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(Aircraft maintenance 2)

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Introduction

Aircraft maintenance is the performance of tasks required to ensure the continuing airworthiness of an aircraft or aircraft part, including overhaul, inspection, replacement, defect rectification, and the embodiment of modifications, compliance with airworthiness directives and repair. The maintenance of aircraft is highly regulated, in order to ensure safe and correct functioning during flight. In civil aviation national regulations are coordinated under international standards, established by the International Civil Aviation Organization (ICAO). The ICAO standards have to be implemented by local airworthiness authorities to regulate the maintenance tasks, personnel and inspection system. Maintenance staff must be licensed for the tasks they carry out.

Aircraft maintenance in civil aviation generally organized using a maintenance checks or blocks which are packages of maintenance tasks that have to be done on an aircraft after a certain amount of time or usage. Packages are constructed by dividing the maintenance tasks into convenient, bite-size chunks to minimize the time the aircraft is out of service, to keep the maintenance workload level, and to maximize the use of maintenance facilities.

Multiple choice questions

Aircraft Health Monitoring

1. Aircraft maintenance is the overhaul, repair, inspection or modification of an aircraft or aircraft component.

- a) True
- b) False

Answer: A

2. Which of the following is the most extensive maintenance check to be performed on an aircraft?

- a) A-Check

b) D-Check

c) B-Check

d) C-Check

Answer: B

3. What is the full form of CAMP?

a) Continuous Air Mileage Program

b) Continuous Air Maintenance Program

c) Continuous Airworthiness Maintenance Program

d) Continuous Airworthiness Mileage Program

Answer: C

4. The continuous inspection program for commercial aircraft in India, is approved by which of the following authorities?

a) DGCA

b) EASA

c) FAA

d) DCGA

Answer: A

5. Aircraft Maintenance personnel are also known as _____

a) Aircraft Maintenance Engineer

b) Aircraft Maintaining Engineer

c) Air Maintenance Engineer

d) Air Maintaining Engineer

Answer: A

6. Who is responsible to review the airworthiness certificate, maintenance records, and other required paperwork to verify that the aircraft is airworthy?

- a) Copilot
- b) Aircraft Maintenance Engineer
- c) Purser
- d) Pilot

Answer: D

7. Which is the most expensive maintenance check of all?

- a) A-Check
- b) D-Check
- c) C-Check
- d) B-Check

Answer: B

8. Where do the heavier checks (C-check and D-check) take place?

- a) Maintenance, repair and overhaul (MRO) company sites
- b) Airport bay
- c) Manufacturing sites
- d) Hangar

Answer: A

Error capturing

1. How many man hours does a D-check require?

- a) 40
- b) 400
- c) 4,000
- d) 40,000

Answer: D

2. Military aircraft normally follow specific maintenance programs which may or may not be similar to the commercial/civil operators.

- a) True
- b) False

Answer: A

3. A maintenance release can also be called as _____

- a) Certificate of release to service (CRS)
- b) Maintenance release certificate
- c) Release certificate
- d) Certification of release to service

Answer: A

4. What is the full form of ICAO?

- a) International Commercial Aviation Organization
- b) International Civil Aviation Organization
- c) Indian Civil Aviation Organization
- d) Indian Commercial Aviation Organization

Answer: B

5. Which of the following issues Airworthiness Directive's (ADs) in Australia?

- a) CASA
- b) Transport Canada
- c) New Zealand Civil Aviation Authority
- d) DGCA

Answer: A

6. The CAMP only includes routine inspections.

- a) True

b) False

Answer: B

7. The maintenance carried out while an airplane is parked at an airport waiting for the next takeoff is generally referred to as _____

- a) Line maintenance
- b) Major maintenance
- c) General Maintenance
- d) Base Maintenance

Answer: A

8. What is the full form of AMP?

- a) Air Maintenance Program
- b) Aircraft Maintaining Program
- c) Aircraft Maintenance Program
- d) Air Maintaining Program

Answer: C

Line or Routine Maintenance

1. Line maintenance is carried out at the apron.

- a) True
- b) False

Answer: A

2. Which one of the following is not true with respect to line maintenance?

- a) Quick turnaround time
- b) Aircraft is refueled
- c) Critical instruments are checked for defects

d) Performed at MRO sites

Answer: D

3. What is the full form of SRM?

- a) Structure Repair Manual
- b) Structure Repairing Manual
- c) Structural Repair Manual
- d) Structural Repairing Manual

Answer: A

4. Out of the following, which is not an important factor affecting the work of the line maintenance engineer?

- a) Time
- b) Weather
- c) Ground staff
- d) Fuel

Answer: A

5. Preflight inspection is conducted by _____

- a) Copilot
- b) Pilot
- c) Purser
- d) Ground staff

Answer: B

6. What is the full form of LRU?

- a) Line-replaced unit
- b) Line-repositioned unit
- c) Line-rested unit

d) Line-replaceable unit

Answer: D

7. Which one of the following is not true with respect to LRU?

- a) Increases system costs
- b) Improves quality
- c) Can be stocked
- d) Can be replaced quickly

Answer: A

8. How much time is required for line maintenance?

- a) 45 minutes
- b) 450 minutes
- c) 45 hours
- d) 450 hours

Answer: A

9. Line maintenance can be both, scheduled or unscheduled.

- a) True
- b) False

Answer: A

10. Line maintenance is less extensive than Heavy maintenance.

- a) True
- b) False

Answer: A

11. Line Maintenance is also known as _____

- a) Heavy Maintenance

- b) Electrical Maintenance
- c) General Maintenance
- d) Routine Maintenance

Answer: D

Base or Major Maintenance

1. What is considered an aircraft cycle?

- a) Takeoff and landing
- b) Landing
- c) Takeoff
- d) Flying hours

Answer: A

2. Preflight inspection is a part of _____

- a) Landing
- b) Base Maintenance
- c) Takeoff
- d) Line Maintenance

Answer: D

3. How many pressurization cycles can a Boeing 747 endure?

- a) 3,500
- b) 350
- c) 35,000
- d) 35

Answer: C

4. Airlines and other commercial operators of large or turbine-powered aircraft follow a continuous inspection program approved by the _____

- a) EASA
- b) DGCA
- c) CASA
- d) FAA

Answer: B

5. Category B-check is performed at a _____

- a) Hangar
- b) Apron
- c) MRO site
- d) Parking bay

Answer: A

6. How many checks are there in the base maintenance cycle?

- a) 2
- b) 16
- c) 10
- d) 6

Answer: D

7. Which one of the following is not true with respect to base maintenance?

- a) Costlier than line maintenance
- b) Greater man power required
- c) Requires smaller space
- d) More extensive than line maintenance

Answer: C

8. How much time is required for C-check?

- a) 2 weeks

b) 2 months

c) 2 days

d) 2 years

Answer: A

9. D-checks are unscheduled.

a) True

b) False

Answer: B

10. Base maintenance is more extensive than Line Maintenance.

a) True

b) False

Answer: A

11. D-Check is also known as _____

a) Heavy Maintenance Visit

b) Light Maintenance Visit

c) Regular Maintenance Visit

d) Unscheduled Maintenance Visit

Answer: A

Conclusion

Since aircraft maintenance deals with the performance of tasks on an aircraft, engine, propeller, or associated part required to ensure the continuing airworthiness of an aircraft, engine, propeller, or associated part including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.

A combination of several actions (visual inspection, operational check, functional test,

rigging check) may be necessary in some cases. In that condition, the Error-capturing method should always be implemented to avoid errors during maintenance.

An error capturing method is implemented after the performance of any critical maintenance task such as;

- Tasks that may affect the control of the aircraft flight path and attitudes, such as installation, rigging, and adjustments of flight controls;
- Aircraft stability control systems (autopilot, fuel transfer);
- Tasks that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers, and rotors; and
- Overhaul, calibration, or rigging of engines, propellers, transmissions, and gearboxes.

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