

Considering the Difference Between EASA Line Maintenance & Base Maintenance

Sofema Aviation Services (SAS) www.sassofia.com considers the difference between Line & Base Maintenance and how to assess the scope of required work.

What is meant by Line Maintenance?

The definition of aircraft line maintenance is provided in AMC 145.A.10, together with a list of activities which “may” be considered as line maintenance

The word “may” is used because it is not possible to establish a provision giving a strict border line between line and base maintenance, having general applicability to all cases.

According to EASA Part 145, AMC 145.A.10, line maintenance should be understood as “any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight.”

This may include:

- Trouble shooting
- Defect rectification
- Component replacement, up to and including engines and propellers, with use of external test equipment if required
- Scheduled maintenance and/or checks including visual inspections that will detect obvious failures but do not require extensive in depth inspection. It may also include internal structure, systems and powerplant items which are visible through quick opening access panels/doors
- Minor repairs and modifications which do not require extensive disassembly and can be accomplished by simple means

EASA Part 145, AMC 145.A.10 also explains that “for temporary or occasional cases (ADs, SBs) the Quality Manager may accept base maintenance tasks to be performed by a line maintenance organisation provided all requirements are fulfilled as defined by the competent authority”. It is also noted that “Maintenance tasks falling outside these criteria are considered to be Base Maintenance”.

Example of “decision making process”

A 2A maintenance check on a B737 classic aircraft type is normally considered “line maintenance” when the routine tasks are assessed as per the manufacturer MPD/ operator AMP.

- Therefore, a maintenance organisation may be approved to perform this check under a line maintenance scope of work.
- However, a work order to perform the “2A check”, where the customer operator would request the performance of works in addition to the “2A” routine tasks, such as the addition of ADs, SBs, deferred tasks, will need to be carefully assessed by the maintenance organisation with the use of the “decision making process”.

Note - This type of maintenance check may easily fall within the examples given in the following chapter 1.5 “Example of maintenance activity considered to be base maintenance” having the result to be considered as base maintenance and being outside the maintenance organisation scope of work.

In such a case, the outcome of the “decision making process”, may be for example:

- The impossibility to accept such work order from the customer operator, being outside the scope of work of the maintenance organisation, or;
- To agree with the customer operator a revised work order, to remove the works which have been identified as base maintenance tasks (e.g. removal of a S.B. which was requiring extensive disassembly and modification of flight controls, etc.).

Example of maintenance activity considered to be base maintenance.

When any of the following task is required to be carried out (regardless if contained in a scheduled maintenance check or arising from a defect rectification/AOG situation), a base maintenance scope of approval is needed:

- High number of different type of tasks to be carried out, even if taken singularly those tasks may still fall under the definition of line maintenance (i.e. a combination of
 - routine task cards,
 - non-routine task cards issued following defects discovered during the check,
 - out of phase tasks,
 - deferred items from previous maintenance,
 - minor repairs,
 - minor modifications,
 - component replacement, etc.).
- Such case is clearly requiring a base maintenance production planning support and/or base maintenance release to service process (category C C/S supported by B1/B2 support staff) in order to ensure that all the maintenance ordered has been carried out before issuing the CRS;

- Replacement of any major component where the related maintenance procedures clearly address the need of an hangar environment requiring special ground support equipment and/or structured production planning and/or complex and lengthy maintenance, such as for example
 - A full landing gear replacement ,
 - Simultaneous replacement of two engines, etc.;
- Any scheduled maintenance task (i.e. routine task from the MP) which requires extensive disassembly of the aircraft and/or extensive in depth inspection;
- Major repairs and/or major modifications;
- Trouble shooting and/or Defect Rectification requiring special ground support usually relevant to base maintenance (e.g.: special equipment, structured production planning, complex and lengthy maintenance).
- A scheduled maintenance event, which in the planning phase has been already identified as significant in terms of duration and/or man-hours (i.e. an A/C down time above 72 hours or four shifts whichever is less).
- A work package requiring a complex team composition in terms of high Number & Categories (avionic, structure, cabin, NDT qualification and skills, etc.) of staff involved per shift.
- The management of the event by B1 and B2 support staff and the release by a C certifying staff.

Note: The maintenance organisation remains responsible to ensure that even if each individual work order is falling under the line maintenance activity, a maintenance event which is cumulating several of these work orders remains within the line maintenance scope of activity.

Assessment of Maintenance Task by an Already Approved Maintenance Organisation

For an approved maintenance organisation, it remains its responsibility to assess if any maintenance requested by the customer falls within the approved line maintenance scope of work. This assessment is expected to be performed based on the “decision making process”

- A “decision making process” needs to be established in the MOE (normally chapter 2.28 production planning procedure) in order to assess:
 - The need to access the hangar (even if the activity is permitted under a line maintenance scope of approval), considering in particular the type of aircraft, the maintenance event type/complexity, the environmental and weather conditions;
 - Any work order / work package received from the customer operator to ensure it may be fully performed under a line maintenance scope of

approval, taking into account additional works to the original work package that may be added, leading out to the line maintenance scope of work, such as:

- Addition of previously deferred maintenance tasks;
- Defects raising from the routine tasks (these defects are not known in advance, however, the related risk in terms of number and level of defects needs to be taken into account and estimated in advance).

Next Steps

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