



reliability. experience. integrity.™

# Failure Hierarchy

The MRG Failure Hierarchy is available through the Catapult® EAM System Launcher, a software package that helps you build and sustain reliability strategies on any scale with ease and efficiency.

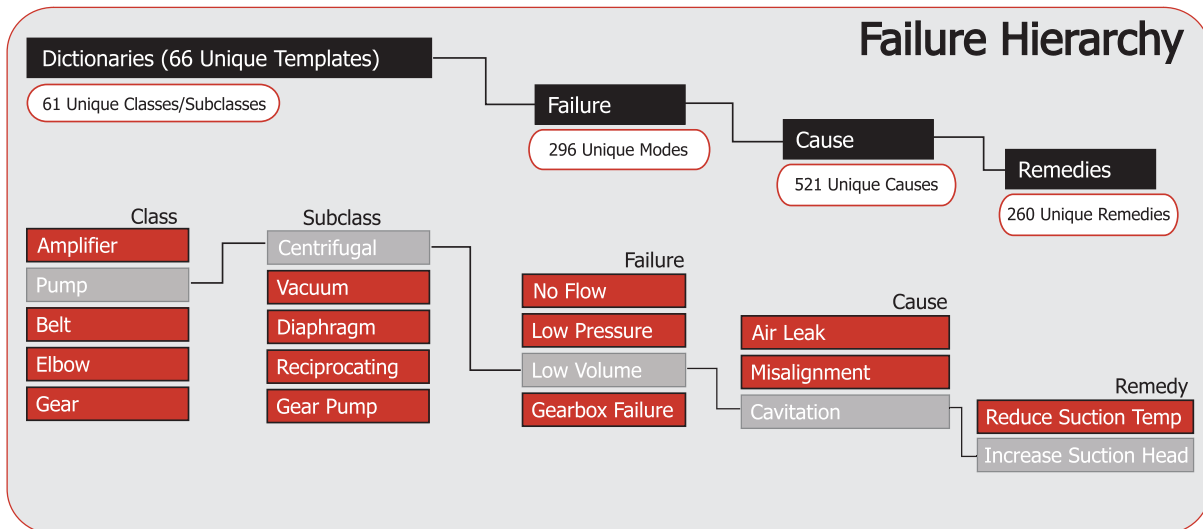
Not only does the Catapult® organize and standardize your foundational data, it uses this improved data to build reliability fundamentals. Catapult® will allow you to systematically align our failure hierarchy to all of your assets.

Catapult® works outside of your CMMS, allowing rapid deployment of core CMMS/EAM data and reliability fundamentals. It will store your data until your program is ready to go live.

Most CMMS or EAM systems have the capability to create failure modes, but they do not provide the high quality content available in MRG's failure hierarchy.

It is important to perform accurate, consistent reporting when closing out work orders. Efficiently categorizing your work orders will allow you to return to the information to uncover bad actors and support root cause failure analysis.

MRG has identified the failure hierarchies for more than 65 classes and sub-classes of equipment which has resulted in the creation of 296 unique equipment failure codes. The failure hierarchy describes the failure of the equipment, the possible cause for the failure and recommended remedies for correcting the failure.



Here is an example of a Failure Hierarchy for a Centrifugal Pump. Four of the Failure Modes for the pump are listed: No Flow, Low Pressure, Low Volume, and Gearbox Failure.

For this example, the Failure Mode is "Low Volume" with "Cavitation" as the Failure Cause. There are two possible Failure Controls for the Failure Hierarchy Pump/Centrifugal/Low Volume/Cavitation: Reduce Suction Temperature and Increase Suction Head.

"Increase Suction Head" is the chosen Failure Remedy and the report is now complete with a standardized failure description.