



## CHAPTER 12

# Men and Organization

R. W. HARMAN

*The growth of organizations with over 10,000 men employed in diverse activities spread over wide distances is a fairly new thing in man's affairs. Until little more than a hundred years ago the responsibility for control of such large numbers of men was restricted almost exclusively to governments and their armed forces. In this chapter the General Manager tells how C.S.R. pioneered and developed ways of organizing the efforts of men and women on such a scale in the South Pacific. He describes the way in which men are selected and trained to staff the organization, and the qualities which, in his experience, make for leadership in industry. He also discusses the characteristics whose application in business contributes to profitability and general economic progress.*

*Dr R. W. Harman was born in Nelson, New Zealand, brought up on a dairy farm in the Hamilton district, and educated in Hamilton, Auckland and London. He joined the company in 1924 as manager of the research department and served in a number of responsible positions before becoming General Manager in 1951.*

March 1956

THIS chapter gives a straightforward and sometimes detailed account of our organization and how we man it, and I believe that the facts thus presented will speak for themselves. It is not my intention to give a technical account of the theory or theories of company structure and management. The theories and principles are reflected in the practice, as far as we have been able to evaluate them and put them into operation in our particular type of business and in the conditions applying in the South Pacific.

My task, therefore, is to describe the organization of C.S.R. and to give a picture of the men who fill the various positions in it and who give the company vitality and, I have no doubt, a positive personality. Companies vary in this respect and they change as time passes and as circumstances and environment alter.

The character of a company develops from many things—the type of business in which it engages, the localities and communities where it operates, the structure of its organization, the policies and methods used to pursue its objectives and, of course, the nature of those objectives. It is affected, very importantly, by its leadership and therefore by the kind of men chosen by shareholders for the board of directors, by the kind of men engaged, under the policies of the board, for the staff, and especially by those promoted to senior management.

### *The Foundations of Employee Policy*

At the outset, I quote some remarks made by Mr E. W. Knox at the general meeting of C.S.R. shareholders in its jubilee year in 1905 which indicate something of the character of the company at that time and its attitude to the employees:

For once—in fifty years—I propose to break the salutary silence observed by the Manager at these meetings, and to say a few words about those who, with me, serve the company, and whom you have just thanked for the work they have done.

To the development of which the Chairman has spoken, they have contributed; but I am sure that they recognize the fact that the work they have done has to a large extent been influenced by the liberality shown by the Board in fixing the conditions of employment.

Now, the first of these is that each and all of us shall have plenty of work, and this rule has always been observed so far as to keep our minds and muscles healthy by a sufficiency of exercise.

Then we are told that we must be always a little better off than men in other services, and in consequence the wage earners

have more regular work, the salaried men more allowances, and all, I believe, somewhat more pay.

Thirdly, the Board have given most liberal support to the Benefit Society for the wage earners and the Provident Fund for all grades of the service, and thus our employees are helped in providing against sickness and old age.

Finally, it is the constant aim to avoid the centralization which tends to relieve men away from the Head Office of the responsibility which should attach to them, and this is one reason why a business, stretching from Fiji to Fremantle, can be worked with some measure of success.

With such terms of employment you have the right to expect willing and hearty service, and this you have got. To the staff generally the progress of the company brings pleasure and pride, and there must be many besides myself who would gladly live over again the years of interest they have spent over your affairs.

As to the future, well, I have seen too many changes to wish to pose as a prophet, but I will venture to say that if you keep as hitherto a strong and contented staff, and this staff be led by men who regard successes as the forerunners of trouble, and can always be trusted to feel in times of danger the elation of spirit which difficulties bring to those who mean to overcome them, you need not fear what man can do unto you.

Although there have been many changes in the company in the quarter of a century since E. W. Knox died, most of them are a natural growth from the solid foundations which he laid. The change is least in the type of men who constitute the staff and in the basic characteristics of the company. Conditions of employment remain good. Work remains plentiful; responsibility is still widely spread; and the staff continues to have a sense of purpose and to tackle with zest the difficult and sometimes exciting problems of our time.

### *Men and Objectives*

Sir Edward Knox, chairman of the board since Mr E. W. Knox retired in 1933, has stated in his introduction to this book the broad aims and objectives of the company. Men need objectives, ends towards which to strive, and often they seek them as members of a group. The staff of C.S.R. is such a group, within which a high degree of voluntary consent is given by individual members to the group objectives, however difficult it may be to reduce those objectives to simple definition. Within the company there is considerable agreement on the unwritten

code to be followed in achieving its ends. The knowledge that important economic and social consequences flow from policy decisions and the resultant actions helps to develop a wide sense of responsibility.

The means by which capital provided by the owners can be applied to attain the company's objectives can be thought of in three categories, although in action they are interlocked and interdependent. First, the organizational structure provides the framework; but it is only a framework—static, bare, not human. Secondly, the character of the men on the staff, their education and development, and the values they respect clothe the framework, make it viable and give it human values. Thirdly, leadership and guidance are vital as means of achievement and they involve both planning and execution—determining first what needs to be done and then seeing that it is done. For, while the typical businessman may not be on the same intellectual plane as the professor, he puts the whole power of his will into the realization of his ideas. Knowledge, rather than practical results, is the goal of the professor, as a true scientist, and the fact that he has gained and can pass on knowledge is often satisfaction enough. Achievement, rather than knowledge, remains the test in business.

Not only must we in business have ideas that are sound and plan what we should do, but the plans must be well carried out. One of the important factors of life is this capacity for execution, the ability to direct one's whole energies towards the fulfilment of a particular task. Usually at the head of business affairs are men not only of sufficient intellectual ability to plan, to determine what should be done, but also with sufficient executive ability to follow up and force these plans to realization.

### *Organizational Structure of the Company*

The basic organization is inherited from the period of growth under E. W. Knox, but the company has changed in many ways since his time. It is much bigger, even in its main business of sugar. It is much more diverse, having large activities outside sugar. Along with this growth in manufacturing operations there has been an increase in the number of people employed, and the variety of manufactures has called for greater diversity in technological and commercial skills. The technological section has always been strong, but, in expanding from sugar to distilleries and then to building materials and chemicals, our engineers and chemists have not only increased in numbers but also in their ability to initiate, develop and manufacture the new products. The marketing and the general commercial sections have

also increased and developed in comparable strength, because it is no use making things unless they can be sold, and sold at a profit.

It will have been realized from other chapters in this book that C.S.R. is organized into operating divisions based, for the main part, on the type of product or service. For example, the seven sugar mills in Australia are grouped together in one division and the six refineries in another. The divisions of the company are:

- Refineries, Australia and New Zealand;
- Raw sugar mills, Australia;
- Raw sugar mills, Fiji;
- Sugar marketing;
- Distilleries;
- Ocean vessels;
- Building materials;
- Industrial chemicals.

The factories and operations of these divisions are spread from the Indian Ocean across the South Pacific and extend to London, but the heads of these divisions are all at headquarters—the company's Head Office at 1 O'Connell Street, Sydney. This is also the seat of management of the company, and here the board of directors meets.

There is a good deal more to the management of a company than merely bringing together in one building the heads of divisions, the general manager and the board. For one thing, the operating divisions have to work to certain common policies and many of their activities have to be co-ordinated. For another, specialist departments have to render service to those in the direct line of control of divisions. Further, shareholders' and general company matters have to be administered and, most important of all, the business has to be considered and ordered as an all-encompassing whole.

Each division is organized in a line of control, which means that control at various levels of management is centred in single individuals and no one has two or three different masters. But so much special knowledge and experience is required today that specialist departments outside the direct line of operations have to be brought into action too. The working-in or integration of these specialist departments, or functional departments as they are sometimes called, is a difficult matter and the method varies among companies, but a smooth, efficient working-in is necessary for success. Further, the services of these functional departments have to be applied not only to particular divisions or activities but to the organization of C.S.R. as a whole.

The main functional or specialist departments are the secretary, central accounting, central engineering, central chemical, research, industrial and staff.

### *The Tasks of Leadership*

To unite in co-ordinated action the work of the divisions and of these functional departments which serve the company as a whole, to know what to do and how to do it and why it has to be done, to see that it is done, to view the business as a whole and ensure that it is successful, to communicate these conceptions to others—in other words, to provide direct leadership to the staff and to administer the company—is the job of the general manager. Obviously, this administrative work in a company such as C.S.R. is beyond the powers of a single individual so to assist the general manager are two assistant general managers and two senior general executives who, with him, form the general management group.

The company's basic structure is illustrated by the chart *Organization of C.S.R. Headquarters* but this gives only a bare outline and I now give a brief description of its working in practice.

At the head of the company is the board of directors. The present board consists of six directors: the chairman, Sir Edward Knox, with four directors of varied background and experience and myself as general manager. None of them, except myself, are employees of the company. As general manager I am both the executive officer of the board of directors and the administrator of the company. The general manager may, or may not, be a director, and he is the only executive officer who regularly attends board meetings.

The general management group considers all matters of importance to the whole organization arising from any part of it. Each of the assistant general managers and senior general executive officers is also responsible for general supervision of several of the divisions and service departments, but the administration of these divisions and departments is left to the respective heads. It is the function of the general management group to see that, wherever practicable and desirable, common policies are pursued in the different parts of the company. This group helps to decide what should be done and keeps watch to see that the plans are being carried into execution. It has further responsibilities, such as to see that the right men are secured for the staff and that they are trained and developed and given changes of experience, with opportunity for promising men to advance; that new ideas and tools of business are explored and, if good, put into use;

that new products and enterprises are considered and that the risks and rewards are evaluated; that proper use is made of the specialist departments that do not belong to individual operating divisions; that matters affecting more than one division are handled in each division to the full advantage of the enterprise as a whole; that difficult matters are brought to the stage of positive decisions and that action flows from these decisions. The general management group must ensure, too, that the organizational structure is such that the work of various parts can be co-ordinated readily; that co-operation is obtained; and that there is not only quality of decision but speed of decision.

Somewhat similar authority and responsibilities apply to the various levels of management, but with some changes of emphasis and restriction of scope. Leadership must continue all the way down. The health of the organization is as dependent upon good leaders, administrators and executives at the lower levels as at the top. Even the most able men at the top are almost helpless unless the junior officers and N.C.O.'s are capable, energetic and of good character.

All the men in the general management group, and indeed most of the executives in the company, have served in the enterprise almost all their working lives. The four senior general officers were, by early training, a chemist, an economist-accountant, an engineer and an agriculturist. They have worked up through the company in different activities. Their offices are adjacent to one another and to mine and a wide range of experience and ability is thus brought to bear without delays upon all our problems.

At the level of the divisions some degree of separateness is necessary. The heads of divisions are concerned primarily with getting results from them and this is assisted by a degree of separateness which helps them to pursue their individual goals. General management's goal is the success of the company as a whole—all the divisions and functions taken together, and close physical proximity and daily personal discussions of members of the general management group facilitate its attainment. It would not be sensible to place all the heads of divisions together as a group, but we do keep them close to each other in Sydney and continually stress the need for close relations between divisions, between divisions and general management, and between divisions and the functional departments.

### *Qualities for Leadership*

There may be confusion about the use or meaning of the terms "leader", "executive", "administrator", "manager", "boss", but all have one thing in common—they refer to men who have to get things

done through other people. The higher the level, the more this is true. It has been said that the qualities which distinguish the successful administrator are his ability to think and act responsibly and with initiative, to work co-operatively with others and to provide others with opportunities to work effectively and with satisfaction within the group.

What is required to make a good administrator is much more than an academic question in business because it is the responsibility of top management to select and develop younger men in this regard, and at the same time to communicate the ideas and methods to others in order to make it a continuing process. There is no set formula, for one has only to look at the successful managers and administrators to see how their particular qualities vary from an ideal list of executive virtues. But certain innate traits and characteristics are necessary, and I am sure that, given these, certain skills, not necessarily inborn, can be developed, if one goes about it in the right way. I like the analysis that puts these developable skills as *technical*, *human* and *conceptual*.

Technical skill is the application of special knowledge of a specific activity, such as engineering or accounting. It is concerned with methods and procedures and is to a large extent related to *things*, *processes* or *physical objects*.

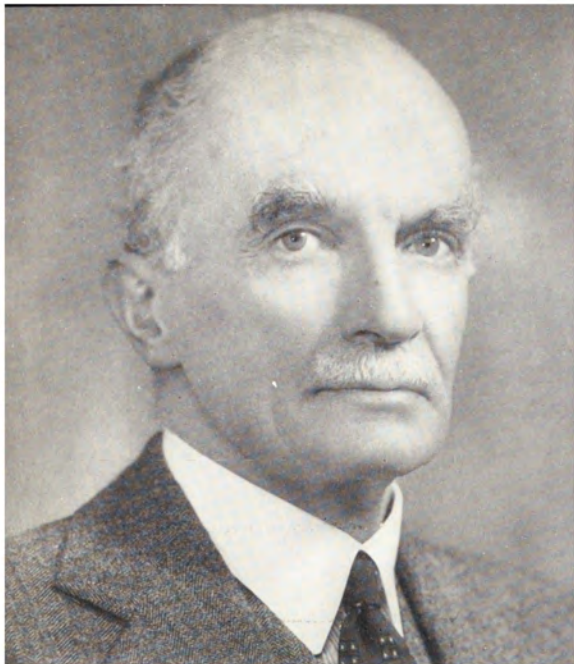
Human skill is mainly concerned with *people*. The man with this attribute is skilful at understanding people, communicating with them and in getting them to work with him and for him. Typically, this kind of skill is needed by a production manager.

Conceptual skill is harder to define. It means seeing the situation as a whole; assigning the weight which should be given to each of the many factors bearing on it; visualizing the inter-relationship of factors inside one business, in a whole industry, or between one industry and another, of politics, economics and technology, of the company's objectives and the interests of shareholders, employees and creditors. It includes the willingness and ability calmly to contemplate and evaluate. It is the unifying, co-ordinating ingredient and embodies consideration of the technical and human aspects.

This separation into three skills is useful for purposes of analysis, but in practice the three are so closely related that it is difficult to determine where one ends and another begins. Technical skill is indispensable to efficient operation and it has greatest importance at the lower levels of administration. Human skill is necessary at every administrative level, while conceptual skill becomes more important as one ascends the scale, and is absolutely essential at the top.



The board of the company meets every Wednesday at 2 p.m. at the company's head office at 1 O'Connell Street, Sydney. *From left:* Mr G. B. Kater, Major General W. J. V. Windeyer, Dr R. W. Harman, Sir Edward Knox, chairman, Mr. J. G. Crowther, Mr J. W. Dunlop. The general manager of the company, Dr R. W. Harman who is also a director, is the only member of the staff who regularly attends board meetings. Other officers attend from time to time for discussion of particular matters.



Sir Edward Knox, chairman of the board.



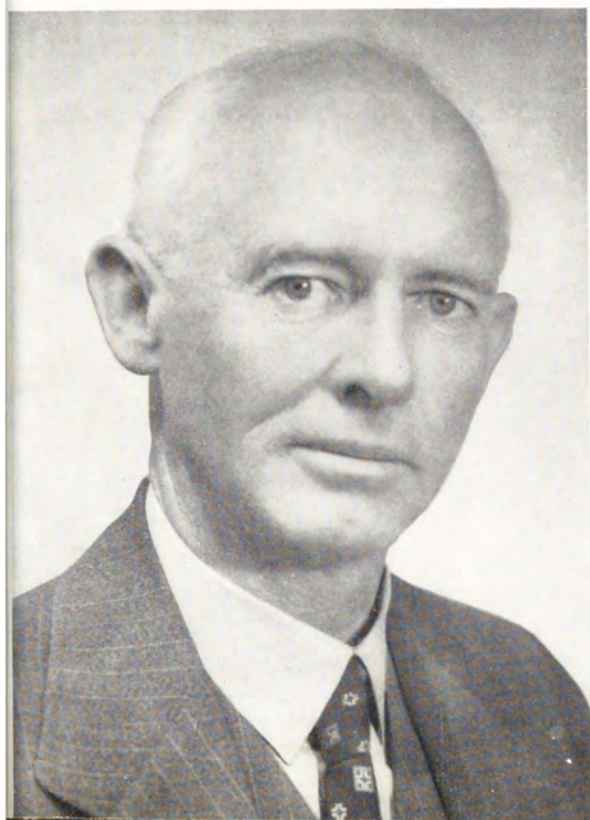
Dr R. W. Harman, general manager.

The general manager and four senior general executive officers comprise the general management group of the company. *From left:* Mr J. M. Dixon, Dr J. Vernon, Mr A. G. Carver, Mr. K. O. Brown (foreground) and Dr R. W. Harman.





*From left: Messrs F. B. Longley, accountant, and P. T. Wheen, head of the sugar marketing division, confer with Mr P. J. Donnollan, chairman of the Queensland Sugar Board.*

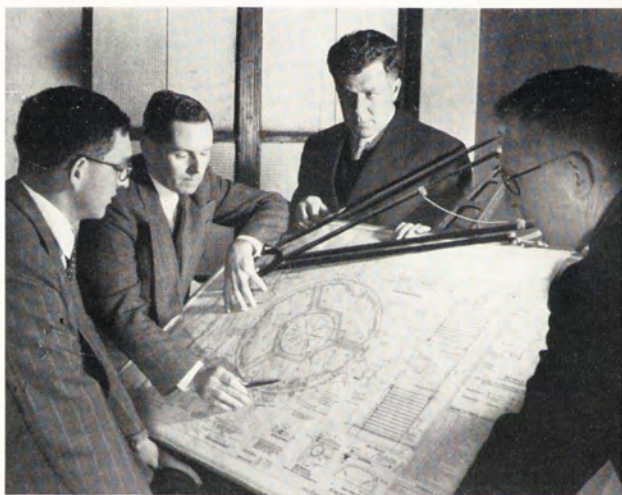


Mr L. F. Mallam, the company's general representative in the United Kingdom.



Refinery managers visiting Pymont refinery during a conference in Sydney. *From left:* Messrs A. M. Hooke, manager Cottesloe Refinery, W.A., G. L. King, manager Pymont, N.S.W., N. K. Sylow, manager Glanville Refinery, S.A., A. W. Blomfield, then manager Yarraville Refinery, Vic., now manager in West Australia, C. S. M. Walker, manager New Farm Refinery, Qld., and J. A. Wilson, head chemist Chelsea Refinery, N.Z.

Some members of the refinery development section. *From left:* Dr A. M. Hertzberg, Messrs L. L. Gilmour, J. A. Hosking and R. O. S. Shuttleworth.



Messrs M. S. Nossar, refinery development section, and A. C. G. Cameron, refinery inspector, discuss a newly installed Escher Weiss continuous centrifugal machine.



At conference of salesmen and distributors, building materials division. From left: Messrs T. R. Carruthers of J. Walter Thompson Pty. Ltd., the company's advertising agency, W. J. V. Windeyer, director, K. O. Brown, general manager of the building materials division, Sir Edward Knox, chairman of the board, Messrs R. A. Dickson of Dickson Primer & Co. Pty. Ltd., distributors of C.S.R. building products, A. C. Higgs, general sales manager, building materials division.



Salesmen, distributors and members of the office staff of the building materials division at a conference.



At the Rhodes factories of C.S.R. Chemicals Pty. Ltd. C.S.R. has a sixty per cent interest and The Distillers Company Limited of Great Britain a forty per cent interest in C.S.R. Chemicals. From left: Messrs L. W. Sweetman, A. J. Jarratt, general manager, and L. J. Thompson. Messrs Thompson and Sweetman are alternate directors in Australia for Sir Graham Hayman and Mr E. Stein of The Distillers Company.

The general manager, Dr Harman, inspects material in process at the pan stage at Victoria Mill, North Queensland. From left: Dr Harman, at microscope, Messrs W. A. Mestrez, chief engineer, R. L. Gordon, mill manager, R. Wilkinson, sugar boiler.



Messrs W. A. Gregory, acting secretary of the Pymont Sugar Workers' Union, and H. F. When, head of the company's industrial department, check agreed terms of a new award.



Mr N. Lipovas, leading hand at Yarraville Refinery, is a Lithuanian by birth and came to Australia in 1949. Many New Australians are employed in the company's refineries.



Subforeman Mr F. C. Hunnam instructing apprentice Mr D. A. Avery in the use of a milling machine at the company's light machine shop at Pyrmont.





The secretary of the company, Mr F. A. Tindale, seated, and the head of the share department, Mr C. H. Lindsay. Shareholders' affairs are one of the secretary's responsibilities.

Mr F. Calmyre, chief accountant, left, with his senior assistants Mr A. G. Lever and Mr E. B. G. Millard.





At the entrance to Melbourne branch office.  
At right: Mr F. F. Evans, sales manager for the building materials division in Victoria, talks to Mr J. L. Tucker, manager in Victoria.



Mr J. H. Goldfinch, sugar sales manager for N.S.W., inspects a new pack for C.S.R. Coffee Sugar Crystals.



Branch managers' conference at head office. *From left, foreground:* Mr F. A. Tindale, the company's secretary, Mr L. S. Dalrymple, then manager in South Australia, now sugar marketing division at head office, *at rear:* Messrs J. L. Tucker, manager in Victoria, G. West, then manager in West Australia, now manager in South Australia, P. T. Wheen, head of the sugar marketing division, Dr J. Vernon, Messrs J. M. Dixon, K. O. Brown, senior general executive officers, A. J. Priestley, sugar marketing division, J. R. Kerr, manager in Queensland, A. C. Isaacs, manager in New Zealand, E. E. T. Layton, sugar marketing division.

Fiji managers' conference at head office. *From left, foreground:* Messrs C. Elliot, chief manager in Fiji, A. G. Carver, Fiji mill inspector, A. R. Rourke, manager Lautoka Mill, *at rear:* J. M. Aitken, manager Penang Mill, E. C. Hood, assistant to mill chemical inspector, J. C. Trivett, mill chemical inspector, C. O. Handley, assistant to Fiji inspector, J. C. Potts, manager Rarawai Mill, H. G. Nicholls, assistant Fiji mill inspector, Dr R. C. L. Bosworth, research chemist, G. S. Rowley, manager Lambasa Mill, E. G. Baber, chief technical field officer.





Discussing mill matters at the company's head office. *From left:* Messrs E. G. Powell, senior mill chemical inspector, K. L. Coates, head of the Australian milling division, W. M. Livie, senior mill inspecting engineer, and J. T. Alley, an officer of the milling division who is also mill-owners' representative on the Queensland Central Cane Prices Board.

*From left:* Capt. C. E. B. Carter, officer in charge of C.S.R. ocean vessels, and Mr H. W. Turkington, distillery inspector, confer with Mr C. W. Davis, chief chemist.





Above: One of a number of laboratories at the company's research department, Pymont. At left: Dr I. R. Sherwood, senior microbiologist.

Right: Mr C. H. McDonald, research chemist, operating a photoelectric spectrophotometer at the research department. This instrument is used to measure colours of liquids and transparent solids, to make turbidity measurements, and for colour-matching plastics.

Below: Miss D. M. Heddle, research department, distilling alcohol from a series of fermented washes as part of a controlled experiment to determine optimum quantity of supplementary nutrients required by distillery yeasts.



Right: Mr I. H. Brown, chemist, determining filterability of a raw sugar sample by means of a test filter developed by the research department.





Portion of the central technical library at head office. *In the foreground, at left:* Mr H. J. D. Meares, chief librarian.



Mr R. W. Rutledge, head of the central laboratory, and *from left:* computers Mrs J. Ciddor and Mrs N. Rutherford working on a linear programming problem, one of the techniques used in operations research.

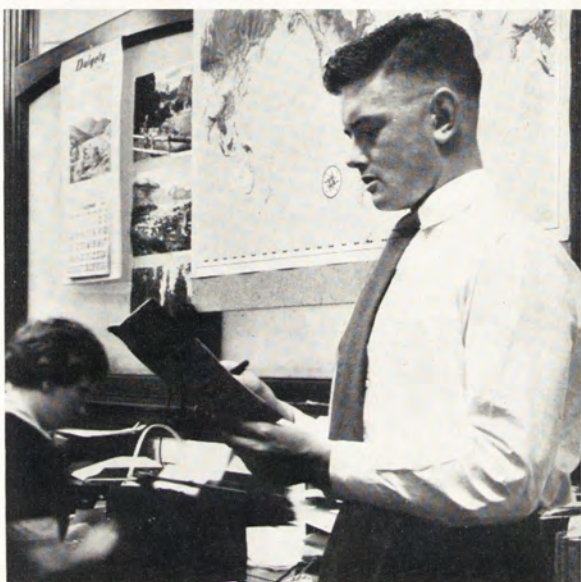
Main laboratory of the company's central laboratory where analytical work is carried out.



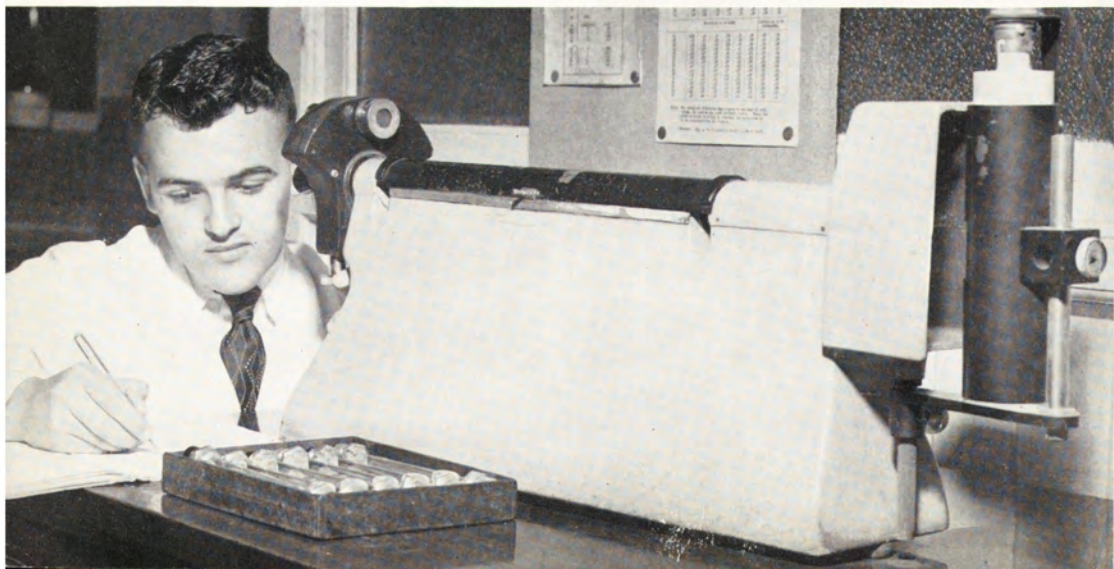


The staff officer, Mr F. B. McAlister, interviewing a young man, Mr F. A. Davies, seeking appointment to the company's staff.

Mr R. C. Barnett, a junior officer employed in the staff department, deals with transport arrangement for officers and their families travelling on company's business.



All junior officers on the chemical staff are taught to become proficient at operating the saccharimeter, an optical instrument for measuring the concentration of cane sugar in a solution. The chemist is Mr N. R. Maclean.





Portion of the engineering drawing office at 1 O'Connell Street. Mr P. Cram, head of the company's central engineering services, discusses a plan with Mr R. A. Macdonald, principal design engineer. Miss P. Juergens on right.



Apprentice Mr T. G. MacDonald is instructed by Mr J. G. Paynter, supervising design engineer.

Bachelors' quarters, Victoria Mill, North Queensland.



Mr J. C. Potts, manager Rarawai Mill, Fiji, *on right*, having Sunday afternoon tea at the bachelors' quarters.



The dining room at the bachelors' quarters, Nausori Mill, Fiji.





View from the manager's house, Goondi Mill, North Queensland. Mrs I. D. Bowling, the manager's wife, on the right.



The manager's house, Hambledon Mill, North Queensland. The manager, Mr M. Mackellar, at left.



Children of company officers playing in a garden, Rarawai, Fiji.



Employees' dining room,  
Yarraville Refinery, Mel-  
bourne.



Washrooms, Pyrmont Refinery, Sydney.



Amenities block, New Farm Refinery, Brisbane.



For years it has been the custom during February, when many officers are on leave from the mills in Australia and Fiji, for a cricket team from mills and other factories to play a team from head office—in recent years at the Sydney Cricket Ground. Many retired officers and officers from the factories around Sydney meet at the luncheon.



Employees' picnics at the refineries date back to the very early days. *Left:* Master J. Stone winning the boys' sack race at Pymont Refinery picnic.

Employees at the various factories organize a number of social activities. Most of the work is done by committees such as the Pymont Distillery social committee below. *From left:* Messrs W. Myers, F. Chirgwin, G. Watters, chairman, G. Thomson, T. Tyler, J. Irving, W. Cowan, W. Cruwys, *foreground:* W. Carroll.





Mr F. Pogson, glass blower, research department.

It will be noticed that I use the word skill, which implies ability to translate knowledge into action. Therefore this approach places emphasis on learning by doing. Also, consideration of what lies behind the words "technical, human and conceptual" will show that this approach calls for more than technical training: it lays stress on education in its broader sense; it calls for a continuance and broadening of education after school or university.

### *The Working of Divisions*

The chart *Organization of Australian Milling Division* is an attempt to illustrate how supervision and control are carried out at the different levels and in the various sections in a distant branch or factory. There are differences of organization from division to division but the broad structure and method shown here will help the subsequent explanation.

While charts of this nature have their uses for purposes of illustration, they err in making what is essentially a somewhat complex situation look simple. No single chart can do justice to all functions and positions, for such diagrams suggest a rigidity which does not exist in practice. The chart of the Australian Milling Division does not sufficiently indicate the large amount of direct communication between line management and specialists in the central functional departments. Degrees of flexibility and shades of meaning are difficult to convey by a chart but in practice are most important. Also it must not be forgotten that a vital part is played by information and suggestions that flow upwards.

Throughout the company, and particularly in head office, the senior men of the various divisions and functional departments work in very close personal contact with one another and with general management, including myself. The utmost emphasis is laid upon free personal discussion amongst us and this, I think, is one of our great assets.

The managers of the various activities and factories in any one division are supervised and controlled in the management of their affairs by the "general inspector", an old title in C.S.R. His function nowadays approaches in many ways that of general manager of the division. He is assisted in the larger divisions by technical or specialist inspectors of his own division, such as the chemical, engineering and accounting inspectors, as well as by the central functional departments.

The general inspector of a division makes frequent visits to factories under his control as also do his specialist inspectors. These factories and other parts of the organization are also visited by me and by the other four members of the general management group.

The technical or specialist inspectors from head office regularly visit the factories and branches. They discuss all questions relating to the work with the local chief engineer, process manager, accountant or other section leader, as the case may be, and the conclusions to which they come are reported to the local manager who is responsible for the whole of the work done in his branch or factory. He may postpone for reference to head office the carrying out of any changes proposed by a specialist inspector if, after full discussion with the latter, he holds a different view of what should be done.

So far, this description has proceeded down the various levels of management from general manager of the company to general inspector or controller of a division, to manager of a branch or factory. There is still much more management to be exercised within the factory organization itself, for it is here that the bulk of our managing and supervising personnel are employed. Here are to be found one of the strengths of the company and the reservoir of supply for future senior management. These are the men who actually bear the responsibility for reaching the targets set for continuous production at high rate, reduction in costs, and greater productivity, and also for promoting good employer-employee relations.

There is a particular feature about our factory organization that should be emphasized. Our supervisors are technical men and supervise and control both process and operatives. To do this, they have been trained as chemists or engineers to control process and plant, and also in employer-employee relations to manage men; they acquire both the technical and human skills. Such a system has many advantages. It avoids dual control in a factory and our technical staff also become managers of men. This experience helps many of them when, later, they move up to local managership; and most of our senior divisional staff in head office have graduated in this way, gaining experience of both technical and human aspects of management.

#### *Functional and Specialist Services*

One of the advantages that a large company enjoys is sufficient volume of operations to sustain the cost of highly qualified specialist services and functional departments. When there are eight divisions, as in C.S.R., it would be wasteful and unnecessary to have, for example, eight industrial departments, one for each division. Although varying degrees of specialist autonomy develop, depending on the particular circumstances of each division, one central functional department, such as the industrial department, can service and assist most of the eight divisions and unify policy and practice to the necessary degree.

And the obtaining of efficient co-ordination of and co-operation between the divisions' line of control and the functional departments in a large company is a test of good administration. It follows that the results obtained by the operating divisions are in large measure due to the good work of the functional departments.

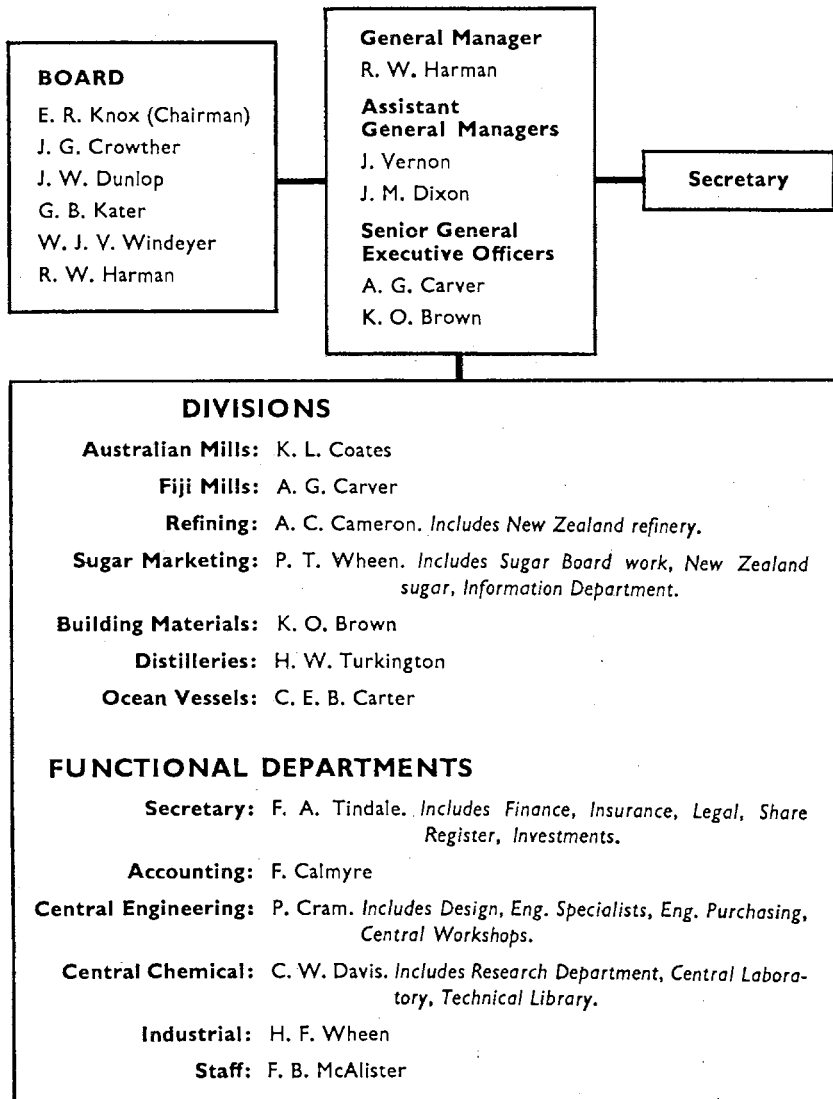
Those not familiar with an organization such as a manufacturing business may wonder about the distinction drawn between the "line" (i.e., production and selling) operations and the "service" (i.e., specialist or functional) departments, and may wonder about the administrative problem of getting the best intermingling of the two. This is not a simple matter and it could be discussed at great length, which is not possible here. It is probably a sufficient explanation to say that the line man in selling or production has to have clear and definite instructions to receive and pass on, so that he needs one boss, not two or more giving slightly varying instructions. The line man is fully occupied with his problem of initiation and control of operations and does not always have the time to study, investigate, develop and keep abreast of all new and specialist skills. Specialists have, therefore, developed in such matters as industrial employer-employee relations, technological research, cost accounting, personnel management, methods engineering, advertising, market research, and the like. The production and marketing men have to become knowledgeable in these matters and must take the responsibility for putting them into practice, with assistance and advice from the specialists.

Services and special functions are found inside a division, shared between two divisions, serving several divisions, or serving the whole company. This is partly indicated on the chart of the Australian Milling Division. This chart shows that this division relies heavily on its own head office functional officers—but it cannot clearly show that some of these are shared with the Fijian Milling Division. The chart does indicate, somewhat imperfectly, that the Australian Milling Division has available to it central functions serving many divisions; the Industrial Department, already mentioned, would be a typical example. Whether functions stay "central" and general (for example, Industrial Department) or become "divisional" (for example, Mill Chemical Department) is too detailed a question to discuss here.

The chart *Organization of C.S.R. Headquarters* shows that our main central (not divisional) functional departments are: the secretary, central accounting, central engineering, central chemical, research, industrial, and staff. I would note here that, as this is not a treatise on the theory of management, my separation into categories and my choice of labels are not to be taken as precise or beyond criticism from

SOUTH PACIFIC ENTERPRISE

ORGANIZATION OF C.S.R. HEADQUARTERS



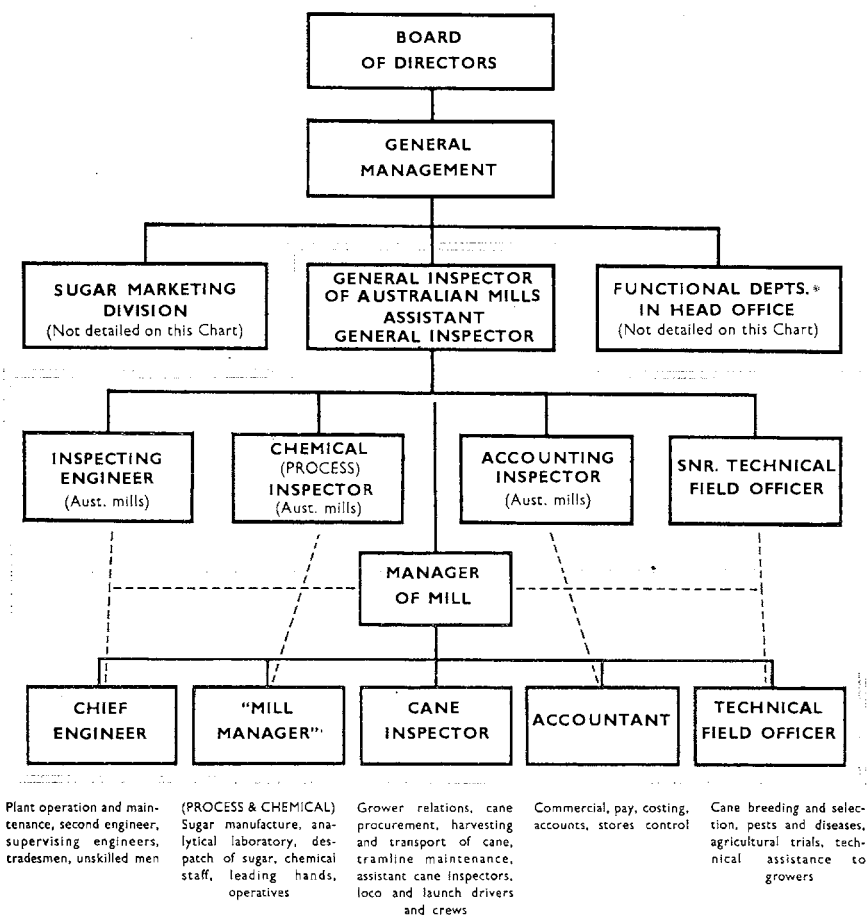
**INDUSTRIAL CHEMICALS**

The company's interests are represented by 60% ownership of C.S.R. Chemicals Pty. Ltd. **Board:** E. R. Knox, Chairman; R. W. Harman; J. Vernon; Sir Graham Hayman (Alternate—L. J. Thompson); E. Stein (Alternate—L. W. Sweetman)  
**General Manager—**A. J. Jarratt.

## ORGANIZATION OF AUSTRALIAN MILLING DIVISION

This chart shows the Australian Milling Division of C.S.R. and its relation to the general direction and management of the company. The Milling Division is shown enclosed by a yellow border. It is partly located in Head Office and partly at the mills; functions located at Head Office are outlined in blue , those at each of the seven mills in red .

Continuous lines denote authority. Broken lines denote close association.



\* The functions referred to here, many of which have important applications to the Australian milling division, are *for the company as a whole*. The main functional departments *inside the Australian milling division* are shown, viz. "Inspecting Engineer" and others on the same horizontal line.

the point of view of fine definition. For classification by charts of this kind is not wholly satisfactory. Some persons—the secretary is an example—have some line responsibilities as well as functional responsibilities. Bearing in mind such qualifications I now describe briefly the activities of the *central* functional departments.

The secretary has duties and responsibilities in connection with shareholders' affairs and company law and practice. For example, in conjunction with the chief accountant he assists the general manager and the board in the preparation of the annual report and accounts. He has responsibilities also in connection with finance, investment, banking, real property, insurance and the Employees' Provident Fund.

The central accounting department carries out normal financial accounting and costing. It includes officers who inspect this type of work at the branches and factories, in much the same manner as the engineering and chemical inspectors supervise their particular spheres of operation at the factories.

Central engineering comes under the chief engineer. It includes the general designing office with about one hundred design engineers and draughtsmen, who do most of the design and detailed drawings for our factories. Also located here are specialist electrical, metallurgical and steam engineers, and some of the supervising constructional engineers. The chief engineer controls a well-equipped engineering workshop at Pyrmont, in Sydney, which fabricates specialized plant, repairs other plant, trains young engineers and trade apprentices, and provides general heavy workshop service for the organization.

The chief chemist controls the central laboratory, technical library and the chemical research department, and acts generally as adviser and consultant for all chemical work. The central laboratory is the main training ground for junior chemists and is also the main analytical laboratory. The technical library is, outside the Commonwealth Scientific and Industrial Research Organization, probably the best technical library in Australia, in regard to both reference books and methods of collecting and circulating information throughout the company. The research department at Pyrmont is one of the largest company-operated scientific and industrial research laboratories in Australia. Its main functions are to improve existing processes and to develop new ones.

The industrial department deals with wages and conditions of employment, awards, arbitration court and similar matters and its work is referred to in the next chapter.

Our staff department is concerned with conditions of employment of the staff and preparation of material for the annual review of their

salaries; with the engagement of new members, their induction into company procedure and their training; with transfers of staff from one section to another and their movement, including arrangements for moving their families and belongings; with recommendations to provide finance for officers to buy homes; with supervision of staff amenities and social functions, and care of some of the personal and domestic troubles of staff and pensioners.

An inheritance from our past, and a good one, is that the general manager shall deal personally with staff matters. This excellent practice would be impossibly burdensome with such a large staff without the assistance of the staff officer and his department.

While all the senior officers have much to do with staff matters, direct personal contact between the general manager and individuals on the staff is carried out extensively in C.S.R.—I believe to an unusual extent. Some people may think there is not time for me to discuss everyday affairs with seniors and many juniors, but there is time. When I and other senior officers visit the sites of our activities we not only inspect current operations but find time to discuss many things with our people, particularly their own individual opinions and affairs. An old-established and valuable practice continues of our officers, when visiting Sydney on leave, as many do, seeing me and the other senior officers, to talk about their work and about themselves.

The main review of salaries is carried out annually by a committee consisting of the general manager, in the role of chairman, the assistant general managers, the senior general executive officers, the senior heads of divisions and the staff officer. Other heads of divisions and of departments attend in turn at this meeting. Every officer in the company is discussed individually and often at length. Prior to the meeting of this review committee, staff reports have been written by heads of divisions and departments and managers of factories, and all these reports are read by all the members of the committee. By such methods we do our best to see that every officer receives individual and fair treatment. This method preserves balance in salaries among such a varied staff. Moreover, it gives everyone the maximum degree of equality of opportunity we can devise and assists to place men in the right jobs. The recommendations of this committee are placed before the board for confirmation.

#### *Composition of the Staff*

The three chief means by which the owners' capital is employed to attain the company's ends are the organization, the men, the leadership. So far I have been mainly concerned to outline basic concepts

and the organizational structure, but in doing so I hope some light has been thrown upon the kind of men in the organization and upon the matter of leadership. There is a good deal more to be said about the men who clothe the structure. Moreover, it may be questioned how C.S.R. makes those concepts and generalities which I have been discussing come to life as a growing, enterprising organization. The answer is—Men, with the required characteristics. And while this is to state an ideal answer which is not fully attainable, we strive towards it and believe we have some success. I think there is no better way to show how we try than to give some of the detailed facts and evidence about our men.

Most of our executive and supervising staff come to us straight from school and stay with us all their working lives; very many of our factory operatives and tradesmen, especially at places away from the larger capital cities, work for us over a long period of years. Ours is a career service and promotion is almost invariably from within, which emphasizes the need for a good proportion of young men of high quality among recruits. In a few instances we go outside our own service to obtain a man who possesses specialist qualifications which we have not previously had reason to develop. Men are judged first and foremost on merit, and there are many opportunities for advancement, because C.S.R. is not a single large factory organization but is really a collection of related enterprises, so that there are many responsible positions.

Although there is discipline, especially the discipline of hard work, we endeavour to treat people as individuals. Although there is concentration and stress by the management on costs and on production, we try to the best of our ability to regard all employees as contributors to our success and also as members—individual members—of the group. We endeavour to avoid measures which are authoritarian in tone. The disapproval or withheld approval of fellow members of the group acts as one important sanction. And the promise of approval is a stimulus towards high standards of discipline and *esprit de corps*. Naturally this has, in practice, different degrees of applicability and emphasis in different spheres of employment in the company.

The company has about 10,300 employees—7,010 in Australia, 460 in New Zealand and 2,830 in Fiji, of whom 2,320 are Indians or Fijians. The accompanying table shows the capacities in which the thousand members of our salaried staff are employed. The classification is somewhat arbitrary and perhaps goes too far in cataloguing people. Another way of classifying them would be to say that, of the 1,056, about 200 are juniors in training and clerical assistants and almost

# SOUTH PACIFIC ENTERPRISE

all the remaining 800 occupy positions of responsibility. About 350 of the 800 are in managing positions, on a normal interpretation of management functions, and although I set out below the positions of the senior 77 officers in the company I would not like it to be thought that managerial responsibility resides only in these 77.

## Senior Officers

|                                                           |    |    |    |    |    |    |    |
|-----------------------------------------------------------|----|----|----|----|----|----|----|
| <i>General manager</i>                                    | .. | .. | .. | .. | .. | .. | 1  |
| <i>Assistant general managers</i>                         | .. | .. | .. | .. | .. | .. | 2  |
| <i>Senior general executive officers</i>                  | .. | .. | .. | .. | .. | .. | 2  |
| <i>Heads and assistant heads of divisions</i>             | .. | .. | .. | .. | .. | .. | 8  |
| <i>Heads of major central functional departments</i>      | .. | .. | .. | .. | .. | .. | 6  |
| <i>Senior technical officers and technical inspectors</i> | .. | .. | .. | .. | .. | .. | 14 |
| <i>Senior specialist commercial officers</i>              | .. | .. | .. | .. | .. | .. | 11 |
|                                                           |    |    |    |    |    |    | —  |
| <i>Managers: Australian and Fiji mills</i>                | .. | .. | .. | .. | .. | .. | 12 |
| <i>Branches (capital cities)</i>                          | .. | .. | .. | .. | .. | .. | 5  |
| <i>Refineries</i>                                         | .. | .. | .. | .. | .. | .. | 6  |
| <i>B.M.D. factories</i>                                   | .. | .. | .. | .. | .. | .. | 5  |
| <i>Other factories</i>                                    | .. | .. | .. | .. | .. | .. | 5  |
|                                                           |    |    |    |    |    |    | —  |
|                                                           |    |    |    |    |    |    | 33 |
|                                                           |    |    |    |    |    |    | —  |
|                                                           |    |    |    |    |    |    | 77 |
|                                                           |    |    |    |    |    |    | —  |

Of these senior 77 officers, all except 12 came to C.S.R. straight from school; six of the twelve first went to universities and the other half-dozen joined after experience elsewhere, but still at an early age. In all 26 hold university degrees or accountancy qualifications. It is also interesting to look at the initial training in the company of these senior 77 officers, bearing in mind that there are many changes in training and experience for men who get to the top of an organization such as C.S.R. This early training was:

|                            |    |    |    |    |
|----------------------------|----|----|----|----|
| <i>as chemists</i>         | .. | .. | .. | 32 |
| <i>as engineers</i>        | .. | .. | .. | 18 |
| <i>as commercial staff</i> | .. | .. | .. | 15 |
| <i>as mill field staff</i> | .. | .. | .. | 12 |
|                            |    |    |    | —  |
|                            |    |    |    | 77 |
|                            |    |    |    | —  |

## MEN AND ORGANIZATION

The average age of the staff is 36 years and of the 77 senior officers 48 years.

The company has always given careful attention to selecting, educating and developing its men. We emphasize practical experience within the organization as well as continuing education. I look on this as one of my own chief responsibilities.

Manners, bearing and sound family background are useful indications of both personal integrity and balance. These things are sometimes thought to be old-fashioned, but we have no doubt of their permanent importance. We look for sound schooling, good character and personality; we look, too, for individuality, but not of the kind that will preclude a man from working as a member of a team. We like our young men to have played team sports at school; to have been leaders or prefects and thereby to have learned both to give and to take instructions; and to have been constructive and influential members of their school and local youth communities.

### CATEGORIES OF C.S.R. STAFF

|                                                                       |     |     |     |     |     |     |     |
|-----------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|
| Senior officers at head office                                        | ... | ... | ... | ... | ... | ... | 44  |
| Managers of branches and factories                                    | ... | ... | ... | ... | ... | ... | 33  |
| Senior commercial and technical officers at head office               | ... | ... | ... | ... | ... | ... | 32  |
| Heads of specialist departments at head office                        | ... | ... | ... | ... | ... | ... | 12  |
| Production managers                                                   | ... | ... | ... | ... | ... | ... | 37  |
| Process supervisors (mainly chemists)                                 | ... | ... | ... | ... | ... | ... | 76  |
| Research and development officers                                     | ... | ... | ... | ... | ... | ... | 27  |
| Designing and constructing engineers                                  | ... | ... | ... | ... | ... | ... | 82  |
| Factory chief engineers                                               | ... | ... | ... | ... | ... | ... | 24  |
| Supervisory engineers (factory)                                       | ... | ... | ... | ... | ... | ... | 85  |
| Specialist factory engineers                                          | ... | ... | ... | ... | ... | ... | 35  |
| Agricultural officers                                                 | ... | ... | ... | ... | ... | ... | 21  |
| Senior field staff (Australian and Fiji mills)                        | ... | ... | ... | ... | ... | ... | 16  |
| General field staff (Australian and Fiji mills)                       | ... | ... | ... | ... | ... | ... | 71  |
| Accountants and senior clerks                                         | ... | ... | ... | ... | ... | ... | 77  |
| Marketing, sales and distribution officers                            | ... | ... | ... | ... | ... | ... | 66  |
| Commercial staff (various)                                            | ... | ... | ... | ... | ... | ... | 147 |
| Miscellaneous positions (shipping, personnel, medical, library, etc.) | ... | ... | ... | ... | ... | ... | 37  |
| Juniors in training—                                                  |     |     |     |     |     |     |     |
| Laboratory chemists and junior analysts                               | ... | ... | ... | ... | ... | ... | 63  |
| Commercial staff, mainly in head office and branches                  | ... | ... | ... | ... | ... | ... | 51  |
| Junior engineers, excluding apprentices                               | ... | ... | ... | ... | ... | ... | 9   |
| Junior field staff                                                    | ... | ... | ... | ... | ... | ... | 11  |

---

1,056

About 65 per cent of the present salaried staff were engaged direct from school to become chemists, clerks or engineering apprentices; about 10 per cent were first employed with us as weekly wage earners and were promoted to the staff; some 25 per cent had experience elsewhere before joining us, most of these having been engaged in the last ten years and while still at a comparatively early age.

About half of our young staff men have come from State high schools and half from private schools. About one-quarter came from country schools. Geographically, New South Wales has provided about three-quarters of the whole.

It is interesting to note that, of the thousand or so men on the staff, 162 are sons of company personnel (a few are of the fourth generation and a number are of the third; many are sons of C.S.R. wage earners) and 9 of the 162 are among the 77 most senior officers. If the proportion of sons of officers became too large it might have disadvantages, but in our experience there have been no disadvantages and there are certainly some advantages. One of these is that sons join the company with a full understanding of its character and work; they know what to expect and fully appreciate that they have to go to Fiji or Queensland or elsewhere in the service. We have a sense of satisfaction from the knowledge that so many fathers who have spent their lives with the company are glad to see their sons in the same service.

We prefer to engage those who have completed the full secondary course to university matriculation standard or have passed the Leaving Certificate examination or its equivalent. This is an essential for chemists and engineers as all new recruits in these spheres do technical training courses both inside and outside the company. Outside generally means a diploma course at a technical college or a degree course at a university.

#### *Development of Men*

C.S.R.'s long tradition of training of staff had its origin in chemical control of sugar manufacture. Sugar chemists were a non-existent race when we were developing chemical control of sugar factories. This led to the policy of recruiting young men for the chemical staff as they left school and training them in our own classes, which started formally in 1904. We believe we were the only company in Australasia, in the early years of this century, that gave any section of its staff a prolonged period of systematic training.

The growth of technical colleges and of suitable courses in our universities has changed this, and for some years now all our chemists, in addition to attending our internal classes, have attended diploma

## MEN AND ORGANIZATION

or graduate courses at a technical college or a university, mainly in Sydney, our principal training centre. Their initial internal training is in subjects specific to our own industry, such as sugar analysis and special courses on process and labour supervision.

The company for many years has been noted for the high quality of its engineering apprentices. C.S.R. set up its own apprentice classes in 1906, for more distant factories as well as in the capital cities. The system is still in operation at our factories in Fiji, supplemented by correspondence courses. Engineering apprentices in Sydney now attend the University of Technology.

Our agricultural field staff is drawn in large part from chemists who have first had a few years' experience of raw sugar manufacture and then some experience at our own agricultural plant breeding and pathological stations, followed by specialist courses of one or two years at Sydney University. If they come through this satisfactorily, and it takes some seven years at least, they are given postings as junior technical field officers.

Besides the technical field staff, we have a large number of general field officers who organize the harvesting and transport of cane to the mills and generally are advisers to the growers. In Fiji the field officers must have a working knowledge of agriculture and they are also required to know the Hindi language and the customs of Hindus and Muslims because the growers there are, for the most part, Indians.

We use the omnibus term "commercial staff" to cover many different categories, some of them quite specialist, such as salesmen, accountants, junior industrial and personnel officers, purchasing staff, insurance men, shipping officers.

The training of our commercial cadets has not been so highly systematized as that of the technical cadets. One reason for this is that few basic courses exist and the men concerned are thrown more on their own resources and on internal company resources. All the juniors on our commercial staff are not, therefore, required to undertake formal courses, but they are encouraged and assisted to study economics, accountancy, cost accountancy and other like subjects. There are at present 43 men on the commercial staff with economics degrees or diplomas or accountancy qualifications, and there are many juniors studying these subjects while working and acquiring practical experience at the same time. If their external courses require it, a reasonable amount of time off is allowed without loss of salary.

I am convinced that in many organizations there is a large proportion of men who can be trained and educated to make successful managers

or administrators. Without question, the yield can be greatly increased by starting with a high average quality of stock—in education, character, family background and intelligence. But the best administrators will develop only if the organization makes a conscious effort to educate and develop them and if the individuals continue to educate themselves.

Our development for senior positions is carried out in various ways. Job rotation and experience under different seniors is important. There is no real substitute for learning by doing. Those who stand out clearly are pushed ahead. The best recipe for success is doing a good job, wherever posted, and standing up to the pressure of hard, sustained work and responsibility. We make a deliberate effort to see that the promising man gets experience inside the company and encourage him to get wider outside experience; his development, his gaining of knowledge and experience go on until late in his working life.

Juniors and seniors alike are encouraged to belong to various professional bodies, such as the Royal Australian Chemical Institute, the Institution of Engineers, the Institute of Management and the Australian Society of Accountants. Many of our officers have taken leading parts in these associations.

For a company such as ours, it is necessary to have some men with higher university degrees. We recruit some graduates direct from the universities, particularly for our research department, where they may stay or whence they may be transferred to production work. We also select officers who have already shown that they will progress in the company to study for higher university degrees. All of those selected have done well and some half-dozen have been sent to English universities to obtain doctorate degrees. We place these men under no bond to stay with us but we pay their salary and their university fees and expenses.

We always have a few men making visits overseas. Most of these visits are specific business missions, but they are undoubtedly helpful to the individuals and the organization in broader ways. While overseas visits are not confined to sugar business, there is no sugar-producing country of note which our officers have not visited or with which we have not exchanged information. We also send our people to conferences, technical and commercial alike, in Australia and overseas. An example of this is the triennial meeting of the International Society of Sugar Cane Technologists, two meetings of which have been held in Queensland and others in Cuba, Puerto Rico, Hawaii, and Louisiana; five of our men have recently returned from the latest congress, held in India.

For management and administration, for work study and personnel work, learning by doing and by direct coaching from superiors has recently been supplemented by more formal training courses, both inside the company and externally. We have made considerable use of management courses available at technical colleges, at the Institute of Management, and from firms of management consultants. Quite recently three senior officers have had the benefit of overseas courses—two at the Harvard short course in Hawaii and one at the Administrative Staff College at Henley-on-Thames.

We aim through training to improve both our men and our methods of work, and not technical or process methods only; to have well-trained and interested operatives and tradesmen working under good conditions by well-conceived and well-planned methods; to have supervisors able to instruct, lead and control, and especially aware of what is needed for good performance of their job. Older methods of development, however, had their good features. And, when I see around me the surge of interest and enthusiasm for the study and the application of improved methods of management since the last war, much of which I have myself encouraged, I like to remind people not to forget the basic principles of the past, not to get lost in the new techniques, but to use them as an addition to the best features of the old; not to forget that there is no escape from the fundamental requirement that a good supervisor must be on the job and get good discipline through his own knowledge, application and leadership.

The contract of staff engagement provides that each man shall serve wherever directed. He may be engaged in Perth, be transferred to Fiji, then to Queensland, then to head office. Only by this kind of mobility can our particular needs be met in all our places of business and manufacture. It is also most useful for broadening experience, for checking on responsibility and adjustability, and for actually effecting promotion.

Vacancies in comparatively junior positions are filled mainly by young men who are being moved from one position to another as part of their experience. For higher positions, care is taken to consider all possible candidates for each vacancy. The initial list for a vacancy usually contains the names of a considerable number of men and full discussion among senior officers takes place before the choice is made.

Women stenographers and typists were not employed in the company until the mid-thirties. The number rose during the war to 240 and there are now about 200, mostly in Sydney. They fill positions as clerks, secretaries, stenographers, telephone operators, receptionists, analytical chemists, librarians, and so on. They make a large contribution to our operations.

*Employee Services*

Like most other large organizations in advanced communities the company provides a number of services for its employees. Some of these were quite exceptional when introduced into C.S.R. during last century and, although in recent times similar services have been rendered by most employers and to an increasing extent by the state, I think we have continued to hold a leading place in this respect. The company has long contributed towards employees' life assurance and pensions, operated a long-service leave scheme, assisted employees to buy their own homes, provided housing in remote areas, and made up the pay of those engaged in defence training or on war service. Support by the company for the employee's own efforts is the guiding principle—a principle enunciated by E. W. Knox in 1892 when he remarked that "a pension, however large, is dearly purchased by a sacrifice of any portion of the independence of spirit which you should all possess" (see Appendix 6). The contributions towards helping its employees are therefore neither ungenerous nor extravagant—for any extravagance in salaries or associated benefits must be paid for either by shareholders or by consumers.

When C.S.R. Employees' Provident Fund was established in 1890 it was the first of its kind in this part of the world. "We are employees of the largest and most enlightened commercial undertaking in Australia," one of our factory managers at the time told his men, "... this fund is only one more evidence of its continually progressive character." Both the company and members contribute to the fund. Main benefits are life assurance and pensions on retirement. The fund is a separate entity, quite distinct from the company, being controlled and managed by six trustees—a director, the general manager, two salaried officers and two foremen. There were 1,194 contributing members at 30 June 1955, and 366 members receiving pensions. One-third of the investments of the fund are shares in C.S.R., giving the members of the fund (and virtually all the salaried staff are members) a close interest in the success of the enterprise—a point of some interest to the general body of shareholders and representing a real and properly-earned form of profit-sharing. Inflation has robbed the older pensioners of much of the real value of their early contributions but the company has appreciated the social injustice brought about in this way and has directly supplemented pensions to ease the situation.

A factory employees' assurance scheme, run in conjunction with the Australian Mutual Provident Society, provides factory employees who elect to join it with life assurance and a lump sum of up to £2,500

on retirement. The company subsidizes this scheme £ for £ of employees' contributions, to the extent of about £50,000 annually.

The amount advanced to employees for house loans and not yet repaid stood at £791,000 at March 1955. The total advanced under this long-standing scheme and the number of homes built are, of course, much greater than this balance would appear to indicate.

We encourage our officers to become members of the peacetime army, navy and air force, and give them time off for citizen defence training. During the two world wars the pay of employees on war service was made up if they were earning less in the services. We are proud of our employees' wartime records. As an illustration, I cite the figures for our salaried staff for the two world wars. There were 429 on the staff in August 1914, and 154 of these enlisted during the first World War. Others who joined the staff during the war and enlisted later brought the total enlistments up to 231. Of these 203, including our chairman, saw active service; 37 were killed. During the second World War it was necessary to retain more officers in production work at home. 284 from a staff of between 700 and 800 enlisted and many more would have done so if they had been allowed by the authorities; 39 were killed.

### *The Art of Business*

J. M. Keynes expressed the opinion that "it is safe to say that enterprise which depends on hopes stretching into the future benefits the community as a whole". But he thought that individual initiative would be adequate only when "reasonable calculation is supported by animal spirits". A mere description of the organization and manning of an enterprise, of managerial attitudes and skills, of the type of working life we provide for our people, cannot convey an understanding or appreciation of the vitality of the company or of the infusion of "animal spirits" which helps to make for economic growth and the avoidance of a static economy and static life. One of the factors which gives assurance and confidence to our people is, I think, the conviction that the activity of production and the process of economic development in which they are engaged is a worthwhile task.

I think it is also fairly widely appreciated among our staff that economic development is a necessary condition, although not the only condition, for many other kinds of development. To some extent it presents an end in itself, but it is also a means to other socially desirable ends. The nature of economic development, the ends it serves, and the means employed to reach those ends, are factors which influence the attitudes of men. In pursuing their immediate ends I think most of our people seek means which pay regard to the rights and liberties

of others, and look towards more distant ends which promote political and social, as well as economic, well-being.

Although applied science holds an important place in industry, there is no science of ends and means to guide men in conducting themselves in their business affairs. Because we are a prominent business with a highly organized structure, some people assume that we could, if only we would, tell them our "formula" for making business decisions. Some seem to think that if the formula were disclosed any generally intelligent person over 30 years of age could apply it with quite adequate success. In truth, nearly all major business decisions are influenced by factors incapable of precise definition or measurement; many such factors are not of either a physical or an economic nature; many of them are in a constant state of change; situations do not repeat themselves very frequently because one or more of the factors is generally found to be different. The question of profitability is of course with us all the time. There can be no future existence for us if we do not operate profitably in the financial sense. Monetary profit, as an economic criterion, is the *prima facie* evidence of efficient operation, and because of that is a constant objective of our activity. A high degree of preoccupation with profitability provides also a fair measure of assurance that our activities are indeed economic, in a wider sense.

How to make a profit, and to continue to do so in the future, is usually a complex enough problem, with nothing automatic or certain about its solution. But there are many other problems which the businessman must face, other objectives to attain, and other considerations to which weight must be given. The requirements for the best business decisions in an organization of our type are that able and responsible men, possessed of technical, human and conceptual skills, with detailed knowledge of the trade or industry, and endowed or imbued with enthusiasm and "animal optimism", should have all the hard-to-get facts and considerations in front of them. Such a standard of perfection is rarely fully attainable in practice but it is a standard we consciously try to reach. In coming to decisions and in carrying them out, the following factors operate:

Responsibilities lie not in one or two directions only, but must quite consciously extend to shareholders, customers, employees, creditors, suppliers, and the public interest.

Decisions must take into account physical and technical considerations, more difficult financial, economic and political matters and the effects on and reactions of many human beings.

## MEN AND ORGANIZATION

It is certainly not the past and hardly ever the present which is at stake; present decisions and actions inevitably affect the future. Decisions must almost always be made in the here-and-now against the pressure of time and circumstances; problems can seldom be left for Time to bring a solution.

Businessmen cannot afford to try to be right in every respect every time—too conscious a concern in that regard would mean delays, which are the enemy of action, and too little would get done. One of their functions is to take risks—calculated risks. Their art is to be right most times, wrong seldom and where it least matters.