

Maintenance Action by Pilots

Pilot maintenance is defined as actions performed by pilots beyond the visual assessment required for a pre-flight inspection. Pilot maintenance actions result from a malfunction and can typically require cycling/deactivating of circuit breakers on the flight deck and/or passenger cabin, visually checking the operation of flight control surfaces, operation of switches in the flight deck and/or passenger cabin, performing software tests, applying INOP stickers, visual confirmation that doors are closed & locked, and more.

Dispatching an aircraft after maintenance action performed by the pilot is done under Part M (Continuing Airworthiness) and Part 145 (Maintenance Organisation Approval) regulation. This regulation provides the possibility to qualify and authorise the PIC (Pilot in Command) to release the aircraft to service. Sufficient practical training should be carried out to ensure that the PIC can accomplish the task to the required standard.

Procedures are normally documented in the MEL (Minimum Equipment List) / CDL (Configuration Deviation List) and possibly the AMM (Aircraft Maintenance Manual) / FIM (Fault Isolation Manual). An example of the use of authorised AMM/FIM limitations can be deferring an AML (Aircraft Maintenance Log) entry requiring an inspection within a certain time limit (e.g. a minor overspeed). In all cases a defined list of items for which pilot maintenance is available should be published.

Pilot maintenance actions have to be adequately trained, during type qualification, recurrent training and if applicable by on the job training before performing the maintenance action (e.g. by reading the procedure to be performed).

Pilot maintenance actions are not prescribed by the aircraft manufacturer and not defined and bounded by clear regulations. As a result, these actions may be diverse and differ from operator to operator. To prevent abuse of the possibilities that pilot maintenance can provide, and negative consequences for the pilot and/or flight safety, clear and well defined boundaries have to be established and documented in an Operations Manual.

A special case of pilot maintenance is the inspection and dispatch of the aircraft after a bird strike, for which additional requirements are described in the last paragraph.

IFALPA does not encourage maintenance actions performed by pilots. However, the Federation recognizes that it is becoming a practice by some operators, in which case the following aspects should be taken into account:

General requirements

- Pilots should be adequately trained on performing maintenance actions
- Pilot maintenance actions should be subject to PIC's discretion. Refusal to perform such actions should not lead to disciplinary measures
- Pilot maintenance actions should always be performed under the authority of the PIC
- The PIC should use sound judgment to verify his ability to successfully accomplish the maintenance action
- Responsibilities for maintenance actions performed by pilots should be clearly defined
- Pilot maintenance should not replace (part of) scheduled maintenance services
- Pilot maintenance actions should be approved and specified by MEL/CDL and based on the AMM/FIM. A defined list of items should be published
- A detailed and exclusive list of approved pilot maintenance tasks is coordinated between operator, Part 145 organisation and regulator
- Every step of the pilot maintenance action to be performed should be documented. In-flight maintenance should be restricted to those items explicitly described in the flight crew documentation.
- Pilot maintenance action should always be performed in consultation with a certified technician. All parties involved should agree that pilot maintenance will be performed. Every step of the procedure should be reviewed together
- The decision to dispatch the aircraft should be supported by all parties involved, i.e. the PIC, maintenance organisation and operator
- Pilot maintenance should not be used for troubleshooting
- Qualified maintenance personnel should rectify existing technical defects at the first feasible opportunity

Operational requirements

- The source of the malfunction should be positively identifiable
- A failed component or system for which pilot maintenance action is applied should not adversely affect operation of other components or systems
- No maintenance action should be taken to alter any of the aircraft computer's software/database.
- No specific tools should be required
- No additional skills should be required
- Pilot maintenance actions should only be performed in readily accessible areas. No additional equipment should be required, such as stairs, to reach a certain area
- No special precautions for personal protection should be necessary
- Any pilot maintenance action performed on the aircraft should be recorded in the AML

Bird strike inspection and dispatch by PIC

- The pilot should only dispatch the aircraft in certain clearly defined cases, depending on bird strike location, damage, obstruction or possible malfunction
- Conditions requiring a certified technician should be clearly defined. Typical conditions are, amongst others:
 - bird ingestion into any part of the engine
 - bird remains in openings, intakes or probes
 - visible damage such as buckling, cracks, dents, loose rivets, damaged paint finish, delamination, leakages or loosened parts
 - bird strike on a composite material (because of possible invisible delamination)
 - technical malfunctions detected possibly related to the bird strike
 - bird remnants that prevent inspection or assessment
 - any doubt that exists about the serviceability of the aircraft
- Bird strike inspection should always be performed in consultation with a certified technician. All parties involved should agree that a bird strike inspection will be performed. Every step of the procedure should be reviewed together
- A bird strike inspection procedure should be documented and available
- Possible health risks resulting from bird strike inspection should be addressed, including the provision of necessary equipment, such as gloves and a disposable overall
- Qualified maintenance personnel should perform a bird strike inspection at the first feasible opportunity