

SCORING THE PREFERRED ADAPTIVE STRATEGY TEST

Give yourself one point within an adaptive strategy type each time your answer falls in that column:

	Kin-Reliant	Peer-Reliant	Self-Reliant
1.	c or d	a	b or e
2.	a or c	b or c	d
3.	e and/or f	c and/or d but not e and/or f	a or b but not e and/or f
4.	1 point if: c on Q.4 and/or yes on Q.5	a	b or d
5.			
6.		b	1 point if: a on Q.6 and a on Q.7
7.	b		c
8.	b	a	b
9.	a	c	
10.		c	
11.			Yes
12.	Yes		

TOTAL SCORES:

Each Adaptive Strategy has a possible score of up to 8 points. Most people use all three strategies for some purposes, but emphasize one or another.

The Meremere Coal Gang: a study of a multi-cultural work gang

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The coal gang at the Meremere Power Station is responsible for the handling of all coal into the Station. Some coal is delivered by train, some by truck and some by an overhead (two cable) ropeway from the open cast mine at Maramarua. The coal gang accept the raw coal and either feed it through the crushers and screens into the bunkers or feed it out to the stock pile. They are also responsible for loading the buckets at the Maramarua end of the ropeway.

The work is generally of a specialised labouring nature peculiar to this particular Power Station and not utilising skills which can be bought in from outside to any extent. The work environment is generally noisy, dusty and dangerous and in some sections, such as the ropeway, is paced in a similar fashion to an assembly line. So long as the Power Station is running the coal gang must work to keep up the sup-

ply of coal to the bunkers. Coal, extra to the running requirement, is directed into a stockpile.

Normally one daytime shift with some overtime is worked during the week with a smaller staff on Saturday and Sunday. At times extensive overtime has had to be worked to build up the stockpile before the heavy winter loading. The bunkers hold enough coal to carry the station overnight

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easily. Meremere is a fairly old station and the design is such that the working conditions are not ideal. Also as it is now approaching the later stages of its life expectancy and the annual loading is tending to increase rather than decrease, the maintenance required is very high. These not particularly satisfactory working conditions combined with living in the village on the edge of a large swamp within the fall-out range of the chimneys and similar social problems, have led to a certain amount of unrest at the Station on occasions. Despite these problems the coal gang has always appeared, at least to an outsider, as a fairly stable high morale gang. This study aimed to try and find whether this gang was indeed as stable and of as high a morale as had been assumed, and if so to try and find the reasons for this. Particular attention was paid to the effect of the Maori/Pakeha mixture and the allocation of work to those groups.

The study also attempted to determine whether the leadership contributed to the stability and if so to what extent and by what styles.

THE WORK ENVIRONMENT

The coal gang work environment is typical of many industrial situations. The work is generally very repetitive and some of it physically hard. The men are divided into two basic groups according to their grading and ability. There is a top group of eight who do certain specialised jobs such as locomotive driving and are the seniors in group activities such as 'C' tower. The rest are involved in the group activities and certain individual jobs such as monitoring the screens and crushers. These two groups rotate the jobs within their area on a weekly basis.

The overall supervision is by two foremen and the coal plant overseer who reports to the Assistant Superintendent (Operations).

One of the foremen is at Maramarua where the ropeway loading station is, and the other covers the unloading and bunkering operations. The foremen rotate between the Maramarua and the station ends on a monthly basis.

The men are divided up into groups and individual operations as follows:

- 8 men Maramarua (Bucket loading).
- 4 men C Tower (Bucket unloading).
- 1 Screens and crushers.
- 1 Loader driver.
- 1 Locomotive driver.

- 1 Scraper operator.
- 4 Belt supervision (work independantly).
- 4 Spare (to cover leave sickness and miscellaneous work).

Maramarua and C Tower are group activities. The screens, crushers, belts, locomotive, etc are all individual activities but they are all interdependent to keep the coal flowing.

The work of the coal gang is structured by the physical environment. The coal from Maramarua must be loaded into the ropeway buckets and the buckets must be distributed at an even spacing onto the aerial ropeway. From the Maramarua loading station the coal buckets traverse the ropeway for six miles until they reach C Tower at Meremere. The coal goes from C Tower by way of conveyor belt either into the stockpile or into the station. The direction and tonnage of coal distributed is controlled from an electrically operated control panel which operates a series of valves and gates according to the requirements. This panel is located in the Overseer's Office and is operated by himself or the Foreman. Instructions are sent and received by way of telephone links with the Station Control Room and with Coal Plant staff at the various valve locations.

Also in the Overseer's office is a large planning board which gives data on the shift rosters, weekly and annual coal handled and the targets, leave, safety record and the weekend roster.

THE STUDY

The following approach was seen as the most appropriate taking into account the industrial and social environment of the group.

1. Review of the background of the present members of the coal gang from staff records.
2. Analysis of the turnover of staff in the coal gang and comparison with the study already done on the whole district for a recent 12 month period.
3. Guided interviews with the Overseer, two foremen, Assistant Superintendent (Operations) and general discussions with other staff who have dealings with the gang.

This does not give a direct indication of how the men in the gang themselves feel about working in the gang, but gets as close to this as possible without risk of disturbing the gang.

ANALYSIS OF THE STAFF RECORDS

The records of the current members of the coal gang were analysed to see if there was any pattern evident in the age, background, experience, race or educational qualifications. If any kind of pattern was to emerge it may give guidance to the selection of future members of the gang.

The present gang is 24 men and 3 supervisors. Of the workmen 16 are Maori and 8 are Pakeha. The overseer is an Englishman who has been in the country many years and the two foremen are Maoris.

The analysis showed an apparent evenness in the distribution of experience with 5 Pakehas and 6 Maoris having over 5 years' service in the group. This is despite the present overall ratio of 2 Maoris to 1 Pakeha. The complete group history shows this overall ratio to have been usual.

The statistics indicated that the supposed lower educational level of workers (particularly Maori) in this type of environment is changing. Whereas the older Maori workers (40 to 65) have predominantly no secondary education (apart from one of the Foremen) the younger Maoris are becoming better educated (in terms of years at school) and yet are seeming to stay within the group.

From the Pakeha viewpoint, the educational standard of the group is lower and this could indicate that they are less able to secure other employment rather than an aptitude or interest in the job.

No discernible pattern appeared in the backgrounds and experience of either the Maoris or the Pakehas. The longer service staff have typically come from labouring and similar occupations before joining the coal gang. A lot of the shorter service staff, both Maori and Pakeha, have at some time been drivers or plant operators.

A common attribute of the gang appeared to be a limited level of education, a liking for outdoor physical activity and willingness to work under fairly difficult conditions. There has generally been more Maoris than Pakehas in the gang, but this does not indicate that the Maoris are better suited to this work.

The three supervisors have all come up through the ranks to their present positions. All were originally appointed as attendants when the station was first being commissioned. Because of the very specialised nature of the work and the fairly intimate

knowledge of all aspects of the plant required for safe working it is most likely that any replacement supervisors would also come up through the ranks. The top group mentioned earlier who take the more responsible jobs would be the natural recruiting area for replacement supervisory staff.

LABOUR TURNOVER

A labour turnover study was completed for the whole district for the period 1 June 1975-31 May 1976. This showed a turnover rate as follows:

Total	12.4%
Maori	7.9%
Pakeha	12.6%

Over the period 1 January 1959 to 31 December 1975, 166 men left the coal gang and 180 started with the gang. During this period the size of the gang has increased from 15 to 27 at present. Of the 180 new starts 17 were restarts by men who had been in the gang before. Of the 17 restarts 8 were men who had been recruited for the coal gang, transferred to other areas of the station, and returned to the coal gang. A further 29 of the 180 starts were recruited direct from other areas of the station.

Of the 166 men who left, 54 transferred to other areas of the station and 6 to other areas of the Department. The remaining 106 were resignations or dismissals and left the Department's employ, 9 of whom returned at a later date.

From our records it was not possible to determine the racial mix of the gang over the whole of this period. Therefore total turnover figures only could be produced. Taking the above period, the average turnover of the gang in isolation was 40%, but when transfers to other sections of the station were excluded this dropped to 24.6%.

For the period 1 June 1975 to 31 May 1976 the Maori and Pakeha turnover rates for the coal gang were:

Total	33.3%
Maori	3.7%
Pakeha	29.6%

Whilst our study, as will be shown later, supported the thesis of high morale within the coal gang, the turnover also appeared to be high in comparison to the total district turnover.

It was not possible to determine the racial group of all the staff who left over the 17 year period, but it appeared that the pro-

portion of Maoris in the gang had always been about 2:1 and the Maori total turnover rate had been lower. This is backed up by the figures for 1 June 1975 to 31 May 1976. A large proportion of the Maoris who now work on shift in the station were recruited from the coal gang.

INTERVIEW RESULTS

The results presented here are mainly set out in line with the format used in the guided interviews.

Morale

There was general agreement that the morale of the group was high, however the rate of interaction and degree of interdependence were felt to be the most significant factors in the cohesiveness of the group.

Indications of high morale and cohesiveness were found in such areas as the internal development of job rotas at C Tower and Maramarua, the strong group 'norms' and their enforcement, the interest in meeting targets and proving that they can meet targets and a very low accident rate.

The adverse physical environment was felt to be a contributing factor to the high morale and cohesiveness rather than a detriment. The fact that the men had developed an internal routine to overcome the boredom of the work is significant and also the fact that over the entire life of the group, a continual quest for improved conditions and better job satisfaction has been evident without the usual signs of industrial unrest. Most of the changes have been generated by internal pressure and suggestions and in some cases the Coal Plant Supervisors have instituted improved changes without recourse to Station Management. The group spirit in setting the conditions and in suggesting change appears to have united the group and yet the movement from the group into other areas of the station has remained as has the tendency for some staff to return to the group. In other words, the physical environment, the group involvement and the work itself hold a special attraction for a certain type of worker and enormous job satisfaction is available as a result of the interdependence, the interaction and the ability to work with plant.

Recruitment

The normal method of recruitment is very informal. No direct advertising is done, in fact there does not appear to have ever been the need.

Four sources of recruitment appear as

the normal avenues:

- (a) An individual will call at the station looking for employment and if the Management consider him to be Coal Plant material, he will be engaged.
- (b) Applicants for shiftwork positions will be initially appointed to the area if their suitability for shiftwork is in doubt.
- (c) Friends or family of existing staff will be introduced and employment requested.
- (d) Staff from other areas of the station will request a transfer.

All of the recruitment of course depends upon an established vacancy existing, but a study of the staff levels of the group since its establishment on 13 July 1958 shows that there has never been a significant period of staff shortage. From discussion and study it would appear to have been just the opposite. There have always been people seeking positions in the group.

Background, Age and Qualifications

The stated preference was for persons who had a background of manual labouring or machine/plant operating experience. Age was very rarely a consideration, although of course normal Public Service regulations re age limitations had to be observed.

A basic requirement is a very good level of physical fitness and an aptitude for mechanical plant, although the second is not required in all areas.

The study revealed a differing standard of education between the Maori and Pakeha workers.

Of the Maoris with over 12 months service, 50% had no secondary education. Of the Pakeha workers with over 12 months' service 42% had less than two years' secondary education and only 14% had none.

When classified into age groups however, this distinction becomes reversed. The trend appears to be for a better educated Maori and for a less educated Pakeha.

Of the Maoris under 30, all have had two years' secondary education and 55.6% have had three years or more. Of these 67% have had over 12 months' service. The reverse situation appears to be the case with the Pakeha members.

Leadership

As stated, the formal leadership is provided by an Overseer and two Foremen. The Overseer is a Pakeha and both the

Foremen are Maori. As a formal organisation this appears to achieve its objective, i.e. on-the-job supervision, training and control is provided by the Foremen and the overall control and inter-relation with other areas is provided by the Overseer.

The formal leadership appeared to be perfectly balanced with both 'task-oriented' and 'human-relations orientated' styles evident. This balance appears to fit in with the stressful, uncertain type of activity.

The abilities displayed 'on-the-job' by the formal leaders are also carried over into the social environment.

In addition to the formal leadership, an informal leader appeared within the 'top-group' of workers. Although this 'top-group' is an informal structure, the leadership is recognised at the workplace by all staff.

From our study, it is obvious that a need exists to develop more formal levels of leadership to both improve the opportunities for individual growth and to also provide an avenue of succession for the present supervisors. An informal hierarchy exists but this does not adequately train the forthcoming supervisors, it is merely used as a means of rewarding valuable staff by placing them on more responsible jobs.

Racial Mix and Dominance

The Maori workforce is predominantly from the Waikato area but there is also a group of other tribes. Both the Foremen are from different tribes, one from the Ngapuhi in the far North and the other from the Bay of Plenty. The united group activity appears to have united the tribal elders. Our study indicated a sense of pride among the Maori people in the way their men were able to mix and work with Pakehas and achieve positions of responsibility and recognition. This feeling applies to the whole station. Meremere is looked upon as a triumph for integration and togetherness.

Within the group, no indication of segregation or distribution of duties by race was evident. In fact, the group worked as a compete unit and the rotas and individual routines were completely rostered with the only distinctions being in formal supervisory tasks and a top elite grouping of attendants who are recognised on the basis of length of service, performance and aptitude. The worker whom both Foremen as well as other members of Management saw as the next supervisor is a Pakeha. The

next choice is a Maori. It is all based on merit.

Training

All new staff are given thorough on-the-job training. The new recruit starts by spending half a day with one of the foremen and is shown around the whole installation and the various jobs that are involved. He is then placed with one of the more experienced staff for training to take over one of the more basic tasks. In all training safety is emphasised and the thoroughness of this safety training is borne out in the very low accident rate in the gang. At a later stage if the necessary aptitude is shown special training is given for the more complex activities such as plant operating and locomotive driving. Particular care is given to training for the shunting job where there is a high risk of serious injury.

No outside assistance is received for training apart from the regular safety lectures when the safety officer visits. One foreman is particularly involved in the safety aspects of the job and is a member of the Station Safety Committee.

The Assistant Superintendent (Operations) feels that those Powerhouse Attendants who have been in the coal gang before coming to the station have a much better appreciation of the overall operation of the station and are therefore better attendants. To many people in the station, what happens over the railway line in the coal yard is of no interest, and they just assume the coal will always continue to flow. The Assistant Superintendent suggested that perhaps all attendants should spend some time in the gang as part of their training. While this may benefit the station it could destroy the morale and cohesiveness of the gang and output could drop and problems arise.

Involvement in Community and Village Affairs

The general tendency appears to be for the workmen to interrelate with the rest of the community rather than keep their group structure together during their social contacts. The feeling is that the Maori members, particularly those from the Waikato tribes, tend to spend their leisure time in tribal and community affairs outside of the village.

No sign of group structure outside the job, emerged from our study, but the leadership roles of the two Foremen appear

to carry over very strongly. Both play leading roles in football clubs in the community and also take leadership roles in other community activities.

Seven of the group, apart from the Foremen, play for the local football club and the group also has its own tug-o-war team. Each Foreman coaches the senior team of the two clubs in the area — Meremere and Te Kauwhata.

Within the village, the wives of some of the longer serving Maori members play leading roles in the social and leisure activities of the community. In fact, our study tended to reveal that it was the women, rather than the men, who were the more involved in village and community affairs.

Accident and Sickness Rates

The accident rate within the Coal Plant is very low, particularly in comparison with the rest of the station.

Over the period 1 December 1973 to 30 November 1974, the accident rate for the shift staff was one accident every 9182 manhours worked — a total of 24 accidents, 8 of which involved the loss of time. During the same period, the Coal Plant suffered three accidents, two of which involved lost time and were at a rate of one accident every 20,000 manhours worked.

In view of the elements of plant and equipment involved, these statistics are considered very good. Since 1 April 1976, the Coal Plant has only lost 23 manhours as a result of accidents. According to all the staff interviewed, this rate has always been maintained.

The main cause of the low rate is attributed to the long experience of the supervisors and their deep understanding of the jobs and of the safety hazards involved. Both of the Foremen play an important role in this area. One of the Foremen is Chairman of the Station Safety Committee and in addition, during the induction of new staff, full attention to safety and safety hazards is paid. Both Foremen also pay special attention to on-the-job supervisory functions. They make visits to all areas of their control each day and ensure that any man not observing safety precautions is reminded of his obligations. The group have also developed very strong 'norms' re safety. Any member not paying full attention to these is quickly and strongly "brought into line."

Contrary to our expectations, the level of absenteeism due to sickness and other

leave appears to be high.

For the period 1 December 1974 to 30 November 1975, the members of the group took 1600 manhours of sick leave and 555 hours of special leave without pay. This was in addition to 2000 manhours of annual leave. During this same period the group worked 4600 hours overtime. Although this sick leave ratio equates to just over 7 days per man for the year, it is not evenly spread.

Despite this high rate, the performance of the group has not been affected, mainly due to the fact that the group has evolved a working pattern which allows a 'spare man' in each of the group areas. These men relieve when absences occur.

The high absenteeism also appears to be confined to the lower group of workers, mainly short service staff, and mainly those who do not perform jobs of responsibility.

Productivity

There was general agreement from all areas of Management that the Coal Plant was a very productive group.

When first commissioned the Station was intended as a 'peak load' station. That is, it was only intended to be run during peak loading hours when the demand upon the electricity system was at its highest. During high running periods the men worked long hours and were not able to take leave. During the low running period the staff worked on ropeway maintenance and other tasks which needed doing. They also took their leave.

As a whole, the productivity of the group met the station's requirements although long hours were worked, mostly to meet the demands put upon them by train timetables and other coal deliveries.

Since the running pattern of the station has changed from peak running to base load running, the demands made have changed. The station is now required to supply power at a constantly high rate for the whole year. This means that a group such as the Coal Plant is not able to regulate its routines and must meet the coaling requirements of the station as well as carry out maintenance and allow them to have their leave as entitled as well. In meeting this change the group has reorganised its own work patterns so that not only have they improved the morale, they have also increased the productivity.

Originally the ropeway buckets were automatically spaced by the use of spacer

bars attached to the cable. The gang found that this method impeded an increase in productivity and so the spacers were removed. The gang at Maramarua were then able to alter the spacings manually and so set and attain their own work patterns. In addition, the Maramarua work pattern has also been amended, again by internal group discussion, recommendation and agreement. Originally the eight men worked one week on each of the eight different tasks. This pattern was reduced to one day on each, then one hour and now it stands at half an hour on each task, i.e. four hours for a full rotation of duty. This half-hourly rotation is in addition to the weekly rotation already described.

The C Tower end of the ropeway also demonstrated an internal group rotation. Here a team of four Attendants work a similar type of self-controlled rota. There are actually two ropeways. When both are in operation, the men work in two teams—one man on each ropeway tipping buckets—pushing round corner and starting the empty bucket on its return. Whilst he is doing this the second man on each team is resting or sweeping up any loose coal on the top of the grate. Every half hour the men change duty. In this way, no one man has to actually perform the very onerous task for more than half of a day.

When only one ropeway is in operation (usually as the result of a breakdown or for maintenance purposes) the men work an easier rota. Two men work on the buckets — one aiding them in — one closing and returning and a third man sweeps up. The remaining man rests. Every half hour the duty changes and at times to ease the strain, two men will rest and two will work. No dissension has ever been caused and in fact, men not prepared to accept the routine or to observe the recognised safety procedures — such as even spacing of buckets, clean grates and closed hatches — have been 'brought into line' by the work group.

During the period of our survey, the group was found to be supplying 1000 tons of coal more into the station each week than they were six years ago. Despite this increase in tonnage, the average workload of the group has reduced by eight man-hours per week. This is quite a remarkable achievement and is attributed to the fact that the group feel more involved and more important. They have also adopted the

practice of recording weekly, daily and annual tonnages achieved and quite deliberately set out to 'break' records.

All of this is internal, no prompting from above and no pressure brought to bear. In fact, we observed two Attendants actually coming into the Overseer's office to see what the target was and where they stood. The obvious incentive is the planning board and the fact that by achieving higher targets, the supply 'on-station' is sufficient to allow a more liberal leave routine than if the group were only maintaining a supply sufficient for the running pattern. In other words, they can set their own pace and not be dictated to by plant and power demands.

Maintenance

One of the major routine maintenance jobs is the building up of the sheaves which carry the ropeway and the replacement of the sheave bearings. For many years this was regarded as fitting work and only to be done by the maintenance fitters. During periods of staff shortage the coal gang found that the only way to get them overhauled was to undertake the work themselves, and now this has become their responsibility. They remove the bearings, clean them, weld the sheaves to build up the work areas, replace the bearings and reassemble the sheaves into their sets.

The other major area of maintenance involving the gang is the splicing, repair and occasionally the replacement of the ropes. This is very specialised work and the gang is very proud of their ability to undertake this work with very little outside assistance apart from during rope replacement.

Some of the members of the group, particularly the Maori members, have developed skills which they could not have hoped to accomplish if they had had to rely fully upon outside assistance. Their group has increased its performance during this transition and now exudes a feeling of pride and independence.

CONCLUSIONS

This study confirmed the impression that the coal gang is a high morale group with a very good accident record and high productivity. This high morale is partly the result of the standard of supervision and partly the result of the work environment. A gang in a very interdependent type of job with poor physical working conditions such as in the coal plant will often tend to have

very high or very low morale. The key is to establish a cohesive group who sees the adverse conditions as a challenge rather than as a hindrance.

As a multi-cultural group the gang is a success story. At no time is there any discrimination on the basis of race and no small racial sub-groups have formed in particular areas. All Attendants are treated equally and all rotate through the different jobs. The two Foremen are both Maoris and this selection was made purely on the basis of experience and ability to lead the men.

No major guide to the selection of satisfactory staff was found, apart from an interest in the operation of plant and physical work. Generally a relatively low level of

education is all that is required, though it is noticeable that the younger Maoris do tend to have better education than the young Pakehas.

Both the matching of formal leadership styles and the development of strong informal leadership within the work group was seen as a major contributory factor to the success of the group.

This success has allowed the group to increase its productivity, modify work routines and achieve excellent safety records despite adverse work conditions and a relatively high turnover. Although the turnover appears high in relation to the total district, it is not seen as a major problem to the gang in this study. ©

THE KIWI AND THE WORK ETHIC

W. J. TWINN*

Having worked for an international consultancy firm for a number of years, I have had the opportunity to observe many varying attitudes towards work and leisure in different countries. These differences have been of particular interest to me as I advise on the organisation of companies, hopefully to improve levels of productivity and efficiency. However, I am aware that little attention in this work is paid to cultural differences, which could well be a serious flaw in obtaining satisfactory results. When I arrived in New Zealand in early 1976 I had that initially deceptive impression that attitudes and outlooks here are exactly the same as those in England. Over the last year I have realised that there are significant differences.

My first assignment was in Christchurch, and the winter there was none too warm. Having arrived from an English summer I contracted every sort of cold and flu bug in circulation and spent many evenings in the bar of the motel where I was staying, trying to stop the rot.

One evening I started chatting with a pleasant chap in boots, jeans and T-shirt who I assumed was engaged in the extensions going on to the motel. It gradually dawned on me however, that this was the owner of the establishment, not to mention

his many other interests in Christchurch. The conversation turned to the subject of work, and he told me how he had once had a business in Dunedin. This business had been sold, not for want of profitability, but primarily because it forced him to adopt the role of "manager" — and an absentee manager at that. In his experience, nothing spelt greater trouble than giving this impression to people who worked for you — in his words "they just wouldn't believe that you worked at all," and because of this, felt no great loyalty or responsibility for the welfare of your business. However, if you could keep the enterprise to manage-

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