“PHYSICAL ASSET MANAGEMENT AS A PROFIT DRIVER – A “BACK TO BASICS” CASE STUDY APPROACH”

Author: Dean Griffin MSc – Divisional Manager: Utilities & Facilities - Pragma Africa

Abstract:

In an environment where demand on asset performance, availability and above all reliability is being discussed and debated at the highest levels focus must be placed on the systems, tools and methodologies that can be applied to maximize their effectiveness. This paper looks at how the age old issue of lack of resources is being addressed by Pragma within a South African context.

1.0 Introduction

Asset Performance is directly proportional to 3 factors. Provision, ensuring that the correct asset is selected and installed. Operation, once provided for the asset must be operated in a manner which supports the business and ensures that the asset is effective over its desired life cycle. The last factor is the care of the asset, more often referred to as the maintenance of the asset. If we are lacking in any one of the factors then our asset performance will be lower than desired. Organisations employ a large amount of effort and resources in the acquisition of assets and the subsequent operation of those assets. They invariably believe that they are also investing heavily in maintaining them as well. It is during this maintenance, or caring phase, that poor or lacking execution plays a major toll.

When you look at the reasons for this there are a number and will depend on location type of industry etc. What however seems to be consistent is the manner in which organizations approach the accusation of ‘lack of maintenance’.

2.0 ‘Lack of Maintenance’

When you look in the newspapers, listen to the news, read technical reports one of the common accusations is that there is a lack of maintenance or that the maintenance performed was inadequate. Obviously a generalization but the truth of the matter is that despite organizations having funding and major pushes in developing refurbishment programs or maintenance tactics all too often they fall short. The question is why do they fall short? In the
authors experience there are a number of reasons why maintenance programs fail to deliver the results which they should. Below are just some of the possible reasons.

1. Incorrect maintenance tactic applied
2. Lack of resources
3. Lack of qualified staff
4. Poor execution qualities
5. Poor or inadequate supervision
6. No planning or Scheduling of work
7. Reactive maintenance culture.
8. Lack of understanding of why preventative measures should be taken.

It is often the case that when the chips are down we revert to our base instincts and knowledge and all too often this is one of a fix it when it breaks approach. The first work to get dropped is the tactical inspections or the tactical tasks design to ensure that the desired level of performance is maintained. Focus then shifts to fixing the problems when they occur not preventing them from happening. It is a known fact that to perform a task in a reactive manner will cost more and take longer than doing the same task in a planned and scheduled manner.

In nearly all cases there are a large number of tactical maintenance activities and tasks developed and issued on a weekly basis to prevent failure but still it occurs. Either the wrong tactic is being performed or the right tactic is being performed incorrectly. The root cause of the problem for a lack of maintenance in most cases resides with lack of resource not lack of intent to maintain.

### 3.0 Lack of Resource

Before we talk about lack of resource we must define what resource is. Resource can be funding, labour or tools. The lack of labour resource is probably the biggest issue experienced in South Africa today. It is recognized that a lack of investment has resulted in a backlog of maintenance and funding has been made available within most municipalities, and other organizations to specifically address the backlog. However there are still large holes in organizational structures at the execution layers that lead to a lack of maintenance.

Organisations compound this deficit by then using the labour available to do non-execution activities. The key organizational element responsible for effective execution is the supervisory layer. The supervisors or foreman or team leaders are tasked with activities that prevent them from performing their primary role. They are responsible for the act of ensuring that the work is performed at the right time, to the right quality, at an effective rate and is at the right cost. If a supervisor is tasked with planning work, scheduling resource, dealing with work entry and recording then the time spent supervising is low. What organizations then state is that their workforce is self directing or autonomous. Both worthy claims but both result in a less effective labour resource.

When we don’t have enough people to do the tasks at hand then it is even more important to utilize the ones we do have on the highest priority activities or the tasks that, if are not done, will hurt us most. So the question is how can we make sure that the people we have are fully utilized and effective?

### 4.0 Utilised & Effective

How can organizations ensure that their depleted labour resource is fully utilized and effective in the most cost effective manner? The answer lies in the ability to understand the requirement to perform maintenance activity albeit Non-Tactical Urgent (breakdown), Non-Tactical deferred or Tactical in nature. There are a few steps which must be followed to ensure that the labour force is effective.

The first is to understand the nature of the assets that are serviced by the team. If the frequency of failure is high, or the number of breakdowns is high, then there needs to be a dedicated team looking at only reactive tasks. This may be referred to as a ‘firefighting’ team. The size of the team will be dependent on the number of breakdowns, geographical coverage, time of year etc. The role of this team is purely to address urgent tasks. Little or no planning is performed and all activity is reactively dispatched. The utilization of this group is relatively low. Although they have fast response times they will invariably take longer to execute the task due to the reactive nature of operation. When the tasks outstanding outnumber the team members longer downtime or disruption occurs.

The second step to establish is a group that only work on planned and scheduled tasks. These
tasks are not only tactical but they include Non-Tactical deferred work as well. The key is that the execution of a job only takes place when all the materials, tools and people are available to do so. A planned and scheduled job is shorter in duration and costs less than a reactive task. The upside to this is that the resulting time saving and cost saving can be used to perform more tasks. The efficiency of the workforce is often referred to as ‘Wrench Time’.

Doc Palmer in his book ‘Maintenance and Planning Handbook’ defines that typical wrench time lies between 25% and 35%. Where basic planning & scheduling takes place this can be raised to 30% to 40%. If full work planning and scheduling is performed over a rolling 4 week period the result can be a workforce with a wrench time of up to 60%. What does that mean to an organization?

Assume an organization has 30 people with a wrench time of 25-35% as per the industry norm. If we increase the wrench time to 55% by implementing planning & scheduling principles and tools then it equates to another 17 people. 17 extra people without increasing headcount or salary cost. So the question must be why don’t we all implement planning and scheduling solutions. The answer is that most organizations do, the only issue is that the people they use to do it are the ones that should be executing the maintenance. So maybe it is a percentage of ‘not enough labour resource’ but it is definitely a case of a miss-directed work force.

5.0 Areas of Strength

Everyone has areas where they are very strong and we often refer to this as an area of strength. True strengths are areas where time is immaterial. An engaged team is probably made up of individuals who are playing to their strengths. In a survey of 198,000 employees from 36 companies employees were asked the question of whether they were able to play to their strengths every day. Those who stated that they strongly agreed were 50% more likely to work in teams with lower employee turnover, 38% more likely to work in more productive teams, and 44% more likely to work in teams with higher customer satisfaction scores. Over time those teams that increased the number of employees who strongly agreed saw comparable increases in productivity, customer loyalty and employee retention. What this means is that to get the best from the scarce resource that currently exists we need to leverage the strengths that exist. Invariably that strength is the ability to execute maintenance tasks well. Time and effort spent reactively managing work requirements is often stated during interviews as a drain.

There is a trend in industry to outsource activities. Condition monitoring tasks are easy examples. What we are finding more and more is the requirement for the planning and scheduling of maintenance activity and the control of the asset management information base to be outsourced. If established correctly and managed on a monthly basis with key service level agreements a scarce execution resource is transformed into one where a healthy backlog is managed and processed to facilitate higher wrench times. Higher wrench times translate to more effective work force which ultimately translate to higher availabilities, improved reliabilities and more cost effective operation of the organizations asset base.

Asset care centers (ACC) are established on client sites and totally manage the asset management function. Providing direct access to asset information (DATA). Information can then be used to optimize systems, identify areas of opportunity and weakness and to ultimately raise the performance of the service provider. At the ACC’s that Pragma manage we also drive activities such as Asset Identification and Verification and support them in the day to day transactional workings.

6.0 Conclusions

When looking at maintenance activity it is often referred to as a cost as opposed to a profit driver. If performed effectively a reduction in maintenance cost can be achieved resulting in higher profits. The key to effective execution of maintenance is

1. Perform the right tasks at the right time correctly
2. Increase maintenance labour effectiveness by providing them with good quality well scheduled work
3. Manage the execution quality through close and regular supervision.
4. Release people to do what they are primarily paid to do.
5. Review failures with a view to putting place a tactical task to prevent the failure occurring again.

6. Review the maintenance tasks that are performed to ensure that the task is correct, it is at the correct frequency and that the asset is performing as designed.

References

- Go put your strengths to work – Marcus Buckingham
- Network Asset Condition Assessment and refurbishment planning – DJ Very, MEN Du Freez, H van der Merwe (NETGroup SA)