occurred and the figure of £1,600 in 1964 as the starting salary offered by all employers shows little subsequent change. Other graduates were also receiving initial salaries within £200 of this, so that a general uplift of starting salaries occurred following the award.

(c) Employment Patterns

There are some very marked contrasts between the employment patterns for chemists, engineers and accountants. Typical percentages by employer are shown below:

	<u>Chemists</u>	<u>Engineers</u>	<u>Accountants</u>
	%	%	%
Self Employed	2	4	14
Commonwealth Government	16	18	10
State Government	11	35	8
Local Government	-	9	1
Industry	56	22	50
University & Colleges	11	4	1
Employed by Practitioner	1	3	7

Private firms employ half of the chemists and accountants, but only about one-fifth of the engineers. Municipal, State and Federal Governments employ over 60% of the engineers compared with 27% and 19% for the chemists and accountants respectively.

Accountants have a substantial stake in private practice, while a large number of chemists are classified as teaching in colleges

or universities.

It is possible that the percentage of eligible people who are members of their professional organisation varies with profession or with their employment. This could make some of the smaller differences observed unreliable, but the major differences appear to be quite significant ones.

In particular, since the majority of engineers are employed by government, formal action through the arbitration system by Professional Officers' Organisations would appear to be a normal response. For chemists and accountants, where there is much heavier emphasis on industry and private practice, such an action would be much more difficult to organise since these people operate largely as individuals being either self-employed or scattered throughout industry.

(d) Salary Differences Between Employers

Where the possibility of private practice is significant, as for accountants and engineers, these pay the highest median salaries.

For both chemists and engineers the age corrected Commonwealth median salaries are higher than those paid by industry by £185 and £130 respectively. The 1962 RACI survey showed the Commonwealth Authority median to be £430 higher than the Commonwealth Public

Service median for chemists and this is thought to be due to the extremely flexible and generous salary and promotion policy followed by the C.S.I.R.O. as the major employer of research chemists.

The Snowy Mountains Hydro Electric Authority also adopted a practical and progressive salary policy and this may help to account for the higher Commonwealth engineering salaries.

For accountants, the private firm's median salary has increased by a larger amount so that the Commonwealth, which was formerly slightly ahead, has now fallen back by £70 per annum.

In general, State Governments median salaries have maintained their position but they are still significantly lower paying employers.

Accountants and engineers employed by private firms have stayed well ahead of the remainder in the salary paid to the upper quartile. The commonwealth is ahead of other employers in the salary paid to the lower quartile. The private firms have a much wider interquartile range and this allows recognition of better than average performance. The Commonwealth, in particular, with half of their range, may be paying little extra for excellent performance and too much for poor performance.

For chemists the Commonwealth salaries for the upper and lower

quartiles are well ahead of industry, so that the Commonwealth is clearly the best employer. Here the C.S.I.R.O. effect possibly dominates since the Public Service median is very much lower.

B. AUSTRALIAN WAGE TRENDS

(a) General

Using the 1955 values as 100, two wage indices and the Consumer Price Index have been plotted in Fig. L. The values for the index of average adult male earnings for Australia and the minimum wage rates have been calculated from the Commonwealth Statistician's "Wage Rates and Earning 1965".

Up to 1965 changes in the Consumer Price Index were reviewed annually by the Commonwealth Court of conciliation and Arbitration and the basic wage adjusted in accordance with the changes. Over the 10 year period the minimum weekly wage increased at the compound rate of 3.0% per annum.

The index for the average adult male earnings increased over this period at the compound rate of 4.8% per annum, and this curve has been fitted. these earnings include over-award and overtime and other payments made to employees. The rate of increase fell in 1961-62 during the business recession and made a strong recovery in 1964-65.

(b) Professional

The red line on Figure L is the graduate chemists' salary index. It follows the average adult male earnings curve quite closely, but rises sharply over the period 1962-64.

As discussed in the section on Australian graduates, salaries have all increased over the period 1956-64 at compound rates of 5.6%, 5.7%, 6.4% and 5.7% for chemists, accountants, medical practitioners and lawyers respectively. At the same time, engineers' salaries have increased by 6.0% plus the estimated £250 per annum jump brought about by the Professional Engineers Award (or 7.2% in all).

Conclusion

We are certainly not observing a "classical" increase in salaries of employees at a time of scarcity of labour. The arbitral authorities have followed a system of regular upward adjustment of the basic wage and margin and the wages of factory workers, the salaries of employed graduates and the incomes of self-employed lawyers have all moved upwards at a consistently higher rate, but almost in unison.

It is hard to escape the impression that a competitive pattern of adjustments has occurred, with each group busily maintaining its status quo as it perceives it with respect to the others.

Self-employed professionals have not been hesitant in raising charges to maintain traditional relationships and a comfortable type of wage inflation is occurring, with little hardship for those groups who can look after their own interests.

On this view, the Professional Engineers award gave engineers a temporary advantage which will be reduced by other groups in the next few years. Extensive revision of the structure within the Commonwealth Public Service has ensured that a professional managerial class has been recognised so that this process is complete at the upper levels, here and in industry.

C. COMPARISON OF U.S. AND AUSTRALIAN GRADUATE SALARIES

The winter 1961-62 survey in the U.S.A. by the Bureau of Labor Statistics showed that in the twelve months since the previous survey, average salaries rose by 2.7% for professional and administrative employees, and for clerical employees by 2.9%. Accountancy and engineering salaries increased by 2.8% and 2.6% while those of chemists and draftsmen increased by 3.9% and 2.8% respectively.

The comparative salaries for chemists, engineers and combined accountants are shown in Appendix C. The median salaries are \$US 8,350, \$9,000 and \$7,000 respectively. Only 20% of chemists and 10% of engineers received less than the median salary of

the accountants. In Australia in the 1964 survey by K. Gravell, 35% of the chemists and 15% of the engineers earned less than the accountants' median salary.

At the lower salary grades engineers salaries are ahead of chemists but the best paid 20% of both U.S. groups appears to receive identical salaries and this again parallels the Australian findings.

The starting salary patterns for U.S. graduates are similar to those in Australia with those for engineers 10% to 12% higher than those for chemists and accountants. Experienced accountants in Grade GS 11 receive 9% less than engineers, while chief accountants have salaries within 3% of those of chemists and engineers.

In 1962, the U.S. Federal Government median salaries for engineers, were 90% of those paid by industry for the first few years of experience, and with further experience the Federal salaries fell to 85% after eight years and 80% after 16 years. By 1964, these had been revised so that the medians were almost identical, up to 16 years' experience. This appears to be out of line with Australian practice, where industrial salaries for engineers are lower than those paid by the Commonwealth Government. In Australia the practice of following the management leads set by the Commonwealth may be well developed.

C. COMPARISON OF U.S. AND AUSTRALIAN ENGINEERS' SALARIES

(a) Rates of Salary Change

The Engineering Manpower Commission carried out its first engineering salary survey in 1953 and repeated this at two year intervals from 1956 to 1964. The results are shown in Fig. Y, graphed against years since graduation. Similar data from the Australian surveys conducted by the Association of Professional Engineers and the Melbourne University Appointments Board are also shown.

For U.S. engineers, the median salary for the graduates with ten years' experience increased at the compound annual rate of 5.6% from 1953 to 1964. Almost half of this 83% overall increase occurred in the first three years when the increase rate reached 10% per annum. Over the period 1956 to 1964 corresponding to the Australian surveys, the annual U.S. rate of increase 4.3% while the equivalent Australian figure was 4.6% per annum.

(b) Change in Salary with Experience

1. General

The following table shows the new engineering graduates salary as a percentage of the median salary paid to engineers with 5 and 10 and 20 years' experience, in both the U.S.A. and Australia:

	<u>% of New Graduates' Salary to that of</u> <u>Experienced Engineers</u>		
	<u>5 years</u>	<u>10 years</u>	<u>20 years</u>
U.S.A.	78%	65%	54%
AUSTRALIA	66%	58%	49%

It appears that Australian starting salaries are relatively somewhat lower than U.S. salaries. If new Australian graduate received \$4,100 instead of \$3,600, then the three values would become 75%, 68% and 57% respectively which are very close to the U.S. values. Proportionately larger salary increases in the first two or three years after graduation appear to occur in Australia and so restore the balance..

The U.S. salary-experience relationships have remained very steady over the period studies, with the new graduate receiving between 64% and 67% of the 5 years experienced engineer in five out of six surveys. Over the period, the base salary increased steadily, and since the curves maintained these proportional relations, the absolute salaries of the experienced engineers are seen to rise more steeply with each survey. The Australian curves appear to show the same type of trend, but do not display the falling-off in absolute salary which occurs in the U.S. curves after 28 years' experience, or approximately at 50 years of age. This effect appears in the Australian median salaries for professionals in private practice, such as lawyers,

dentists, doctors, but not for those who are largely employed such as chemists, engineers and accountants.

(c) Recent Trends

The new U.S. graduate starting on \$4,000 in 1953 would have advanced to \$11,700 in 1964, since he would then be an engineer with eleven year's experience. This has been shown in Figure Z, together with similar lines for engineers with 10, 20 and 25 years' experience at the first survey. Similar lines have been drawn for Australian engineers using the Gravell survey data so that these cover eight years' experience.

(The tables show the U.S. and Australian annual increases in U.S. dollar amounts and expressed as compound percentages.)

	New Graduate		Experienced Engineer at First Survey			
			5 Years	10 Years	20 Years	25 Years
	Incr.	%	Incr.	%	Incr.	%
U.S. Engineer	700	10.3		775 8.1	663 6.0	555 5.0
Australian Engineer	-	-	242 7.8	350 6.6	345 5.7	337 5.4

There is a distinct similarity between the two sets of data, but the Australian increases are almost half the dollar value of the U.S. increases, and appear to be a flat amount for engineers with ten or more years' experience, whereas the U.S. increases are smaller for the more experienced men.

In both cases, the new graduates will double their starting salaries within six or seven years. The U.S. engineers with 10 years' experience will double their salaries within 9 years while their Australian counterparts will take almost 11 years to do so.

The median Australian graduate with 10 years' experience in 1956 earned US \$4,200 which was 53% of the current U.S. salary, and in 1964 the 10 year median at \$6,050 was still 53% of the equivalent U.S. salary. In absolute terms the salary difference increased sharply from US \$3,800 to \$5,200 over this period.

During the Korean War, a shortage of skilled engineers developed and this led to the first Manpower Commission survey in 1953. The need for engineers in subsequent years was predominantly in the newly emerging technologies of atomic energy utilisation, computers and the complex demands of the "space race" with Russia. In these new fields, graduates who had received the "new" education were by far the best equipped and were available for direct recruitment, so that the demand for young engineers rose sharply. Although defence spending did not expand in Australia over the period, there was heavy investment in major development projects and continued expansion of existing industry and some growth of the new technologies.

Some idea of the occupational changes occurring in the U.S. scene may be obtained from the table in Appendix B. In the 10 year

period 1950-60 the number of engineers increased by 64%, compared with 89% in the previous ten years. The National Science Foundation estimated that the demand for engineers would increase by another 80% by 1970. It is not possible to obtain comparable forecasts of the needs for Australian engineers and scientists.

Despite the number of minor points of difference, the salaries for engineers in both countries have maintained parity over the the last eight years. It is difficult to see that Australian engineers' salaries can be affected by the U.S. changes, but the similarity is remarkable. At present it is difficult for an Australian graduate to migrate to the U.S. It is extremely difficult to obtain permission to work there for two or three years. However, when the new U.S. migration system is introduced in 1968, this will be greatly simplified and a major "brain drain" can be easily predicted. To some extent this will be a diversion of graduates who currently move to the United Kingdom, but the possibility of large numbers taking up permanent residence in the U.S. is very real.

In this case, the differential between U.S. and Australian salaries will become more serious and further rapid salary increases may occur in Australian salaries for engineers. Given the inter-related nature of professional image-fixing in Australia these increases could spread quite rapidly into other professional areas.

D. THE CHIEF EXECUTIVE'S SALARY.

The American Management Association in 1950 set out to develop an industry-wide survey of executive compensation in the U.S. to provide guidelines for salary administration. Their results suggested that the compensation of senior executives is a function of (a) the industry in which the company operates, and (b) the dollar sales volume of the company.

The information published annually by the U.S. companies under the Securities and Exchange Commission requirements includes the amount received by the three most highly paid executives as salary. Information on the dollar value of sales is also published.

The National Industrial Conference Board (i) points out that a wide variety of factors determine the remuneration that a company pays to its top executives. "Especially at the top of the management hierarchy it is the man who is being paid as much as the job itself. The purely personal characteristics of the individual executive have an impact on compensation at this level that is rarely true at the lower levels of an organisation".

- (i) "Compensation of Top Executives". Studies in Personnel Policy No. 173. National Industrial Conference Board Inc. 1959.

(a) Industry Differences

The following chief executives' salaries at annual sales of one hundred million dollars for different industries have been read from the curves fitted to the data in the National Industrial Conference Board report on 1956 salaries.

Salaries are in thousands of dollars.

<u>All Manufacturing Industry</u>		<u>Industries other than Manufacturing</u>	
Primary metals, stone, clay and glass	100	Finance (excluding banks and insurance)	102
Chemicals, tobacco	98	Gas and Electric Utilities	75
Electrical machinery, fabricated metals	91	Retail Trade	73
Paper, machinery, textile and apparel	85	Railroads, mining	71
Transportation equipment, petroleum	81	Insurance	67
Food	67		

There have been attempts to explain these inter-industry differences. Arch Patton (i), a director of the Management Consulting firm of McKinsely and Company, observes that "For the most part, the lower-paid industries lead a more sheltered competitive life. Many are monopolistic in character and subject to governmental regulation of prices and profits....Products and services have

(i) Arch Patton: op cit P.47

tended to change slowly over the year, promotion-from-within as a basic policy is a widespread practice - hence there is little external job competition - and seniority carries great weight in promotional decisions". He suggests that more is demanded of the top executives in steel and glass chemicals, electrical appliances, etc., and that there is much more rapid innovation in product and in its marketing.

Most executives would accept the idea that certain industries are much more competitive, change more rapidly and present greater problems in decision making. If these beliefs are widely shared, they would increase the salaries which would need to be offered before executives would transfer into these industries. However, D. R. Roberts (i), working on the S.R.C. for 410 firms over the period 1945 to 1950 found that 87% of the top three executives in the firms had not changed firms since becoming corporate officers. This suggests that there is a marked lack of mobility at this level. In addition, since much of the value of an executive depends on his intimate knowledge of the firm and its competitors, transfers between industries would appear to be difficult and so infrequent that the salary structure of different industries may largely develop in isolation from each other.

There is no information presently available in Australia which

(i) D. R. Roberts: "Executive Compensation" op cit.

would allow this aspect to be investigated.

(b) The Effect of Company Size on Salaries

The NICB report for 1957 indicates that at one extreme the average chief executive in a steel company can expect a doubling in sales volume to be accompanied by a 29% increase in his salary, while at the other extreme in a textile firm, a 23% increase would be expected. For the 24 industries studied in the McKinsey Survey of 1959, the average rate of increase for doubling sales volume was 21%, with 16 of the industries in the range of 17% to 25% salary increase.

A small number of Australian chief executives' salaries were examined early in 1962 by the McKinsey Corporation (i). It is possible that this sample included mainly executives from the larger U.S. based firms. As these are believed to pay among the highest salaries, the values for salary increases with sales volume at 14% may be high. An unpublished survey in 1965 by a local consulting firm gave a value of 11% across a much wider sample.

On this evidence it appears that Australian chief executives' salaries increase at about 12% compared with the U.S. figure of about double this amount.

- (i) "Executive Compensation - Here and Abroad". Harvard Business Review, September 1962. P. 144.

(c) Relationships between Salaries, Sales and Profits

Using data from McKinsey surveys covering 71 large companies, Patton investigated this relationship. He used the proportion of salary policy. He found that the average profit increase over the period 1948-58 for the top-paying company from each of 13 industries was 227%. The average increase for all of these industries was 117%, while the average increase for the bottom-paying company in each industry was on 20%. He reported (i) that "while some of the high-paying companies did not turn in outstanding profit gains, the incidence of agreement between compensation and profit rate is far above random expectancy" and believed that a definite relationship had been shown to exist.

However, this conclusion has been contested by D. R. Roberts, whose data showed that only 8% of the inter-firm differences in chief executive compensation were associated with differences in their profit rates. He found that 47% of these compensation differences were associated with differences in total dollar profits earned. Change in dollar profits with simultaneous changes in profit rates were associated with 16% of the inter-firm differences.

This suggests that increases in top executives compensation are associated much more strongly with change in dollar profits than the profit rate. Presumably increased dollar profit at falling

(i) Arch Patton: op cit P. 76/

earning rates can frequently be associated with increases in compensation.

These do not establish the probable line of causation and this problem has been examined recently by McGuire, Chiu and Elbing. (i)

Using the SEC figures for 45 companies over the same year period to the dollar value of the annual sales of these firms were examined for possible correlations with salaries on the following hypotheses:

1. Executive compensation is a function of current sales.
2. Compensation is dependent on last year's sales.
3. Compensation is dependent on sales two years ago.
4. The change in compensation between any two years is a function of the change in sales between these years.
5. The change in compensation between any two years is a function of the change in sales that occurred in the previous two year period.

(i) Joseph W. McGuire, John S. Y. Chiu and Alvar O. Elbing. "Executive Incomes, Sales and Profits". The American Economic Review, September 1962. P.753-61.

6. The change in compensation is a function of the change in sales two years before.

The same series of comparisons were made for profits. It was concluded after allowing for interactions between sales and profits that sales and executive compensation are significantly correlated. Profits and executive compensation are not so strongly correlated. The authors concluded that the evidence supported W. S. Baumol's thesis "that the typical large corporation in the U.S. seeks to maximise not its profits, but its total revenues, which the businessman calls his 'sales'".

The net correlation between changes in compensation in one year with revenue or profits in the next year is not significant. This throws considerable doubt on the thesis advanced by Patton that increases in compensation lead to harder work by the chief executive and hence to higher sales or profits.

For the sample firms "the line of apparent causation appears to run from sales to compensation rather than from compensation to sales. That is, in making the decision to increase the chief executive's salary the board is significantly affected by current or past sales levels or by already achieved changes in sales. Compensation is primarily a reward for past sales' results and is not necessarily an incentive to future sales efforts. If it

is an incentive it has not proved to be too satisfactory for these firms for the seven year period of this study". Increased profit thus appears as a result of increased sales, and so correlated with salary increases.

The authors' comment that "The salary of the chief executive is the keystone of the firm's salary administration and so is not likely to fluctuate wildly from year to year, even though a residual amount such as profit may do this. The decision to increase the chief executive's salary would typically be compared with the long term trend in sales, as well as trends in outside salaries particularly for middle management people. The decision made in any one year would be the resultant of decisions made in a series of previous years to either change or not change the chief executive's salary.

"If these incomes are a function of sales, it is not surprising to find that they are significantly related, not only to current sales or changes in sales, but also to past levels and changes. It is likely that the relationship between past sales and current compensation is of lesser significance as the time interval between the two increases."

There is an important question of whether the chief executive can, in any real sense, be said to be in control of the profitability

of the firm. Although the organisation has been set up to achieve this, most of the data collection is carried out at lower levels and carefully filtered information is communicated upwards. This frequently restricts the feasible alternatives so that one decision appears to be markedly superior to the others - so that the chief executive's approval is virtually a foregone conclusion. Provided that adequate checks have been made by the executives supporting this alternative, the chief executive can be said to act wisely. However, he has little chance of examining the basic data and so must trust his executives. Under these circumstances, much of the actual decision influencing and decision making is carried out at middle management levels; although the overall review process is still at the top level.

(d) A Theoretical Approach to the Salary/Size Relationship

Using D. R. Roberts' data (i) for the relation of the average chief executive's salary to the volume of sales, Herbert

- (ii) Simon has proposed a mathematical treatment. He argues that "business, like all large scale organisations, are roughly pyramidal in form because of the heirarchical structure introduced by the authority relation". He points out that the average number of subordinates (n) supervised by a manager within an organisation will not usually vary widely. Again, usually an

(i) D. R. Roberts; "Executive Compensation" op cit.

(ii) Herbert Simon: "Sociometry" - March 1957, No. 20. P.32

appropriate salary differential is maintained between levels such that a superior earns (b) times more than his direct subordinates.

Under these conditions the salary of the chief executive (c) when the number of executives is (s) is given by:

$$\text{Log } C = \frac{\text{Log } b}{\log n} \log S + \text{Constant}$$

This expression is identical with that derived by Roberts when:

$$\frac{\log b}{\log n} = a = 0.37$$

For the levels for "b" and "n" reported earlier for Australian executives, the value of "a" close to 0.37 can be obtained. Thus with "b" at 1.15 and "n" at 1.5 we get "a" = .34, and with "b" at 1.25 and "n" at 2.0 we get "a" = .32.

Simon has taken the step of equating the number of executives in the organisation "S" with the size of the organisation since Roberts' equation was of the form:

$$\log (\text{chief executive's salary}) = n \log (\text{volume of sales}) + b, \text{ where } a \text{ and } b \text{ are constants.}$$

The only warrant for this step is that as the volume of sales increases the organisation finally reaches the stage where another level must be added to the organisation structure.

It is much easier to argue that the 25% increase in the chief executive's salary resulting from doubling the volume of sales indicates that an additional level becomes necessary at the top of the organisation after a certain increase in size and this carries a certain salary margin. If the margin is 25% then this is equivalent to saying the level is added when the volume of sales doubles. If it is 15%, then the organisational level is added when the volume of sales increases by 60%.

This approach requires fewer assumptions about the number of people in organisational levels and has the advantage that it is capable of disproof since company records can be investigated to see the volume of sales when such changes in structure have occurred.

E. EXECUTIVE SALARY STRUCTURE

The 1962 McKinsey Report on Executive Compensation provides the following table: (i)

<u>Compensation of Executives - As % of Chief Executive's Salary</u>				
	<u>USA</u>	<u>UK</u>	<u>AUST.</u>	<u>WEST GERMANY</u>
	%	%	%	%
Second most highly paid Executive:	71	62	65	62

(i) Harvard Business Review - September 1962. P. 144 op cit.

	<u>USA</u> %	<u>UK</u> %	<u>AUST.</u> %	<u>WEST GERMANY</u> %
Third most highly paid Executive	59	52	54	47
Fourth most highly paid Executive	54	47	45	37

These percentages have remained steady in the U.S. over the last twenty years. They apparently represent a widely accepted valuation of these positions. The Australian percentages may be more accurately evaluated in the 1964 A.I.M. survey which explored the salaries paid to executives heading up specific functions.

The results allow the following structure to be developed expressing the median salaries for these three main functions as a percentage of the chief executives salary of £5,880.

	Chief Executive (100%)		
	(Assistant Chief Executive & Executive Directors 73%)		
	Production	Finance	Marketing
Senior	63%	58%	63%
2nd Level	49%	49%	48%
3rd Level	35-37%	39-40%	38-40%

The actual values of these three senior executive positions will obviously vary with the importance attached to his particular function within the firms. However, it appears that the

executives in charge of these three main areas receive approximately 60% of the chief executive's salary.

Second level executives can be identified in each area. In sales, the Branch sales managers and those receiving similar salaries form a definite group with salaries averaging about £2,800. Production executives such as operations managers, chief engineers, etc., constituting the second line, average about £2,850. The equivalent group in the finance area, chief accountant, secretary accountants, etc., average about £2,880. These three groups receive salaries which are 47% to 50% of their chief executives salary.

Again, the third level executive's show median salaries in the range of £2,200 to £2,400 per annum. The starting salaries for university graduates in 1964 in engineering were £1,600 and for science and commerce, about £1,500. Assuming steady salary increases at say 8% per annum, their salaries would reach the third level within four to six years after commencing employment. It seems unlikely that there can be a fourth level of professionally qualified managers given these salary levels. Independent surveys show first line supervisors to be generally occupying the £1,500 to £2,000 per annum range.

SUMMARY.

While more depth may exist in the organisation structure of

large Australian firms for this sample, with a median size of about 450 employees, there appears to be only room for three levels of management between the foreman and the chief executive. The structure suggests that the chief executive has a 27% margin over the assistant chief executive, and that after this, each successive level earns 12% less, giving these levels salaries which are generally 61%, 49% and 37% of the chief executive's salary.

F. EXECUTIVE SALARY REVIEW PRACTICES

In 1950 the Department of Labour and National Service carried (i) out a mail survey of executive policies and practices. Of 300 firms 226 gave some details of the circumstances under which their salaries were reviewed, covering the frequency of review and the factors taken into account.

Reviews at six monthly (20 firms) or annual intervals (138 firms) accounted for 70% of the firms responding. The factors considered were cost of living changes, changes in duties and responsibilities and changes in the salaries being paid in other organisations. Considerations of net profit and performance appeared to be of minor importance.

- (i) Helen Gepp: Executive Salaries - Policies and Practices. Personnel Practice Bulletin. Vol. XVII, No. 1, March 1961.

The 1964 consultant's survey showed that the salaries of 67% of chief executives were reviewed annually, compared with 85% of the other senior executives. The remaining firms were almost all reviewing these salaries every two or three years. It is unlikely that firms subscribing to annual surveys of salary would have a more regular programme of salary reviews than the average Australian firm. Reviews appear to lead very frequently to increases, since 62% of chief executives and 80% of senior executives had received a salary increase in the last 18 months.

Half of the chief executives received an increase of less than 10% of salary at their last adjustment, while 70% of the first line executives receives a less than 10% increase. Three-quarters of the increases were classified by recipients as normal and not due to promotions.

The survey showed that about one fifth of chief executives received increases greater than 20%, whereas only one twentieth of the other executives received increases of this magnitude. It appears that the top level position receives larger and less frequent increases. In addition, a very regular programme of executive salary review and salary increase on an annual basis appears to be common in the sample of Australian firms. The salary increases found here are somewhat larger than those found for employed professionals in Australia. Here the annual salary

increases for engineers with more than 5 years' experience averaged between 5% and 7% per annum. Since the salaries of chemists and accountants have moved consistently upwards in line with the engineers salary, annual increases of this order must also be the pattern for them.

It is interesting to compare this with U.S. practice. The Standard Oil Company of New Jersey is quoted (i) as paying in 1957, merit increases between 4% and 8% of salary with an average of 5% to 6% for management employees, with typical intervals between merit increases of 18 to 24 months.

Again, in a survey by Smyth of 24 large U.S. corporations in 1959, 16 of these had merit increase budgets for management positions and the median value for these was 4% with a range of 2% to 8% of payroll. Similar figures appear from discussion to also be part of the Australian budget picture for the industry. It is apparent that increases of the magnitude shown in the surveys would need to be budgeted well in advance to allow adequate expense planning and cash forecasting.

G. SALARY CHARACTERISTICS

For the 1960 Labour and National Service survey, (ii) 174 out of

- (i) R. C. Smyth: "Financial Incentives for Management" McGraw-Hill New York - 1960.
- (ii) Helen Gepp: op cit.

the 300 responding firms did not have a definite salary structure. Only 40 appeared to have pre-determined salary ranges for executive positions.

A similar survey conducted in 1962 by the U.S. Bureau of Labor Statistics (i) gave the following picture of the frequency of formal salary structures in the white collar occupations in U.S. firms.

Number of Employees per Establishment	Number of Establishments	Percentage With No Formal White Collar System	Percent Formal System with Established Pay Grades for White Collar Occupations	
			Comprehensive Coverage	Limited Coverage
250 - 1,000	9,477	55%	31%	14%
1000 -2500	1,912	30%	53%	17%
More than 2,500	954	14%	74%	13%
	12,343	48%	38%	14%

Here it is apparent that as the size of the firm increases, the likelihood of finding a formal salary structure covering the white collar occupations also increases. The smaller U.S. firms appear to have a more defined system of salary administration than Australian firms of similar size.

- (i) National Survey of Professional, Administrative, Technical and Clerical Pay. op cit.

In Australia, formal salary structures appear to be common amongst the large firms with overseas parents. Companies such as Imperial Chemical Industries, Union Carbide, Unilever, Philips, IBM and the oil and motor companies have these systems.

In many cases the evaluative approach developed by the parent is used with little change, while careful local surveys are made to set the salary ranges.

The Bureau of Labor Statistics, 1961-62 Survey covered 75 occupational levels, and for these, in nearly every level, some of the highest paid employees received twice the salary of the lowest paid employees. This extremely wide spread of salaries for people performing very similar positions also appears in Australian and U.K. surveys and would certainly be not predicted from classical economic theories. The report observed:

"Ranges in the salary rates of employees in established pay grades or work levels within salary structures of individual firms exhibited substantial overlapping between levels. This means that within a firm's structure an outstanding employee in one grade can be paid a higher salary than an average employee in a higher grade job.

The absolute spread between the highest and lowest paid employees within given work levels tended to widen with each successively higher work level for most occupations in which two or more

levels were surveyed". The difference between the salary received by the top twenty-fifth percentile of employees and the lower twenty-fifth percentile has been graphed against the median salary for that grade. (Fig. S)

For engineers, accountants and chemists, the curves appear to be identical.

For a classification with a median salary of \$7,000 per annum 50% of all salaries lie in a \$900 range and this range increases by \$330 for every subsequent \$1,000 increase in the median salary. This suggests that consistent administrative control is maintained within ranges which are not a percentage of the salary but which widen by one-third of each increase in median salary.

The salary ranges under the Federal Classification Act for engineers and chemists are shown in Figure B. It is clear that the median salaries for chemists and engineers in industry correspond very closely with the maximum of the F.C.A. scale for each grade. This suggests that in the absence of other non-cash attraction, the Government would find it difficult to recruit engineers and chemists unless they were being promoted more quickly to a higher grade in the Government, or unless other factors were important.

The similarity in the increases between grades for professionals employed by the Government and by industry suggests that a common system of grading and salary administration has been accepted. This does not imply that industry tried to conform to the Government practices, but it does suggest that industry administers the salaries of its professional employees with a close eye on the current Federal position. With the publication of successive reports, a regular pattern of adjustments will probably be set up.

SALARY RANGES - H

Under the Federal Classification Act, U.S. Government professional employees who are new graduates are classed in Grade 5, whilst grade 11 contains fully experienced people. These grades have an average increase of 9.4% between successive levels. Above this, the percentage increases and averages 11.4% from GS 11 to GS 15.

Using these classifications, the industrial salary patterns show a remarkable constancy in the overall percentage difference between the median salaries for each grade. This was 16.5% for engineers, 17.3% for chemists and 16.9% for combined accountants. The value for clerical workers and engineering technicians was lower at 10.5% and 11.0% respectively.

The F.C.A. ranges are set at plus or minus 17% of the mid-point, so that the lower and upper thirds of each grade are overlapped by the top and bottom of adjacent grades. This is illustrated in Figure B.

A similar approach to the design of salary structures is common in most U.S. texts on salary administration. Discussing practical "graded" salary structures for executives, Patton (i) suggests that in a department store a smaller number of grades with 14% spread between mid-points of each grade may be applicable, whereas in a bank, which is more centralised and formalised, a larger number of grades with only 9% between mid-points may be appropriate. Companies such as Ford and IBM appear to use 12% to 16% difference between mid-points in their structures while oil companies have rather smaller percentages.

E. N. Hay (ii) indicates that differences of 10% to 12% would be appropriate for non-management positions and suggests that the range width should be about 33% of the mid-point. In the same publication, the General Foods Corporation experience suggested that a 15% increase between successive levels was necessary in the managerial/executive salary scales.

(i) Arch Patton: op cit.

(ii) E. N. Hay: "A.M.A. Handbook of Wage and Salary Administration op cit.

Again, J. W. Riegel, (i) in an investigation of salaries paid to scientists and engineers finds that there were typically four or five salary grades in the \$6,000 to \$10,000 salary range with step-ups of 10-15% from one mid-point to the next, whereas clerical grades were as low as 5% since these positions "offered less latitude for the exercise of insight, speed, skills and creativity."

The Commonwealth Public Service salary structure differs considerably from those used in the U.S. and in many Australian companies (see Fig. B). Up to April 1963, the structures for the top twelve grades in Third Division salaries used sub-ranges of £195 per annum for the first five levels, £390 per annum for the upper five levels, with the Sixth and Seventh grades being intermediate in size. The overlap between grades was £65 for the first five and £260 in the upper five levels. This structure was then revised to give the simplest possible series of grades with no overlap, and with equally sized steps of £144 between all grades.

The following tables gives the 1965 salaries for 1,600 qualified engineers, all employed by private firms. These unpublished consultants' figures for salary versus experience are compared with the main engineering classifications at the current public Service Award rate (for a Basic Wage of £819 per annum)

- (i) J. W. Riegel: "The Administration of Salaries for Engineers and Scientists." op cit.

<u>Experience</u>	<u>Number</u>	<u>Lower</u> <u>25%</u> £	<u>Median</u> £	<u>Upper</u> <u>25%</u> £	<u>Public Service</u> <u>Award</u> £
Up to 5 years	531	1,800	2,310	2,600	Class I: 1,608 to 2,300
6 to 10 years	286	2,350	2,510	2,675	
11 to 15 years	270	2,450	2,650	2,875	Class II: 2,400 to 2,750
Over 15 years	445	2,450	2,840	3,350	Class III: 2,900 to 3,250
Chief Engineers	73	3,000	3,860	4,500	Class IV: 3,800 to 4,060
	<hr/> 1,605 <hr/>				

There appears to be a considerable amount of overlap in the salaries paid to Australian engineers with different levels of experience. The argument advanced by Riegel in favour of overlapping salary angles is that the mid-point of the range is for "average performance" and the range allows supervisors to reward high performance. A man performing very well may be paid as much or more than a poor performer in the next higher classification. Overlap is desirable in that it takes pressure off accuracy in drawing the line between two jobs and reduces the need to reclassify a job when small changes have occurred in the job duties and responsibilities. The evaluation system is under much less stress and more flexibility is possible. The Commonwealth system offers

a large number of sub-divisions which can be grouped so as to comprise different salary grades as for the engineering classes above. Overlap is excluded and following this rigidity in classification, disputes must arise in borderline cases. The existence of a formal and agreed classification system together with a Professional Union will probably allow this system to operate tolerably well.

M. Fogarty (i) discussing salary structures in British industry, observes that there is "a series of scales, brackets or salary bands with normal or expected lines of promotion according to age and responsibility. In private industry this whole process is carried on by management with very little intervention by trade unions or professional associations above the level of draftsman, or occasionally, the supervisor or clerk. There may be some mild consultation with staff associations. Assessment by management is less autonomous in the public services, or when applied to skilled workers, for here it is usually associated with collective bargaining. But it still has some autonomy. It prepares the ground for bargaining decisions and is used to apply them in detail, once made.

- (i) Michael Fogarty: "The Just Wage". Chapman London 1961.

I EXECUTIVE ORGANISATION

In April 1964 the Australian Institute of Management (Sydney Division) conducted an extensive survey amongst its member companies. A number of the larger companies did not participate and the survey was largely restricted to companies based in Sydney. About two-thirds of the companies surveyed have less than 500 employees. The survey covered the three top levels of managements, the Chief Executive, the Senior Executives reporting to him, and the executives reporting to these senior people. Replies were received from 199 companies listing 2,391 people in these classifications. The reporting patterns appear below, with average numbers shown.

	Chief Executive				
	Production	Sales	Finance	Other	Total
Senior Executives	1.6	1.9	1.1	0.4	5.0
Second Level Executives	2.1	2.1	1.7	0.1	6.0
	<hr/> 3.7	<hr/> 4.0	<hr/> 2.8	<hr/> 0.5	<hr/> 11.0

For the companies surveyed we have an average of five senior executive reporting to the chief executive, with two executives responsible for different aspects of marketing and frequently more

than one handling the production function. The senior executives in all functions have fewer second line executives reporting to them, the average ranging from 1.7 to 2.1.

In 1959, the Department of Labour and National Service carried out a survey of executive positions in sixty firms in Australian Eastern Capitals (1). Two-thirds of these firms employed less than 750 people and the median appears to be less than 500 employees which is quite similar to the size of the companies surveyed by the A.I.M.

The chief executive was in sole control in 54 firms, while the remaining 6 firms operated under some form of shared control. Of these 54 firms, half had up to four people reporting to the chief executive and in two-thirds of the firms, 3 to 6 people reported to him.

The average value is exactly 5 people per firm which is in complete agreement with the A.I.M. survey.

These senior executives had an average of 2.6 people reporting to them compared with 2.0 in the A.I.M. survey.

The Labour and Industry survey indicated that the mean span of control of the chief executive varied widely with the type of

- (1) F. W. Mahler: "The Span of Control in Sixty Australian Undertakings" Personnel Practice Bulletin - March 1961. P.35.

selling 7.3, and finance 7.5 people reporting to him, Retail selling and finance possibly gain in the numbers reporting to the chief executive by operating at multiple locations.

For the 60 firms in the 1959 Labour and Industry Survey organisation charts had been drawn up in only 30, while another 15 had formalised structures which allowed charts to be prepared. One-quarter had lines of authority and span of control, particularly at the higher supervisory levels, which were not sufficiently clarified to be easily communicated to outsiders. The interesting question of whether the insiders had clear ideas on the pattern of authority in these firms, was not explored.

For the 45 firms the charts indicated a total of 144 senior executives directly responsible to the chief executive who exercised overall day-to-day control. The span here was again distinctly lower than that shown for chief executives. The mean span was almost halved at 2.6 and only five of these executives controlled the activities of more than six people.

<u>Responsibility of Executive</u>	<u>Number of Executives in Class</u>	<u>Mean Span of Control</u>	<u>A.I.M. 1964 Survey</u>
Production & Operational:	57	3.8	2.1
Sales, Merchandising and Advertising:	29	2.5	2.1
Secretarial & Accounting:	37	2.2	1.7
Technical (Engineering, and Research):	21	1.5	

The wider span of control for executives in charge of production and other line operations was fairly general and in addition to works and other line supervisors these executives often controlled maintenance executives, production engineers, inspectors and staff people such as planning, production control and methods officers, chief draftsmen and chemists.

Secretarial and accounting executives had narrower spans of control, which usually embraced the chief accountant and often a paymaster or chief clerk. By far the narrowest spans of control were in technical and specialist functions. Here there were several cases where technical men directly responsible to top managements, had no direct subordinates. These surveys do not give any insight into the spans of control and organisation structure below the second executive level. However, Joan Woodward (i) has investigated the relations between production technology and management patterns in 100 English firms and she concluded that "different technologies imposed different kinds of demands on individuals and organisations....and that these demands had to be met through an appropriate form of organisation.' The results are shown below:

- (i) Joan Woodward: "Management and Technology" D.S.I.R. Problems of Progress in Technology, No. 3 H.M.S.O. 1958.

<u>Type of Production Technology</u>	<u>Ratio of Managers & Supervising Staff to Other Personnel</u>	<u>Median Number of People Supervised</u>	<u>Median No. of Levels of Authority in Management</u>
1. Small batch & Unit Production:	1 in 22 to 1 in 37	21 to 30	3
2. Large Batch and Mass Production:	1 in 14 to 1 in 18	41 to 50	4
3. Process Production:	1 in 7 to 1 in 8	11 to 20	6

It is apparent that process production has three times as many managers, for the same number of employees, as has unit production and that these additional managers occupy twice as many levels of authority. It is likely that the variations found at higher levels for different types of firms will be magnified at lower levels as a result of technological differences so that similar results should be found for the Australian firms.

SUMMARY

While the Australian Chief Executive on average has five first line executives reporting to him, these people have two or three second line executives reporting to them. There is some evidence that the chief executive in retail selling and finance organisations has a wider span of control than manufacturing and

other trading organisations. Again, senior production executives and also sales executives appear to have more second line executives reporting to them. The variability of supervision needs with functional organisation is similar to that observed in U.K. studies. The span of control generally appears much lower than is commonly suggested by writers on organisation theory.

SUMMARY

A striking feature of the available salary data is the steepness of the salary gradings found in practice. In each of the carefully defined Federal classification job grades the best paid people earned more than twice as much as the worst paid people. At the same time, the medians of successive professional grades were about one-sixth higher than that of the preceeding grade, so that median salaries increased very rapidly as positions became more demanding.

Again, in the executive structure, the assistant and chief executive received about three quarters of the top salary and then each lower level in the executive hierarchy showed a median salary a further 12% lower than the preceding median. These percentages relationships appear to be similar in many

countries and very stable in time. This has been described by Barbara Wootton (i) as a "social rather than an economic factor, with the principle that within any one group of employees, those who give orders should normally be better paid than those to whom such orders are given."

In a majority of organisations, there exists an incremental salary scale for each position, even though this is often not clearly stated. Widespread practices of salary review on an annual basis together with the opportunity for surprisingly frequent promotions leads to rapid salary increases for the new professional.

When surveys are conducted, a clear pattern of increasing salaries with age is apparent. These show that engineers appear to be more highly paid in the early years, but that chemists' salaries catch up with increasing age. Probably at this stage both groups are concerned more with management than technical activities. Accountants' salaries appear to lag behind, both in Australia and in the U.S.

U.S. attempts to relate the salary received by the chief executive to the demands made upon him have not been very successful, but there appears to be a definite relationship between the salary paid and the size of the company expressed

(i) Barbara Wootton: op cit - P.64

in terms of annual value of sales. It is probable that past increases in sales become the basis for decisions to increase the chief executives' salary. The argument that increased salaries provide incentives to increase sales is not well supported by these facts.

Attempts have been made by Simon and others to explain the increase in chief executives' salary with size of the company in terms of the increased number of executives supervised. It appears more likely that an increase in the number of levels in the organisation will become necessary given a sufficiently large increase in sales volume. As the extra level became necessary, responsibilities would be recast and the organisation modified, so that higher salaries would apply above the newly established levels.

Age corrected professional salaries have been increasing quite rapidly in Australia over the last 10 years, and the U.S. salaries have risen by closely similar amounts. A watershed in Australian salary administration was the first Professional Engineers' Award, operative across industry and government. This caused a sharp uplift in salaries paid to new engineers and to those with five years' experience. However, the Award did not appear to start, so much as confirm, the strong upward professional salary trend. The second Award, while operating only within

the Government, set salaries for the managers of professional engineers and so produced repercussive effects which have spread to graduates employed outside the Public Service.

While Australian and US engineers' salaries have maintained customary proportional relationships, the actual dollar differences have increased sharply. Under the revised immigration quotas which will operate in 1968, we can expect a "brain drain" to the U.S.A. which will in turn, stimulate further rapid salary increases in Australia to reduce these very large differentials.

Annual increases of the size found in Australian industry and Government salaries require careful planning, budgeting and control if the organisation is to be able to use its resources to the best effect. Salary policies are needed which allow recognition of the above average performance and special achievements by means of salary increases, if adequate motivation is to be maintained. There is little doubt that the company respondents to the surveys believe they are developing forms of professional salary administration which will have these characteristics. While individuals may be critical of their employers' salary policy and procedures, these complaints typically refer to the incomplete communication of details rather than appear as objections to the practice of salary administration.

APPENDIX I

SURVEYS OF GRADUATES' SALARIES IN AUSTRALIA

A. CHEMISTS

A series of surveys was carried out over the period 1953 to 1962 by the Royal Australian Chemical Institute on the salaries paid to its members.

Mr. K. Gravell of the University of Melbourne Appointments Board, also surveyed chemists' salaries in 1956 and 1964.

There are a number of points of interest.

(1) The Effect of Age on Remuneration

The following table shows this effect:

Age Range	RACI	RACI	GRAVELL	RACI	RACI	RACI	GRAVELL
	1953	1955	1956	1957	1960	*1962	1964
	£	£	£	£	£	£	£
21 to 25	980	1160	-	1330	1620	1720	1680
26 to 30	1100	1350	1410	1475	1780	2000	2090
31 to 35	1300	1550	1660	1740	2070	2320	2420
36 to 40	1560	1720	2130	1960	2360	2720	2760
41 to 45	1770	2240	2080	2160	2580	3000	3050
Overall Difference	790	1080	-	830	960	1280	1370
* The 1962 survey based salaries on years' of experience. A qualifying age of 21 years has been assumed in this table.							

The median salaries of these successive five year age groups show a definite increase. In the early surveys the difference is about £45 for every extra year and in the last two surveys

it is about £60 for each year.

If valid salary comparisons are to be made between groups with different median ages, an appropriate correction must be applied.

(2) The Change in Median Salaries

For successive RACI surveys the table below shows corrected median salaries where age differences have been allowed for at the rate of £50 per year.

		<u>1955</u>	<u>1957</u>	<u>1960</u>	<u>1962</u>
Median Salary	(£)	1574	1821	2227	2451
Median Age	(years)	35.4	36.4	37.4	38.5
Correction (to 41 years)	(£)	280	230	175	125
Corrected Salary	(£)	1854	2051	2402	2576

Over the seven year period the corrected median salary increased at the compound rate of 5.3% per annum. For the first five years the increase was 5.8% and from 1960 to 1962 this fell to 3.8% per annum. The recent survey for 1964 by K. Gravell gives a corrected median salary of £2,950 indicating an annual increase of almost 7% over the most recent two year period. However, this survey only covered RACI members in Victoria and some of the apparent increase may be due to this difference in the samples. The change from 1956 to 1964 as measured by Gravell is 55% over the

eight years, or 5.6% per annum compound and this is in very close agreement.

(3) Employment Pattern

There has been little change in the percentage distribution of chemists amongst employers over the survey period. This is shown in the following table from the RACI surveys:

Date of Survey	E M P L O Y E R				
	Private Industry	C'wealth Govt.	State Govt.	Local Govt.	Universities & Colleges
1957	56%	16%	11%	1%	13%
1960	56%	16%	11%	1%	13%
1962	57%	15%	11%	1%	12%

Governments - State and Federal - employ a steady 30% of these chemists, and only 2% are self-employed. A surprisingly large percentage (12-13%) are employed in tertiary teaching institutions.

(4) Difference Between Employers

The information given in the two surveys conducted by K. Gravell shows differences in salaries between the three main employers. Here the necessary median age information has been given so that proper comparisons can be made. The corrected values are shown below:

	Lower 25%			Median			Upper 25%		
	1956	1964	Diff.	1956	1964	Diff.	1956	1964	Diff.
	£	£	£	£	£	£	£	£	£
Commonwealth									
Government:	1640	2630	990	2050	3070	1010	2760	3810	1050
Industry:	1760	2485	725	2020	2885	865	2520	3535	1015
State									
Government:	1530	2400	820	1750	2600	850	1990	3050	1060

The median Commonwealth Salary in 1956 was £40 greater than that paid by private industry and £310 greater than the average paid by State Government (which uses a large staff of low paid analysts). In 1964 this difference had increased to £385 above industry and £470 above the State median.

The interquartile range increases for each of the three main employment groups. The greatest increase occurred in private industry and this brought its range close to that of the Commonwealth.

The 1962 survey of the RACI divided government employed chemists into those in the Public Service and those in Authorities. The median salaries for these two Commonwealth groups were £2,336 and £2,765 respectively. The State Public Service median salary was £2,180 and for those employed in State Authorities the median was £2,224. The difference of some £400 in the two parts of the Commonwealth is due to the special pay and promotion policies adopted

by the Commonwealth Scientific and Industrial Research Organisation, a significant employer of chemists.

Most of the high salaries are paid by industry. In the 1957 RACI survey 21 of 28 people receiving more than £5,000 were from industry and six were self-employed. Of this group, 22 gave actual salaries and these averaged £8,015 per annum. In the 1960 survey, 66 out of 85 people receiving more than £5,000 were from industry, seven were self-employed and five from Commonwealth.

(5) Salary for Different Functions Performed

The following table illustrates the different median salaries (age corrected) paid to different functions in the 1957 survey:

	<u>Administ- ration</u>	<u>Analysis</u>	<u>Production</u>	<u>Develop- ment</u>	<u>Research</u>	<u>Univer- sity</u>
Number	407	266	279	159	359	130
Salary £'s	1975	1480	1740	1660	1790	1890

The highest median salaries went to chemists in Universities and to chemists in industry who function in an administrative role. Those classed as production fill many first and second line management positions. The Administrative group who are older men appear to be part of the upper management structure of industry and government.

B. ENGINEERS

Two Australia wide surveys were carried out by the Association of Professional Engineers of Australia (APEA) in 1955 and 1959. Two surveys by Mr. K. Gravell in 1956 and 1964 covered only the Victorian Branch of the Institution of Engineers, with 2,338 respondents in the latter survey. Membership of the APEA is limited to employed engineers holding professional qualifications recognised by the Institution of Engineers. The memberships are identical except for the exclusion of self-employed engineers from the APEA.

(1) The Effect of Age on Remuneration

A pattern of annual increases was apparent here. For all age groups this ranged from £45 to £50 per annum for the APEA surveys and £40 to £45 per annum in the Gravell surveys. A value of £45 has been used to correct for age differences.

(2) The Change in Median Salaries

(a) Starting Salaries:

The APEA survey showed that in June 1955 the median starting salary for the Commonwealth was £1,000 and for industry it was £1,050. In 1960 the starting salaries for these employers were £1,290 and £1,300, with the State Governments paying £1,350. In the 1964 survey, all

paid £1,600 in line with the Professional Engineers' Award.

Thus over this nine year period the starting salary increased 57% overall, or a compound annual increase of 5.2%.

(b) Median Salaries Corrected for Age:

These have increased from £1,810 to £3,150 from 1956 to 1964, an increase of 74% overall. This represents a compound annual increase of 7.2% per annum.

(3) Employment Pattern

The table show the percentage distribution of engineers amongst employers over the survey period:

Date & Type of Survey	E M P L O Y E R				
	Private Industry	C'wealth Govt.	State Govt.	Local Govt.	Universities & Colleges
APEA 1955	21%	20%	43%	10%	
Gravell 1956	22%	21%	37%	11%	
APEA 1957	24%	18%	41%	11%	
Gravell 1964	25%	19%	31%	9%	4%

Only 4% of engineers are self employed. The most striking feature is that Federal, State and Local Governments, together employ 60% to 70% of qualified engineers. There appears to be a decline in the importance of the State Governments and their instrumentalities as employers and an increase in that of the private sector over this period.

(4) Salary Differences Between Employers

The table shows the age corrected salaries paid by different employers in the Gravell surveys.

Employer	Lower 25%			Median			Upper 25%		
	1956	1964	Change	1956	1964	Change	1956	1964	Change
	£	£	£	£	£	£	£	£	£
Self	1770	3000	1230	2600	4000	1400	3290	6000	2710
C'Vealth									
Government	1640	2820	1180	1980	3290	1310	2270	3700	1430
Municipal									
Government	1640	2800	1160	2080	3160	1080	2290	3680	1390
State									
Government	1360	2740	1080	1660	3020	1360	1910	3520	1610
Private									
Firm	1650	2670	1020	1980	3160	1180	2470	3800	1330

The median earnings of private practitioners are superior on both occasions. The state and Federal Government medians have increased by similar amounts and although the State salaries are still the lowest, the gap has been narrowed. Municipal Government median salaries have risen least and now equal those of industry.

The interquartile range of salaries has increased in every case over the period. Of the employing groups, private firms have the biggest range and this may be the result of an attempt to recognise merit to a greater extent than the governmental employers can do.

The two APEA surveys showed a strong upward trend over the two years 1955-57. Median salaries increased by £250 to £290 for Commonwealth, State and Industry.

University salaries only increased by £140, whereas the municipal engineers, as a result of a new award, rose by £370, a 25% increase.

C. ACCOUNTANTS

The main information here is derived from the two Melbourne University Appointments Board surveys conducted in 1956 and 1964 by Mr. K. Gravell. These covered Victoria only in 1964 and included 5,674 replies from members of the Australian Society of Accountants, and the Institute of Chartered Accountants of Australia.

(1) The Effect of Age on Remuneration

The pattern of salary increases with age was apparent in these two surveys. The value was £30-35 per year.

(2) The Change in Median Salaries

In 1956, the median salary was £1,600 and in 1964 this

was £2,500 (corrected to 41 years at £30 per annum).

This is an overall increase of 56% over the period,
giving a compound annual rate of 5.7%.

(3) Employment Patterns

The percentage distribution between employers is as follows:

	<u>Sole Practitioner</u>	<u>Private Industry</u>	<u>Commonwealth Government</u>	<u>State Govt.</u>	<u>College or University</u>
1956	14	49	12	9	1
1964	14	50	10	8	1

The percentage of sole practitioners is higher at 14%

while employment by governments is low, at 18-21%.

Industry employs 50% and Universities and Technical

Colleges play a minor role employing only 2% of respondents.

(4) Salary Differences Between Employers

Age corrected salaries are shown in the table below:

Employer	Lower 25%			Median			Upper 25%		
	1956 £	1964 £	Diff. £	1956 £	1964 £	Diff. £	1956 £	1964 £	Diff. £
Self	1515	2530	1015	2085	3440	1355	2955	4090	1985
C'wealth									
Government	1370	2210	840	1620	2420	800	1810	2760	950
Private									
Firm	1360	2040	680	1600	2490	890	2020	3140	1129
State									
Government	1200	1900	700	1400	2185	785	1700	2755	1055
Sole Prac- titioner	1350	2020	670	1520	2350	830	1700	2800	1100

As with the engineers, the "salaries" of private practice are definitely superior on both occasions to those paid by employers. The median salaries paid by the Commonwealth Public Service and by private firms have continued to be very close, with the latter moving ahead by £70 per annum. State Government median salaries have continued to lag quite badly. Accountants employed by sole practitioners presumably have an additional incentive in the possibility of entering into partnership and their salaries have maintained their 1956 relativity to other employers.

The interquartile range of salaries has increased in every case over the period. The range is much greater for self employed accountants, probably reflecting the risks and rewards inherent in private practice.

APPENDIX B**Employed Civilian Workers in Selected Occupational Groups**

Occupational Groups	Number (in thousands)			Percentage Increase	
	1960	1950	1940	1940/50	1950/60
All employed persons:	64,639	56,435	45,070	25.2	14.5
Prof., Tech & Kindred:	7,232	4,921	3,580	37.5	47.0
Engineers:	854	520	276	88.6	64.3
Natural Scientists:	149	117	*	*	27.7
Elec. & Electronic Techn:	91	12	*	*	679.2
Other Technicians:	184	91	*	*	101.8
Other Prof., Tech. & Kindred:	5,954	4,181	*	*	42.4
Managers, Officials and Proprietors:	5,410	5,037	3,634	*	7.4
Salaried:	3,388	2,509	*	*	35.0
Self Employed:	2,022	2,528	*	*	-20.0
Clerical & Kindred:	9,307	6,954	4,382	58.7	33.8
Sales Workers:	4,639	3,907	3,081	26.8	18.7
Manual Workers:	23,746	22,437	16,394	36.9	5.8
Craftsmen, Foremen, etc.	8,741	7,821	5,171	51.2	11.8
Operatives:	11,898	11,180	8,080	38.4	6.4
Labourers (Excl. farm & mine):	3,108	3,436	3,143	9.3	- 9.6
Service Workers:	7,171	3,436	5,292	7.9	25.6
Agricultural Workers:	3,950	6,728	8,290	-18.8	-41.3

* Data Not Available.

Table ex: Rutzich, Max and Swerdloff, Sol - The Occupational Structure of U.S. Employment 1940-60. Monthly Labour Review, November 1962.

APPENDIX C

COMPARISON BETWEEN EMPLOYED PROFESSIONAL GROUPS 1961 IN U.S.A.

Position Covered by FCA Classification	Average Salaries				FCA Salary Ranges \$ U.S.	
	Accountants	Chief Accountants	Chemists	Engineers	Minimum	Maximum
GS5	5,880		6,120	6,708	4,565 to	6,005
GS7	6,456		6,912	7,488	5,540	7,205
GS9	7,416		7,956	8,652	6,675	8,700
GS11	8,988	9,972	9,936	10,248	8,045	10,165
GS12	10,872	11,460	11,976	11,880	9,475	11,995
GS13		13,152	13,464	13,740	11,150	14,070
GS14		15,192	16,524	16,608	12,845	16,245
GS15			18,984	19,572	14,565	17,925
Total Number:	46,583	2,492	26,445	246,813		

(Source: National Survey of Professional Administrative, Technical and Clerical
Pay - Winter 1961-62. Bulletin 1346. U.S. Department of Labour)

US BUREAU of LABOR STATISTICS
1961 SURVEY

FGB

-E Median Engineers Salary
XC Median Chemists Salary

US
Dollars

20,000

18,000

16,000

14,000

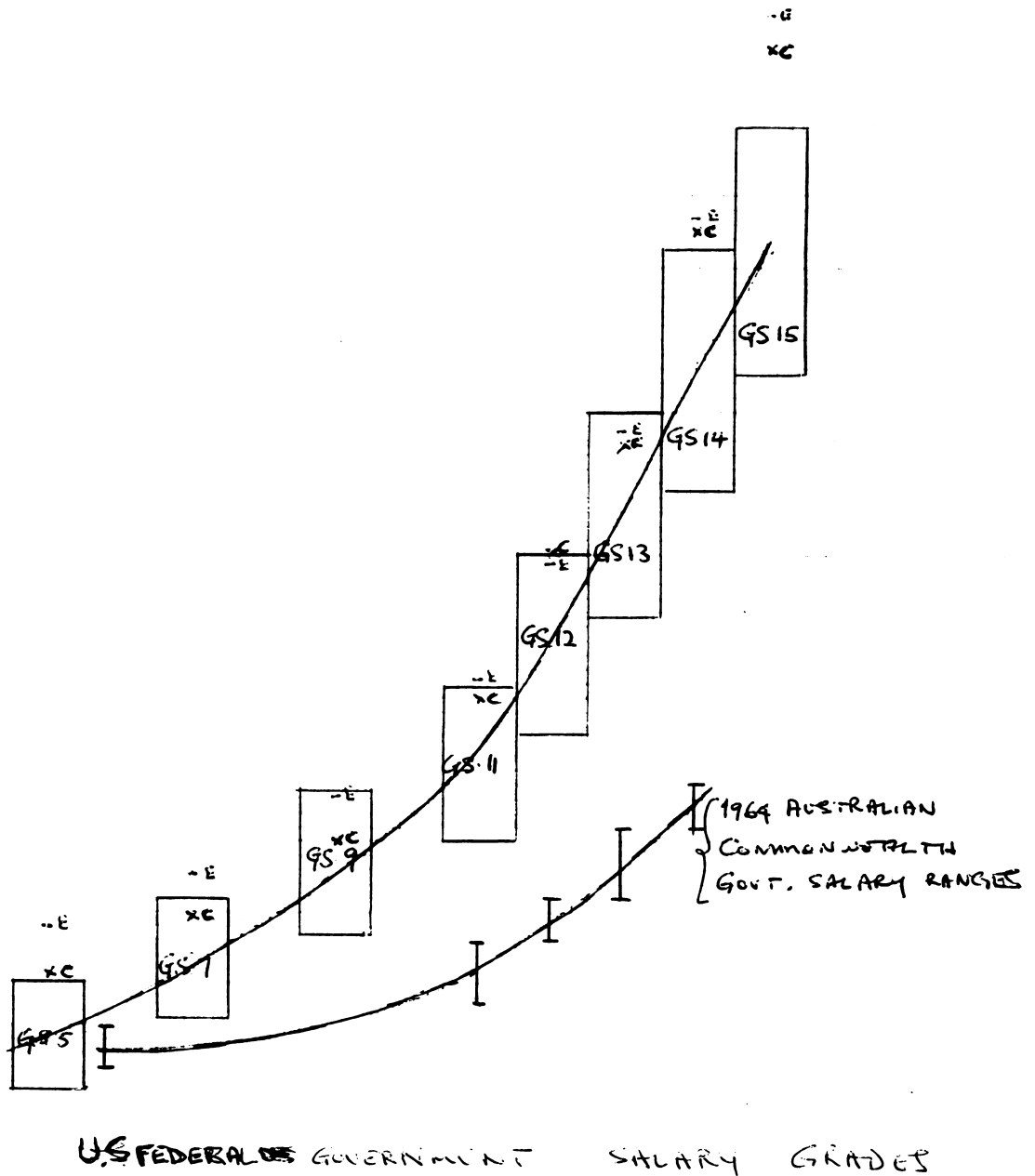
12,000

10,000

8,000

6,000

4,000



PERCENT

FRI L

REAL AUSTRALIAN MEDIAN SALARIES

110

160

150

140

130

120

110

100

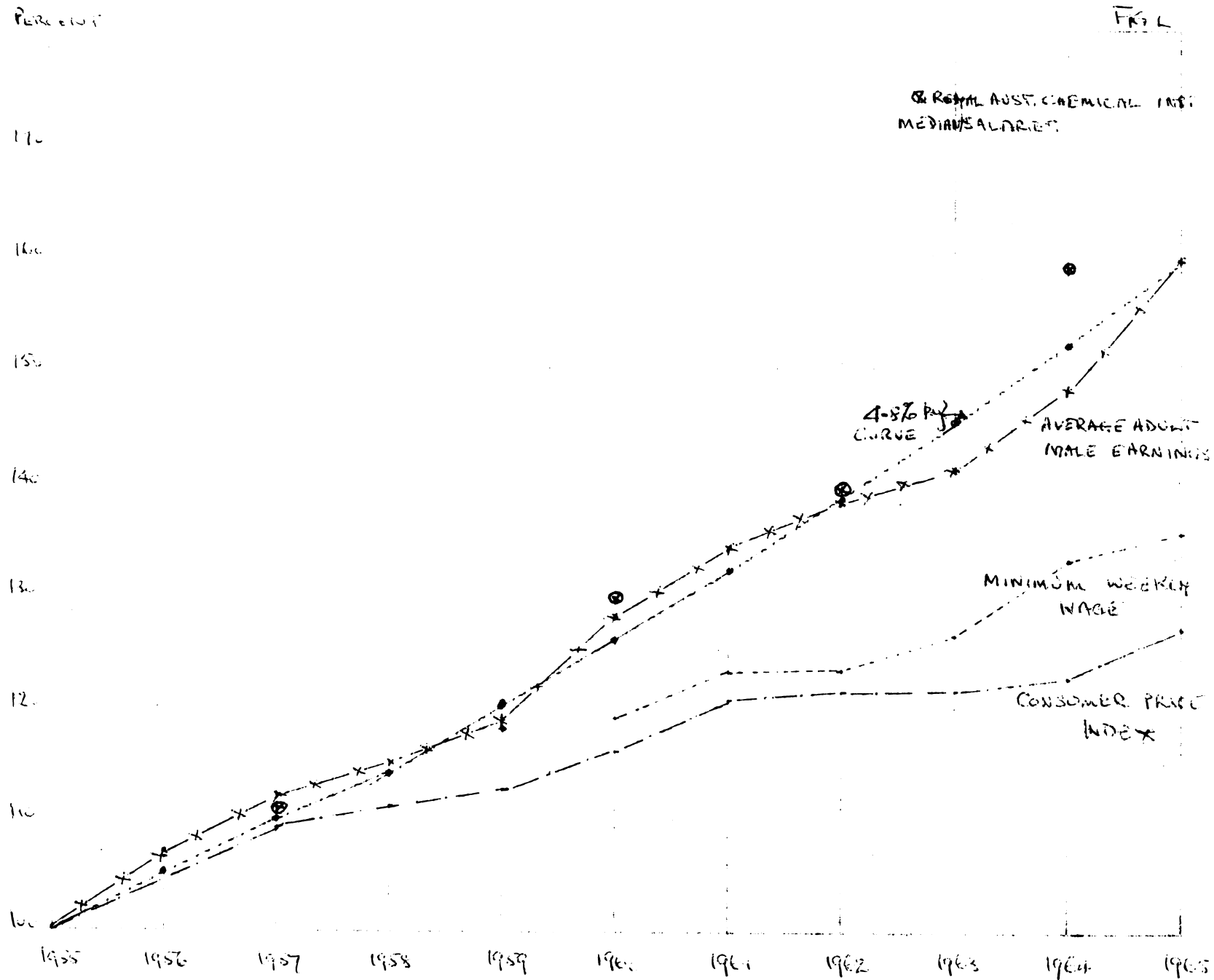
4-8% PY
CURVE

AVERAGE ADULT
MALE EARNINGS

MINIMUM WEEKLY
WAGE

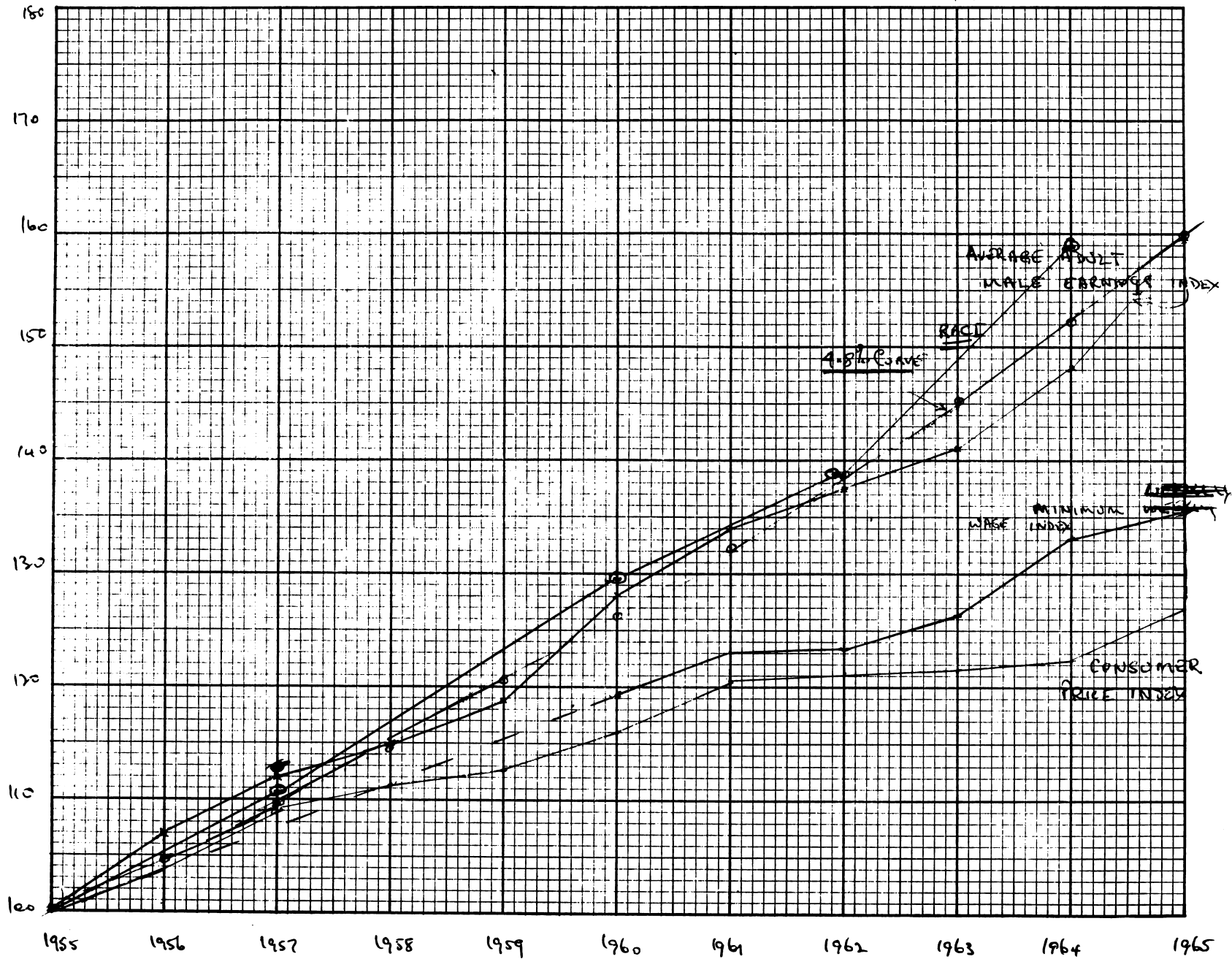
CONSUMER PRICE
INDEX

1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965



INDEX

FIG. L



£A per annum

CHANGE IN MEDIAN SALARIES WITH EXPERIENCE

AUSTRALIA 1956 to 1964

FIG. 2

Chemists

Accountants

Engineers

4000

3600

3200

2800

2400

2000

1600

1200

5 yrs.

10 yrs.

15 yrs.

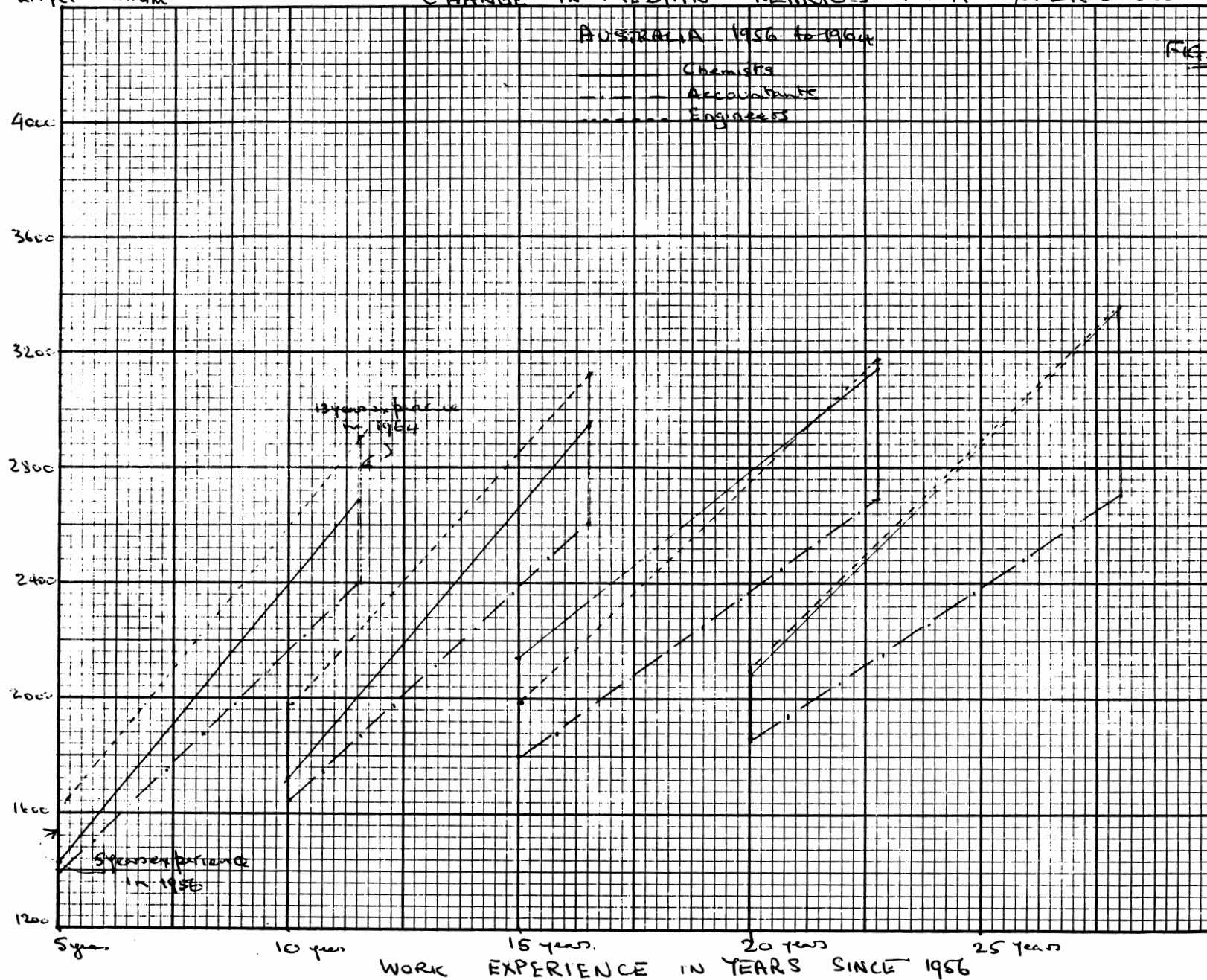
20 yrs.

25 yrs.

WORK EXPERIENCE IN YEARS SINCE 1956

13 years experience
in 1964

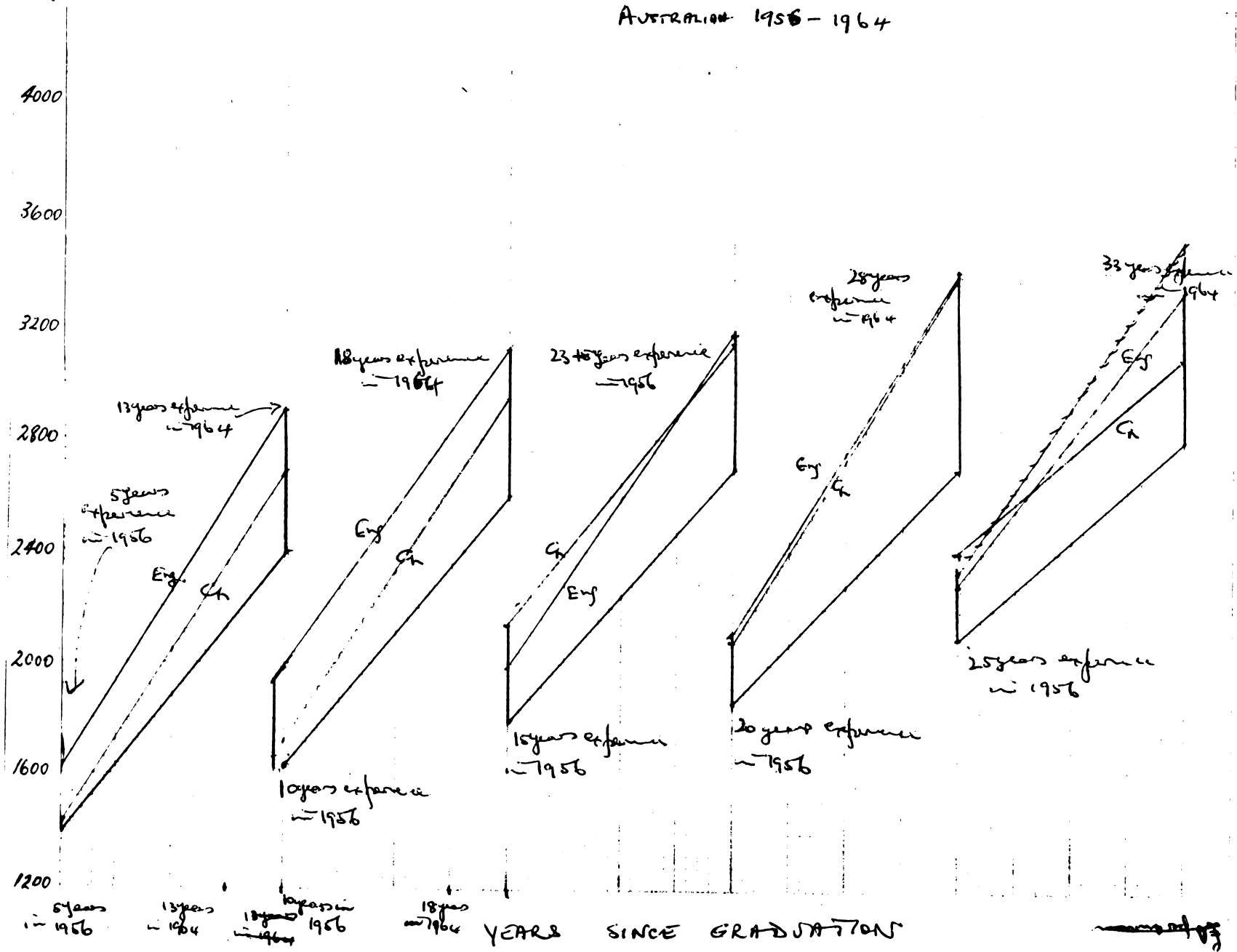
5 years experience
in 1956



2 Apr 1964

CHANGE IN MEDIAN SALARIES WITH EXPERIENCE AUSTRALIA 1956-1964

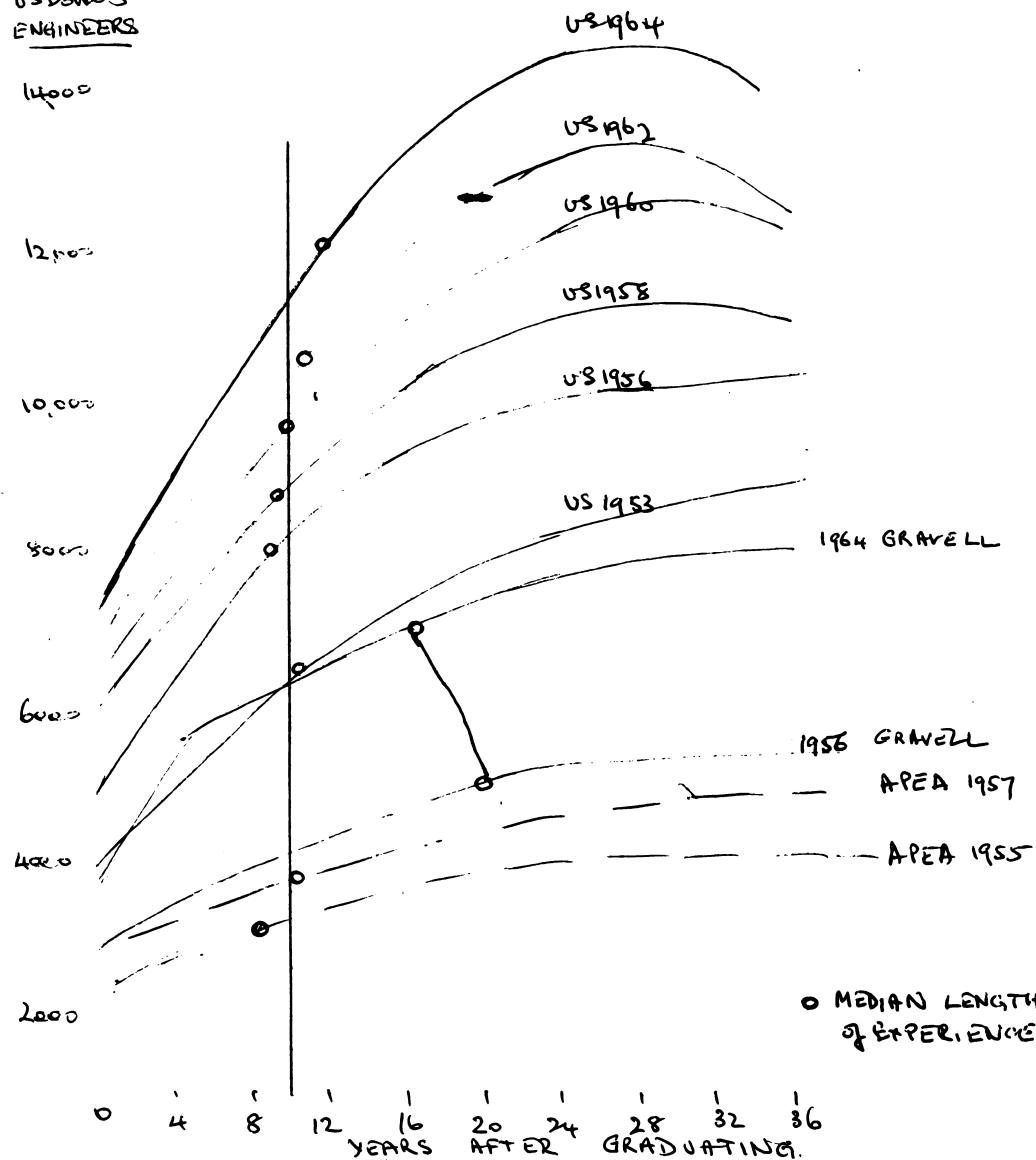
FIG R



ANNUAL
SALARY
US DOLLARS
ENGINEERS

US. ENGINEERING MANPOWER COMMISSION
SURVEYS.

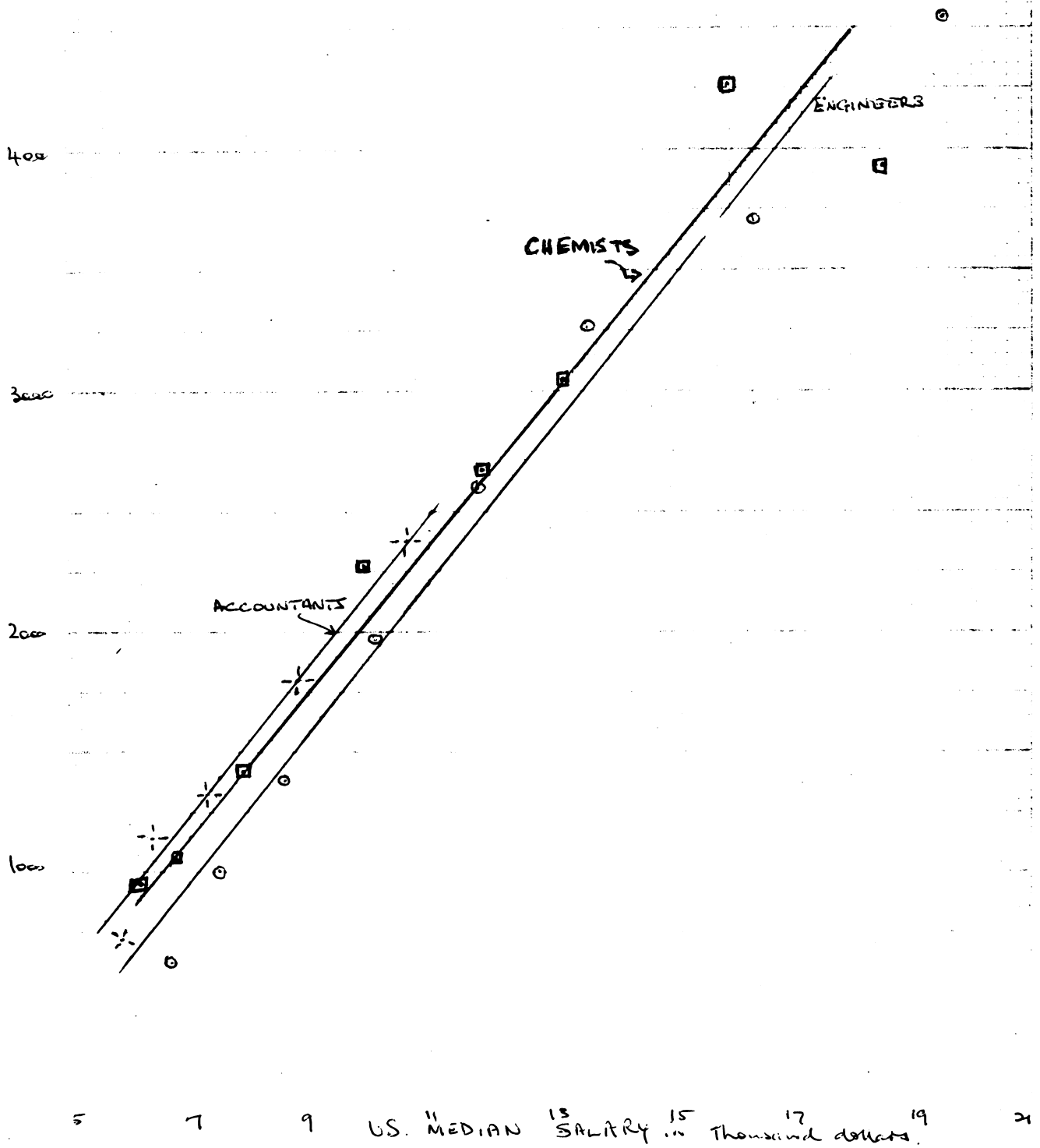
FIG 1



INTER-QUARTILE
DIFFERENCE
BETWEEN FCA GRADES

U.S. BUREAU OF LABOR STATISTICS SURVEY FIGS
1961-62

Dollars
US



US Dollars per
hour

FIG. 2

