

## DISCUSSION:

# The value of incentive payments in the mining industry

by K. SMITH

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The author has drawn attention to one of the most important of mining problems, viz productivity, and in so doing has highlighted, perhaps inadvertently, the difficulty of assessing productivity.

The use of 'tonnage handled or milled per employee per year' is not a satisfactory basis of comparison. For example, from 1953 on, the plants on a number of mines were extended to recover uranium; this meant increased operational staff for the same tonnage — an increase in real productivity, but reported as an apparent decrease in 'productivity' from 22 800 to 16 900 tons milled per employee per year from 1953 to 1959 (39 per cent) (Table II).

From 1960-1972, the size of units in newly-erected plants, plus better design, resulted in a significant re-

duction in the number of operators, and an increase in 'productivity' of 111 per cent over this period. Incentive bonuses certainly played no part in this increase, since they were introduced only about 1971.

The corresponding figures for surface artisans show an increase in 'productivity' from 1952-1959 of 29 per cent; during that period, the system of bonus payments became widespread, and one can justifiably attribute the increase to the incentive. From 1960-1972, the rise in 'productivity' was only 70 per cent; this was almost certainly due to the same factors that brought an increase of 111 per cent in the output of plant operators, and not to incentive payments.

From my own observations, I believe that the useful work output of maintenance artisans was lower in 1972 than in 1941, and it is widely felt among plant operators

that the 'incentive bonus' to these artisans was simply an increase in salary. How could it be otherwise when it is virtually impossible, in the case of both maintenance artisans and plant operators, to meet requirements (c), (d), or (e) set out on page 376 of Mr Hazell's contribution?

One even wonders whether 'tonnage handled' is a sound measure of productivity of underground employees. When there is a sudden increase in tonnage mined, all metallurgists on these fields must have felt from time to time that there is a mystic formula stipulating that 'tonnage x grade = k'.

One tends to forget the old saying 'tons milled pay no working costs'. It seems imperative, in making a study of productivity, to devise a reliable yard-stick preferably related to salable output, for the measurement of productivity.

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university degree, provided that it is presented in a manner and on a topic suitable for publication in the journal.

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## Corrigendum

*The Journal*, May 1974, p. 377

We regret that the last portion of A. A. Hazell's contribution to the paper 'The value of incentive payments in the mining industry' by K. Smith was printed in the wrong sequence. That portion of the contribution (page 377) should read as follows:

can be concluded that individual bonus is undesirable in such a

situation.

The use of work study to define the required work performance is the basis of a good bonus scheme. Furthermore, it is the basis of sound training and ensures that a trained Bantu gang member can effectively contribute and earn reward from his first day in the gang. Work study equally well applies to the contractor's job and can be used to

determine the target for any work situation. As such, it can be used to determine the contract.

The use of incentive schemes within a strong management organization can result in large increases in productivity, and the results achieved can be used as a basis to determine the point at which different methods or further mechanization should be introduced.