

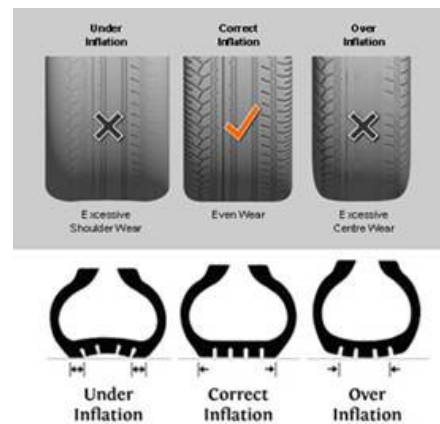
A Guide to tire pressure monitoring

The requirement

EASA has issued a requirement in Part 26 (26.201) that requires operators of large aeroplanes to minimize the risk of a tire being below its minimum serviceable inflation pressure during operation. If the aircraft is equipped with a tire pressure monitoring system, this shall be ensured by either an automatic alert of the system when the Pressure is below service limit or, if no such alert is provided, by including a task to check the tire pressure in the pilot's preflight inspection. If the aircraft is not equipped with a tire pressure monitoring system, a maintenance task shall be included in the aircraft maintenance program (AMP) to check the tire pressure in a suitable interval. The interval should not exceed 48 clock hours and could be insured by a daily pressure check. Longer intervals can be approved by the competent authority based on substantiating data.

The reason

Several occurrences and even accidents led to the establishment of this requirement. Tire pressure is a factor that, when not adjusted to the correct range, influences the tire wear and can even cause a tire burst. This may lead to runway excursions with catastrophic consequences.



The issue

EASA has provided the possibility to adjust the interval of the maintenance task (needed when no tire pressure monitoring system is installed) based on data collected in regard of typical pressure losses of the installed tire/wheel design. This data can stem from in-service experience data (can also include similar wheel designs) or the tire manufacturer. An analysis of this data shall be provided to substantiate the proposed interval for the tire pressure check.

During application of the requirement, it became evident that data from tire manufacturers is currently not available and little statistical data in regard of typical tire pressure loss is available to operators. This means that the task interval for the maintenance task would need to be set to 48 hours maximum. This is often impractical (airports without maintenance support couldn't be used) and places additional burden on business jet operators (daily maintenance action required). Austro Control GmbH therefore concluded that as a compensating measure a program is required, which will generate such data and guarantee the daily tire pressure check to be performed. This program is called a tire pressure monitoring program. Operators may use this program to substantiate extended intervals for the required maintenance task.

The tire pressure monitoring program

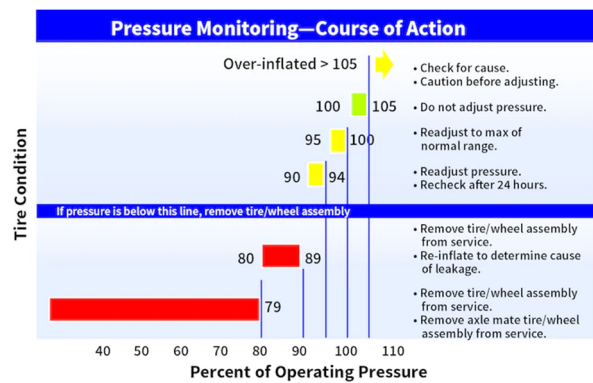
The program shall ensure that the tire pressure is monitored and these values are recorded by the flight crew on a daily basis during operation of the aircraft. To ensure this, a sound monitoring program shall encompass the following items:

1.) Risk assessment

The Operator shall conduct a risk assessment on the implementation of such a system and shall ensure, that all necessary actions are being taken to minimize the risks introduced by this system to the operation of the aircraft and the flight crew performing the task.

2.) Instructions for the tire pressure check

A clear set of instructions for the performance of the tire pressure check shall be provided to the flight crew performing the operational pressure monitoring task. This shall include not only the instructions how to perform the measurement but also to record the data, instructions which action will be necessary according to the actual pressure value and indicate to require maintenance assistance when necessary. The recorded data shall be transmitted to the CAMO on a regular basis.



3.) Flight crew Training

The crew shall be trained in the performance of the tire pressure check. A corresponding training program shall be set up and included in the flight crew training (OM-D). This may include training from an MRO or other technical organisation.

4.) Preflight checklist

The necessity for the performance of the tire pressure check and recording of the data shall be included in the pre-flight checklist (prior to the first flight of the day). The instructions for the performance (item 2) may be included in whole or referenced in the checklist.

Note: As the tire pressure check is part of the pre-flight inspection, it will be signed off together with it. No separate release or sign off is required.

5.) Pressure gauge

The pressure gauge used for the tire pressure check shall be of a suitable type (acc. the aircraft manufacturer specs, appropriate pressure range, minimizing loss of tire pressure) and shall be held serviceable according the instructions provided with it. Repetitive maintenance intervals for the pressure gauge shall be monitored by the CAMO when necessary. Note: the use of one



pressure gauge per aircraft is recommended to allow an accurate analysis.

6.) Data analysis

The CAMO shall analyze the data received from the flight crew on receipt for reasonability and on regular basis for the indicated pressure loss of the tire's. Data received from MROs during performance of the maintenance task and unscheduled tire pressure fill data shall supplement this data. Special attention shall be used for deviating value's, single tire's with diverging loss rates, and when tires are replaced and a new tire without history data is introduced.

7.) Aircraft Maintenance Program (AMP)

A maintenance task for the tire pressure check shall be inserted in the AMP. When a tire pressure monitoring program is provided initially (without having any data of the expected pressure loss of the tire's) Austro Control accept that the interval for the maintenance task is set to 7 days. The use of the tire pressure monitoring program for the interval determination shall be mentioned in the AMP. When sufficient data is available, the interval of the maintenance task may be adjusted according to the escalation procedure of the AMP.

If the airplane manufacturer already defines a maintenance task for the tire pressure check in the MRB scheduled maintenance program, such task have to be complied by the operator.

The use of a tire pressure monitoring program shall enhance safety of operation with its daily check to ensure the tire pressure will be established and maintained in an acceptable range during operation of the aircraft. It will also enable the adjustment of the interval of the maintenance task in the AMP by generating the necessary substantiating data.

If you need further information or you have questions during the development of your tire pressure monitoring program, please ask your POI or maintenance program inspector.