



Boeing Pavement Strength Overload Guidance

A number of airlines have requested Boeing guidance concerning aircraft operating at weights above the published pavement strength rating of a runway. In all cases, the airport authority is the final authority concerning what are permissible operating weights for their airport facilities. The following guidance basically conforms / complies with ICAO Doc 9157-AN/901, Part 3, Chapter 2, "Guidance on Overload Operations."

For normal operations, pavement limits can usually be exceeded by 5 to 10 % without any appreciable impact on pavement life. For low frequency operations, overloads on the order of 10 to 25 % are usually considered acceptable, however the pavement should be in good condition, otherwise near-term deterioration may be initiated by the overload. For emergency situations, a 50-100% overload allowance is generally accepted, subject to the discretion of the airport involved.

The above is written in a generic fashion, such that if a pavement is rated strictly by weight (such as "Dual Tandem 300,000 pounds" for example) the overload percentages can be applied directly to the rated weight (a 10 % overload equates to a 330,000 pound allowance in this case). If however a pavement is rated by a Pavement Classification Number (PCN) or a Load Classification Number (LCN), the overload percentages are applied to the PCN (or LCN) number, so the allowed weights will not directly reflect the percentages indicated, but will relate to the PCN's or LCN's that are so-increased. For example, if an airport has a PCN of 32 FB, the 25 % overload allowable for low frequency operations would be 40 FB (1.25 x 32). The corresponding weights in this case for a 737-800 would be 123,000 pounds for routine operations, and 157,000 pounds for the low frequency level of operations. Note that for any overload operations, the pavement should be in good condition, otherwise adverse effects may rapidly become evident.

Additional questions concerning this issue can be directed to Boeing's Airport Technology group as follows:

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