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## **THE AIRCRAFT MAINTENANCE MANAGEMENT - OPERATIONAL LEVEL**

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### **Abstract:**

The continuously changes generated by the development and modernization of the aeronautical technique, affected the concepts of the aircraft maintenance strategy. The new systems of monitoring the technical state of the aircrafts, the “electronic information”, influence the politics of maintenance activity. This fact has a great influence on the management strategy but obeying the basic principles of management.

*Key words: aircraft, maintenance*

### **1.Introduction**

Aviation Maintenance Activities are the backbone of all successful aviation enterprises.

Good maintenance provides safer and more reliable aircraft usage. Without a good maintenance management, the aviation enterprise is adversely affected.

The maintenance manager is continuously encountering a variety of problems involving phases of technology, administration, production, personnel and management function. In order to direct the maintenance effort of his organization, the manager must understand the required operating principles and to apply them in his work. [1]

### **2. Maintenance activity. Types and Definitions**

Maintenance, repair, and operations (MRO) or maintenance, repair, and overhaul involves fixing any sort of mechanical, plumbing or electrical device should it become out of order or broken (known as repair, unscheduled or casualty maintenance). It also includes performing routine actions which keep the device in working order (known as scheduled maintenance) or prevents trouble from arising (preventive maintenance). MRO may be defined as, "All actions which have the objective of retaining or restoring an item in or to a state in which it can perform its required function. The actions include the combination of all technical and corresponding administrative, managerial, and supervision actions." [3]

Generally speaking, there are three types of maintenance in use:

Preventive maintenance, where equipment is maintained before break down occurs. This type of maintenance has many different variations and is subject of various researches to determine best and most efficient way to maintain equipment. Recent studies have shown that Preventive maintenance is effective in preventing age related failures of the equipment. For random failure patterns which amount to 80% of the failure patterns, condition monitoring proves to be effective.

Corrective maintenance, where equipment is maintained after break down. This maintenance is often most expensive because worn equipment can damage other parts and cause multiple damage.

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Reliability centered maintenance, often known as RCM, is a process to ensure that assets continue to do what their users require in their present operating context.

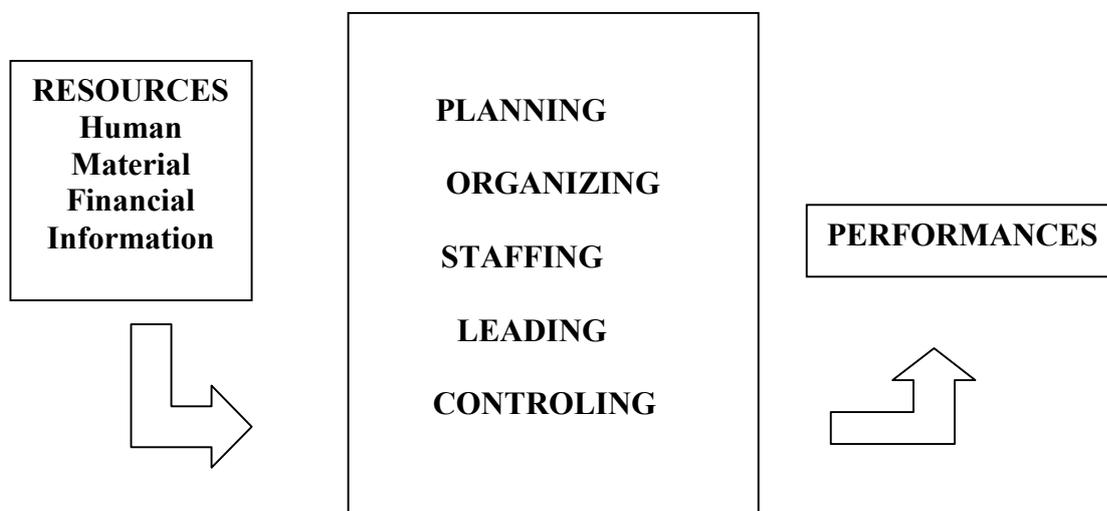
Aircraft maintenance - operational level is the day-to-day work that an operating unit performs in support of its own operations. The mission of the O-level activity is to maintain its aircraft and equipment in a full mission capable status while improving the local maintenance process. Maintenance at this level includes line operations (inspections, servicing, handling, and so forth) and periodic inspections of aircraft and equipment and associated tests. O-level maintenance also includes repairs and minor adjustments that do not require shop facilities as well as the removal and installation of components. Operating units perform O-level maintenance in assigned facilities. In an operating activity, permanently assigned specialists normally perform maintenance.

The aircraft maintenance includes both preventive maintenance and corrective maintenance.

The activity has a high level of complexity. It requires qualified personnel, technological and financial resources, and an efficient management.

The Aircraft Maintenance Management - operational level, could be defined as the act of coordinating the efforts of people to accomplish desired goals: maintaining the state of operability of aircraft using available resources efficiently and effectively.

### **2. Essential Stages of the Aircraft Maintenance Management**



**Resources:** represent the inputs:

- human resources: airframe and powerplant technicians, electrical and avionics technicians, armament technicians and so forth
- material resources: aircraft and equipment, testing devices, special ground vehicles, other technological equipments
- information: military regulations, technical specifications, maintenance guides, orders, informational links with other maintenance structures.

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## **Essential Features of Organization Management**

### **Planning**

- maintenance activity plan preparation
- evaluation of the necessary resources involved : human, financial, materials, information
- evaluation of time requirements

### **Organizing**

- organizing refers to the judicious use of resources to achieve the objectives .
- periodically analysis of activity (daily and weekly) in order to estimate the amount of resources necessary for the next period. In addition, it provides the necessary time to relocate resources as needed.

### **Staffing**

- recruiting the right personnel for the maintenance activity, according with the requested technical specialty for each position team. The level of qualification of personnel and the number may depends on the complexity of the planned mission and by the volume of work required
- maintaining a high level of qualification by training courses

### **Leading**

- setting clear attributions and responsibilities for the technical team members according with the military regulations. The technical team leader must make sure that his team members work in according with the technical regulations. He is the one who decides what would be right in a particular situation and take the necessary measures.

### **Control**

- The leader is permanently informed about the work in progress, based on the hierarchies inside the team or by personal inspections.

### **Time Management**

- prioritization of actions in order to be on schedule.

### **Motivation**

- motivation goes a long way in binding the team members together.
- appreciating the employees for their good work make them work efficient for a longer span of time.

**Performances:** represent the outputs

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- maintaining aircrafts and equipments in a full mission capable status.

[1], [2], [3]

### **4. Conclusions**

Development of new strategies regarding the aircraft maintenance must consider the essential features of management organization.

A good management offers benefits regarding the safety of flights, an efficient usage of resources and accomplishment of the flight missions in time.

### **References:**

[1] Frank H. King, *Aircraft Maintenance Management*, Southern Illinois University, 1986

[2] Harry Kinnison, *Aviation Maintenance Management*, Mc. Gran Hill Professional, 2004

[3] U.S. Department of Homeland Security United States Coast Guard, *Aeronautical Engineering Maintenance Management Manual*, 2011