

1 MCBF DEFINITION

The definition of Mean Cycle Between Failure (MCBF) means the amount of failure per million of cycles. It depends on the definition of what is considered a system failure. A failure is considered to be an out of design condition which places the system out of service and into a state for repair. Note that in this definition the down time caused by scheduled maintenance is not considered within the definition of failure.

2 DETERMINATION METHOD FOR THE MCBF USED BY AUTOMATIC SYSTEMS

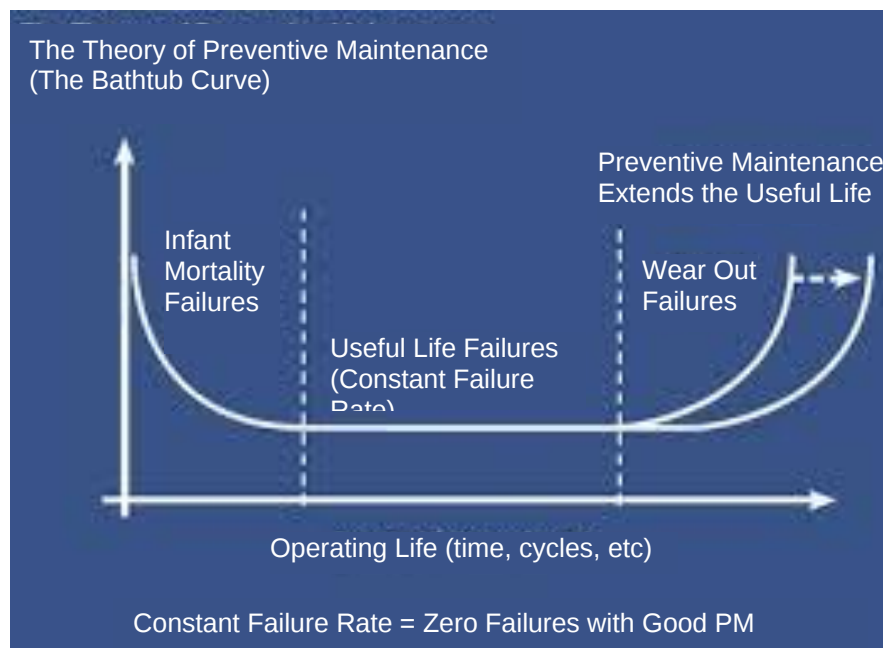
Automatic Systems uses statistical and field test analysis to determine the MCBF. The Preventive maintenance program is designed to enhance the MCBF and reduces the occurrence of unscheduled downtime.

2.1 Statistical Data Analysis

At first all critical components are identified. For commercial components, we get the theoretical MCBF as given by the manufacturer. For component designed by Automatic Systems, the MCBF is calculated. Each component is assigned a criticality number based on the quantity of time they are used. We then use the FIT method to determine the FIT coefficient for the equipment. The equipment FIT coefficient is translate into a MCBF. The MCBF calculate may be lower than the desired MCBF. To increase the MCBF a preventive maintenance plan is created.

2.2 Preventive Maintenance Program

To increase the MCBF obtained via the statistical analysis a preventive maintenance plan will be defined. The purpose of the preventive maintenance plan is to allow replacement of the component that limits the MCBF before their failure, henceforth eliminating them from the MCBF equation. The Bathtub curve illustrates how the MCBF can be increased by the preventive maintenance. To refine the MCBF study we will use field data.



2.3 Field Data Analysis

To gather field data we will set product in continuous cycle test and get information from our customer using the barriers. This will allow us to identify any weaker link that could not be predicted by the statistical analysis. We will use this information to improve the preventive maintenance and extend the MCBF furthermore.