Maintenance planning and scheduling

Introduction of my work:

My initial aim was to model aircraft maintenace as a markov decision process. For this endeavour, it is important to model the number of tasks and different maintenace events that might occur. It is also important to model the transition dynamics of the system (the intervals dof the different tasks). The final contribution, would be to allow for the usage of off-the-shelf model-freee algorithms and obtain interesting schedules and maintenance plans.

Research flags to help answering the following questions

Common and most popular algorithms of scheduling in maintenance? heuristics? MILP? beyond?

How to define and model stochastic events in maintenance planning, e.g, repairs/introducing new equipments, etc.?

How to define priority in task assignement? Which tasks are more important (more costly if delayed)>

How to estimate the associated costs of delays in maintenance in general, wether we surpassed the due date, hired extra hours for enginers, ordered equipment in the last minute?

Assuming we want to do monte carlo simulation runs to estimate the overeall cost of some of the decisions in planning and scheduling, what exactly ends up being the objective function/reward/cost scale? How to define a reward function of asssigning a task in a specific day?