

Introduction To

PHYSICAL ASSET & MAINTENANCE MANAGEMENT

First Edition

A note from the author.

The earth is a physical asset that we as a human race are responsible to manage and the manner in which this is performed can affect us on a global scale. How we utilize the natural resources and maintain the cleanliness of the land, water and air directly affects the delicate balance and quality of life for present and future generations.

Contents

Preface

I have written this book in an attempt to convey the general concepts, principles and importance of physical asset and maintenance management. Both of these functions are in many ways taken for granted only because we don't realize or acknowledge the fact that the effects of how these functions are performed affect our everyday lives. As with many things in life, when they are operating smoothly and functioning properly, we tend not to acknowledge or think about the associated

tasks and costs that are required to maintain these conditions.

This book identifies **WHAT** functions and programs a physical asset management system is comprised of and **WHY** they are needed. However, it does not dwell on **HOW** these functions and programs are to be implemented. The need for them and how they are implemented will vary based on several factors such as what types of products and services an organization provides, the size of the organization and the existing infrastructure and culture.

Introduction

The majority of us perform ***physical asset management*** related activities regularly and don't even realize it. We rely on the effective management of physical assets in our daily lives that are utilized in industries such as utilities, transportation, waste & water treatment, oil, chemical, automotive, electronic, construction, pharmaceutical, health & nutrition, real-estate, medical, food, aerospace, defense, manufacturing and entertainment. We depend on the fact that physical assets such as aircraft are managed and maintained properly so that they will not fall from the sky or a nuclear power plant reactor does not incur a meltdown. The entire infrastructure in which we live depends on

physical asset management and how effectively and efficiently it is applied.

The simple fact is that just about every organization performs physical asset related activities. The size of an organization, quantity and complexity of physical assets and type of products or services that an organization provides directly affects the extent and complexity of a physical asset management system. As with many things in life, we can choose to ignore or even reject a systematic approach as to how these activities are performed or we can choose to embrace and organize them. The organized implementation and management of a physical asset management and how this is implemented and maintained will directly and indirectly affect the success of the organization.

This book will explain the different aspects of physical asset management and briefly describe the implementation of maintenance management as well. It addresses the importance of a reoccurring activity that

significantly affects the life of many physical assets which is known as ***maintenance***.

Physical Assets

Let's begin with an analogy that the majority of us can relate to. Many of us own, lease or rent an automobile and a home within we live. These are both forms of physical assets. The majority of us like our physical assets to be clean, nice looking and well maintained. When we entertain friends and relatives, we like to impress them with our physical assets. A dirty home or automobile does not leave a good impression. They can look, feel and smell unpleasant or even offensive and affect issues such as safety, health and performance. When we plan

to acquire a physical asset, we usually think about several factors such as initial cost, quality, appearance, efficiency, reliability, performance, longevity and if you are maintenance minded, maintainability.

A physical asset has many stages that it passes through which define its' lifecycle. This lifecycle includes stages such as acquisition, commissioning, maintenance and disposal to name a few. The planning function is usually performed during several stages of the lifecycle. Using our current analogy, let us focus on the automobile. An automobile is initially planned, designed, engineered and manufactured by the automobile manufacturer before it is sold to the public. This process includes quality control activities to ensure that a reliable product is delivered to the end user and will fulfill the defined requirements as expected. This is typically a part of the commissioning process.

The customer is the one that will purchase the automobile and will be shopping around and evaluating

factors such as price, appearance, quality, efficiency, dependability, reliability and longevity. The fact is that the initial cost or price alone should not be the only influencing factor. There is a cost which is associated with an automobile's life which is known as physical asset lifecycle cost. In many instances, the most significant cost associated with a physical assets life besides the initial investment is the cost of maintenance. Maintenance includes activities such as cleaning, repairs, inspections, servicing and periodic parts replacements. If an automobile is not maintained properly at scheduled intervals, the influencing factors which were initially considered appealing prior to the purchase will deteriorate thus affecting the value and reliability of the automobile. In another example, the buyer might purchase an automobile that has low quality ratings but the lower initial cost is appealing. However, due to the low quality rating, this type of automobile may experience significantly more component failures which affect the reliability of the automobile. In both cases, the

lack of reliability will have a severe impact on the owner such as reactive repairs, excessive costs and inconvenience.

We have clearly defined some of the important factors that influence physical assets. The analogy that we used with automobiles and homes can be directly applied to organization environments. The majority of organizations are housed in some form of a building. Additionally, organizations usually purchase, rent or lease physical assets such as computers, printers, furniture, vehicles, machinery and equipment. In many instances, there seems to be a separation of how we view and treat our personal physical assets compared to the physical assets that are utilized by our organization. In reality, the physical assets of an organization should be treated with a higher level of respect and care than our own personal physical assets. This is due to the fact that the physical assets that are utilized by the organization contribute to providing the organizations' revenue, success and the income that funds our personal physical assets. So why is

it that in many organizations this is not recognized? This may be due to the manner and the method in which physical asset management and more specifically maintenance management is viewed, understood and implemented within an organization and also understanding the associated risks of not having a system in place. The majority of organizations that embrace physical asset management have a carefully planned, defined and structured implementation of it with the accompanying strategies, plans, policies, procedures, functions, programs and supporting systems. These organizations have learned that not having a system in place affects the performance, success and competitiveness of the organization and can actually jeopardize their existence.

Physical Asset Lifecycle

A physical asset is typically exposed to each of the following activities throughout its' life.

1. Plan
2. Design, Engineer
3. Purchase, Lease, Rent, Acquire
4. Construct, Build, Fabricate, Assemble
5. Commission
6. Maintain
7. Audit, Inspect, Evaluate
8. Rebuild, Dispose
9. Replace

Physical Asset Management System

It is extremely important that a scalable Strategic Asset Management Plan (SAMP) is developed that includes the involvement of stakeholders. This plan should define how physical assets are managed throughout the various lifecycle stages. A physical asset and maintenance policy must also be established that the stakeholders agree to live by.