

Full-Scale Tyre Pressure Tests (PEP – 3)

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Abstract

This paper describes a full-scale test planned to improve experimental and theoretical knowledge related to the aircraft internal tyre pressure inflation effects directly at the surface of the flexible pavement. Since modern aircraft can have a tyre pressure greater than 15 bar, the tests will focus for tyre pressure from 15 bar to 17 bar. Several pavement test sections will be tested taking into account different parameters representative of current and/or old flexible pavement construction such as quality, performance and thickness of asphalt layer including asphalt surface treatment (groove). The simulation vehicle device will be able to tests simultaneously three different tyre pressure (15, 16 and 17 bar) for two tyre technologies (Nylon and NZG tyre) in the same thermal conditions. The seven tests section will be instrumented in order to measure resilient strains and permanent displacement (rutting). Failure criteria selected will be representative of pavement surface damage that would result in an airport decision to repair damage, which would lead to a number of movements between 10 000 and 15 000 passes. The attempt will be made to isolate pavement failure to tire pressure effects only, and not to test the pavement to complete failure. After test completion, the results will be presented at ICAO level for their consideration.

Paper

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