

MROs - How they function?

Modern aircraft is one of the most complex machines ever created. The Airbus A 380 for instance is composed of over a million parts. Companies involved in the Maintenance, Repair & Operation (MRO) of aircraft engines cannot afford to keep stock of too many components as buffer stock, for obvious reasons. Aircrafts undergo periodical checks such as A & C checks and delay in component availability will lead the aircraft to be grounded for a longer duration than necessary.

MRO companies have to adhere to stringent quality control measures regarding engine performance, efficiency, engine smoothness and protection. The fuel injection systems, cylinders, turbo chargers and valves and propellers are some important engine components that require proper servicing and overhaul. Any problem in fuel line should be replaced and not just repaired. Aircraft engine maintenance involves the safety of the crew and passengers concerned and therefore, no aspect of the maintenance schedule or component servicing can be taken lightly.

Everyday, thousands of airplane tyres are inflated around the world. Even this seemingly small procedure could prove fatal, if adequate precautionary steps are not taken. There have been instances of fatal injuries to Ground service employee(s) due to explosion caused by unregulated air pressure while inflating. The absence of a pressure regulator and over inflation pressure relieve valve (OPR valve) were cited to be the reasons for the explosion of wheels.

Landing gear maintenance service includes overhaul of landing gear assembly, surface treatments, anodizing, machining and grinding of landing gear assembly, bushing fabrication MPI (Magnetic Particle Inspection) FPI (Fluorescent Penetrant Inspection) and metal and heat treatment etc.

MRO companies use borescope which is just the industrial version of the medical endoscope and is used to view or inspect something that is not easy to get to without taking apart or disassembly. Another name for Borescope is Remote Visual Inspection or RVI for short. During borescope inspection, it should be ensured that the ignition is turned off and engine power disconnected.

A timed sequence of valve opening and closing is essential for reliable engine operation. A stuck valve is liable to cause engine failure. Propeller strikes can occur in situations where the landing gear collapses causing one or more blades to be bent or when the hangar door or any other object hits the propeller blade.

The engine maintenance schedule involves a series of tasks such as Engine dis-assembly, inspection and cleaning, reconditioning and repair of crankcase, crankshaft, connecting rods etc., overhauling of fuel systems and magnetos and final test run. Before the start of any service or maintenance it should be ensured to switch off the ignition switch and also disconnect all power to engine, to stop accidental engine startup.

Challenges in Aviation MRO

Airlines are in constant look out for plugging loopholes that mar operational efficiency. For MROs, prolonged downtime could affect operational efficiency while lacunae in maintenance is endangering. Spare parts visibility that enables to track a particular asset as quickly as possible. It is vital for achieving highest level of on-time performance.

How to improve visibility with TrackIT's EnTrackRealtime?

Having felt the need for a comprehensive WIP tracking system for Aircraft engine service companies

and MROs, TrackIT Solutions designed and developed [EnTrackRealtime](#), for Realtime tracking of assemblies and parts on shop floor. EnTrackRealtime maximizes efficiency, provides required visibility to all stakeholders and reduces lag time for optimal turnaround time.

TrackIT's EnTrackRealtime contains information related to parts of the assemblies and sub-assemblies, integrated part movement on shop floor with workflow, Check-In/Out of parts, Inventory maintenance and generates alerts and notifications to the right person at the right time. EnTrackRealtime integrates smoothly with existing MRO ERP systems resulting in improved turnaround

For more details on EnTrackRealtime, contact: sales@trackit.aero