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There are a variety of different maintenance regimes that a facility manager may select. The selection of the most appropriate methodology will depend on many factors to do with purpose, resources and timing. Applying the desired maintenance regime requires consideration of detailed operational features such as how to deal with spares, warranties, health and safety.

Condition Based Maintenance (CBM) is an approach where activities are carried out following inspection of the asset and comparison of its actual state with the desired condition. Effectively it is a variation on the old adage "if it ain't broke don't fix it". The amendment might read 'if it ain't broke and you can prove it don't fix it.'

Properly implemented CBM moves away from traditional maintenance scheduling based on calendar, hours run or similar time related usage measures. CBM still generates time related maintenance tasks but these are related to tangible measures of the machine's condition, ideally they are non intrusive and relate to known failure modes.

For example, motor gearboxes are prone to teeth wearing. Route Cause Analysis or a similar investigative technique may determine that this is due to deterioration of the lubricating oil. A suitable condition based maintenance task would then be taking oil samples for specialist analysis every 3 months. The maintenance task would therefore be the oil sampling with follow up only being initiated by adverse reports on the condition of the oil.

In this example it will be obvious that there are several alternatives to the condition based maintenance task suggested. Wrongly designed a CBM approach can be expensive and must therefore be justified on a cost v benefit analysis. On small units it may be more economic to revert to planned preventive maintenance such as changing the oil and filter at set periods.

CBM can only be used on machines that show deterioration in some way and over a time period that allows a maintenance response before they fail. A gearbox is a good example where signs of deterioration such as vibration, overheating noise might be expected before failure. On the other hand, although a light bulb has visible failure characteristics they are over such a short timescale that it is an impractical subject for CBM.

However a CBM approach can deliver some significant advantages over planned maintenance including improved system reliability, fewer problems caused by human error, increased up-time and decreased maintenance costs

Two excellent books on maintenance strategies are Guide M: Maintenance Engineering and Management published by CIBSE ISBN 9781903287934 and Lee's Building Maintenance Management by Paul Wordsworth ISBN Lee's Building Maintenance Management