Abstract: The cumulative cost model can provide construction equipment managers a valuable tool for better understanding the nature of repair costs as they relate to their production fleets. Data that are being collected (or that could be collected) can assist in the determination of the rate of accumulation of repair costs for machine for a given period of use, the estimation of fleet repair budgets for a job or period, and the estimation of the viable economic life of a particular machine. The cumulative cost model was originally intended to be applied to fleets of equipment for which the owner had detailed life to date repair costs. The model can also be applied using a slightly different period cost based methodology that does not require the owner to possess data for the entire history of the machines. This paper will provide a brief introduction of the cumulative cost model and a comparison of the life-to-date and period cost based methodologies of its application.