

# TECHNICAL MANPOWER MANAGEMENT — NEGLECTED BY TECHNOLOGISTS?

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## Abstract

Greater involvement of technical line management in industrial relations matters is considered essential for orderly progress of the South African sugar industry in the 1980's. Against the background of the current industrial relations climate, the evolution of the various categories of "maintenance workers" in the Industrial Council Agreement for the South African sugar industry is seen as a typical area where technologists should be more active. The roles of the skilled artisan and the semi-skilled maintenance worker are compared and seen to be complementary in a productivity-oriented engineering organisation.

## Introduction

Factory technologists, both by training and inclination, ascribe the greatest importance to technical aspects of their factories. As they are the employees specifically entrusted with the companies' machinery and materials resources, this interest is both natural and proper — provided it does not become a preoccupation at the expense of the other two basic resources of money and manpower.

The technologist in line management is all too often guilty of neglecting his responsibilities in regard to the company's money ("That's the accountant's job!") and manpower ("That's the personnel manager's job!"). Without proper care of these resources, the business will soon collapse and the technologist will soon have no machines or materials to look after. No apology is therefore necessary in addressing a crucial aspect of manpower management in a paper for factory technologists.

## Industrial Relations Perspective in the SA Sugar Industry

In introducing a new topic to this congress, the industrial relations background should first be sketched in.

In common with all other major South African industries, the sugar industry is experiencing a manpower situation characterised by two overriding features :

1. A shortage of skills, already critical and still growing, and
2. The development of unions with strong socio-political as well as economic aspirations.

### 1. Skills Shortage

The South African economy is unique in that it is industrialised, capitalist and strongly growing, yet situated on the African continent. This combination of circumstances has led over the past twenty-five years to a rapidly worsening shortage of skills in the economy. The problem has been "red-flagged" in the reports of a succession of commissions since the late sixties. These include the Straszacker Commission (1969)<sup>1</sup>, the Committee for the Better Utilization of Manpower (1969 et seq.), the Goode Committee (1978)<sup>2</sup>, the Wiehahn Commission (1979 et seq.)<sup>3</sup>, the Riekert Commission (1979)<sup>4</sup> and the de Lange Commission (1981)<sup>5</sup>. Each of these most competent bodies expressed the gravest concern at the widening gap between the need in South Africa for technical skills and the supply of suitably trained

people to meet that need, but their combined wisdom identified only two measures likely to yield any significant long term improvement, namely :

Extensive training at all levels, from semi-skilled workers right through to professional engineers and scientists, and

The delegation of technical work to the lowest category of employee able to adequately perform that work, so as to free the engineers, technicians and artisans for that work which cannot be delegated.

The first of these two is an obvious long term solution which is at last being widely accepted and acted upon. The second is also crucially important, but has as yet apparently been little understood by industry in general and has not been sufficiently acted upon. The technical management of the sugar industry is as guilty as most for this omission.

### 2. Unions

Dr. Zac de Beer<sup>6</sup> has summed up most succinctly the present position of the great majority of the work force in South African industry — the Black people. He likened the situation to a factory with three separate boilers on a common steam range. These boilers are the social boiler, the political boiler and the industrial boiler. At present, only one of these boilers is fitted with a relief valve — the legalised unions on the industrial boiler. Consequently, as the fires continue to be stoked, this relief valve will inevitably be called upon to relieve the excess steam from all three boilers.

The sugar industry has already experienced some of this venting of other pressure issues through the unions, and there will undoubtedly be a great deal more in future. This renders industrial relations management particularly sensitive and difficult and it is therefore essential in this area to have well defined, well understood objectives and clear policies.

The purpose of this paper is therefore to clarify objectives and to propose policies for the factory technologist in regard to delegation of tasks to the appropriate skills level, with particular reference to the skilled and semi-skilled engineering ("maintenance worker") functions.

### History of the Maintenance Worker

From the early days of the South African industry, as it emerged from its origins of small private "farm factories", much of the engineering and building type work was carried out by unqualified tradesmen. These were men, often immigrants from other cane sugar industries, who had not served formal apprenticeships but who combined good mechanical aptitudes with practical experience under the technologists of the day.

As the industry and its unions became more formally organised, the importance of these workers was recognised and in the early Industrial Council Agreements they were accorded the status of "handyman". In a job rating scale, running from 1 for the unskilled cleaning labourer to 14 for the qualified artisan, the handyman was evaluated at 12.

Without change to the job definition or grading on the scale, the handyman title was then changed to that of "maintenance worker".

In 1977, the industry adopted the more logical and defensible Paterson job grading system. All jobs were re-described and re-evaluated and, with one important exception, a generally more acceptable grading structure emerged. The exception was the "maintenance worker", where concern about the reaction of the skilled trades unions on the Industrial Council resulted in a most inadequate description of the scope of work being performed by this category of worker. On the basis of this description, the job was graded in the Paterson "Lower B" grade — roughly equivalent to rates 8 or 9 on the old system.

The repercussions of this change continued to provide troublesome anomalies until the negotiation of the current Sugar Agreement<sup>7</sup> in April 1981, when a new category of "certificated maintenance worker" was written into the Agreement at the B5 level, roughly equivalent to the former rate 12. (See Table 1).

Unfortunately, the engineers of the industry have been little involved in these industrial council negotiations, with the result that the significance of this change was not appreciated or thought through and no clear plan of accommodation prepared. Inevitably, slow progress was made in the Industrial Council and some industrial relations problems ensued.

### Technical Hierachy

To see the role of the maintenance worker in perspective, it is useful to consider the entire technical hierarchy. In Table 2, this hierarchy is set out together with the normal Paterson band gradings and the main academic and practical qualifications necessary to be able to perform competently the functional requirements of each level.

In the table, the semi-skilled maintenance worker is shown as requiring at least a measure of conventional schooling (not necessarily technical) as well as a certain amount of skills training. Mr. Rosholt<sup>8</sup> recently observed, "it is futile to talk of training, particularly technical and supervisory, for the majority of... employees... who have had six years of formal education or less". Rieker<sup>4</sup> also refers to the need for "functional literacy". Nevertheless, a number of such employees have already been promoted to maintenance worker positions in the sugar industry and many are not performing competently. To train these people to the required level of technical competence will be difficult or in some cases impossible. The past mistakes should be heeded and future promotions should only be made on the basis of appropriate tests of proficiency.

### Comparison of Artisan and Maintenance Worker

The artisan is commonly perceived as an employee who works with the tools of the trade. From this evolves the simplistic *non sequitur* that all work requiring the use of tools is "artisan's work".

This is a fallacy. The great majority of work done with the tools is either only semi-skilled or skilled but routine in nature. This work can and, in South Africa, should be performed by properly trained semi-skilled workers rather than by the scarce skilled artisans.

The continued employment of skilled — and higher level — technical manpower on work which is at a level below that for which it has been trained is a cost which industry can no longer justify on any grounds whatsoever.

Three clear distinctions separate the skilled artisan from the semi-skilled maintenance worker :

1. *Diagnostic Ability* — from his technical education and apprenticeship, the qualified artisan has theoretical knowledge which enables him to diagnose causes of failure

TABLE 1  
Engineering Job Grades, Sugar Industry Agreement

Classification	Pre-Paterson		1977/1981 (Paterson)		From April 1981	
	Rate	Job Title	Grade	Job Title	Grade	Job Title
Skilled .. .. .	16	Supervisory Artisan	C3	Supervisory Artisan	C3	Supervisory Artisan
	14	Artisan	C2	Artisan	C2	Artisan
	13		C1			
Semi-skilled .. .. .	12	Maintenance Worker	B5		B5	Certificated M W
	9	Assistant M W	B4	Maintenance Worker Assistant M W	B3	Maintenance Worker Assistant M W
	5		B3		B2	
			B2			
		B1				
Unskilled .. .. .	4	Artisan's Hand	A3	Artisan's Hand	A2	Artisan's Hand
	3		A2			
	2		A1			
	1					

TABLE 2  
Technical Hierachy

Job Title	Paterson Grade	Educational Requirement	Practical Experience
Senior Management .. .. .	E — Programming	Technical/Business Degree	Management
Engineers .. .. .	D — Interpretive	Degree/Diploma/"Ticket"	Pupillage
Artisans .. .. .	C — Skilled	Technical Certificate	Apprenticeship
Maintenance Worker .. .. .	B — Semi-skilled	Schooling (± 6 years)	In-service training
Labourers .. .. .	A — Unskilled	Nil	Nil — Simple instruction

and to eliminate those causes. For example, a badly pitted pump impeller would indicate to the artisan a problem with the pump suction arrangements, whereas the maintenance worker would only be expected to replace the impeller. The semi-skilled worker does not require a full understanding of the theory of his trade.

2. *Breadth of Skills* — the apprenticeship and technical college practical classes provide the artisan with broad knowledge across the entire spectrum of his trade, and his theoretical training enables him to work even on unfamiliar equipment. The maintenance worker is specifically trained to undertake familiar work on a limited range of equipment or tasks.
3. *Depth of Skills* — only the artisan has the depth of training and theoretical understanding to undertake certain highly specialised tasks, especially on complex or critically important equipment.

Analysis shows that most of the engineering work in any sugar factory does not require the special skills of the artisan as defined above. The diagnostic ability and versatility of the artisan should best be exploited by his supervising a number of maintenance workers and undertaking himself only the truly skilled elements of their work.

The point should also be made here that the artisans' "trade tests" in South Africa are seriously outdated and deficient in testing the most relevant skills. In fact, only the electrician's trade test provides any meaningful assessment of diagnostic ability, and none provides a satisfactory test of his ability to plan and organise anything but the simplest of jobs.

#### Categories of Maintenance Worker

As shown in Table 1, the current Sugar Industry Agreement defines three categories of maintenance worker.

The new B5 category of "certificated maintenance worker" sought to provide for a higher grade of maintenance worker who could perform without the supervision of an artisan. However, a typical consequence of the lack of involvement of technical staff in these negotiations was the limitation of the job definition of the certificated maintenance worker to the scope of work detailed for the B3 maintenance worker.

In practice this definition is nonsensical because, for example, the B3 welding maintenance worker is limited to "...welding... where the welding electrode has been selected by the artisan" and the "... use of profile cutter and straight line cutter which have been set up by the artisan". It is clearly impossible for a person so limited to work as intended without the supervision of an artisan! Obviously, the spirit of the negotiations should be implemented.

Promotion of maintenance workers from one category to another without an assessment of job content or competence which is understood and seen to be objective by the workers will inevitably result in dissatisfaction amongst those who have not been so promoted. Therefore, if the essential difference between B3 and B5 categories is the latter's ability

to work without supervision, promotion should be subject to a test of the worker's ability to plan and organise complete work assignments without supervision. Tongaat training and technical staff have devised such tests for a number of trades and the results have been remarkable in that surprisingly few of the supposedly competent maintenance workers have proved able to cope when all supervision is withheld. It appears that most maintenance workers are in practice informally "talked through" their work by their supervisors. These employees are clearly not qualified for promotion to the B5 certificated maintenance worker category and promotion of such employees will inevitably lead to pressures for unwarranted promotions of other maintenance workers and will almost certainly thereafter put the entire job grading system of factory shift operators under pressure.

#### Summary

The eighties will be a period of rapid change in the field of industrial relations in South Africa. For this change to be orderly, it is necessary that technical management be well informed on issues such as the maintenance worker and that they participate actively in the formulation of logical, clear policies to meet the developments. By playing a role such as this, the technologist can not only contribute to industrial peace but can also achieve productivity improvements.

However, even well-informed technical management is vulnerable to irresponsible or ill-informed action by more junior management and supervisors. It is therefore essential that comprehensive training in the practice of good industrial relations be implemented at all levels of the organisation, and any companies not already providing such training are advised to do so as a matter of urgency.

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