

aircraft considered in the design of the airport's pavement. The FAA found, in summary, that the airport operator could limit use above the design weight of the pavement, but that some operations above that weight could and should be permitted, because they would have no measurable effect on the pavement. The FAA has received several questions relating to the policy underlying that determination.

In view of the importance of the policies at stake, we believe it is appropriate to issue more specific guidance on the specific issue of weight-based access restrictions.

The policy proposed in this notice provides more detailed guidance on how the FAA will interpret Grant Assurance No. 22, in cases in which an airport sponsor limits operation by aircraft above a certain weight in order to preserve the integrity of airport pavement. The FAA requests comment on the following statement of policy, and may modify the policy in accordance with comments received on this notice. For any cases presented before a final policy is issued, the FAA will apply the policy as proposed in this notice.

For the above reasons, the FAA proposes to adopt the following policy:

**Operating Limitations to Protect Airport Pavements From the Effects of Operations in Excess of Design Weight-Bearing Capacity**

1. When designing new airport pavement or rehabilitating existing pavement, airport operators design the pavement to accommodate the loads and frequencies of the aircraft expected to use the airport over the period of expected pavement life. A load-bearing capacity is then assigned to the pavement based upon the most demanding aircraft. Once that pavement is constructed, airport operators have a responsibility to protect the local and Federal investment in the pavement. At the same time, airport operators are encouraged to upgrade airport pavements for forecast increases in aircraft size or operations, or if the number of operations and size of aircraft increase over time beyond what was forecast.

2. Airport pavements are designed to accommodate a finite number of aircraft operations, based on planning forecasts and experience. In most cases it should not be necessary or appropriate to impose aircraft operating restrictions to protect pavement from occasional operations of aircraft which exceed the published pavement strength. Even in the exceptional case in which the mix of aircraft types using the pavement

becomes heavier over time, a limitation on maximum weight of aircraft may not be warranted. It is the nature of airport pavement to begin a gradual deterioration process as soon as it is opened to traffic. A pavement designed for a specified number of operations by an aircraft type of a particular weight will not be immediately affected by some number of operations by heavier aircraft, up to a point. In general, each 10% increase in weight of the most demanding aircraft will decrease the number of design operations by 20–25%. The original load-bearing capacity of pavement may be increased by surface overlays or other pavement rehabilitation techniques. Therefore, some number of operations by aircraft exceeding the design load-bearing capacity of airport pavement by some degree will ordinarily not have a sufficient impact to shorten its useful life. (The Airport/Facility Directory introductory language notes that “[m]any airport pavements are capable of supporting limited operations with gross weights of 25–50% in excess of the published figures.”).

3. However, where the airport operator reasonably believes that actual damage or excessive wear has resulted or would result from operation of aircraft of a particular weight (and particular gear configurations), then the airport operator can limit those operations to the extent necessary to prevent that damage or excessive wear.

4. The design load-bearing capacity of pavement is a guide to the probability of adverse effects on pavement life. Design load-bearing capacity is demonstrated by planning and engineering documents created at the time the pavement was designed, constructed, rehabilitated or improved. Testing to determine actual load-bearing capacity may be appropriate or necessary where design information is unavailable or does not appear to represent actual current condition of the pavement.

5. Any action by the airport operator to limit operations above the design load-bearing capacity must be reasonable and unjustly discriminatory, and would require evidence of the effect of operations at certain weights on the pavement. Such limitations, if determined to be necessary, could include:

- Requiring particular taxi routes and parking areas for aircraft above a certain weight, to avoid weaker areas;
- Requiring prior permission for operation by aircraft above the design load-bearing capacity of the pavement (see examples in Exhibit 1);

- Permitting operations of such aircraft only up to a certain weight;
- Prohibiting all operations by aircraft exceeding a weight at which even a small number of operations would significantly reduce pavement life.
- Assigning heavy aircraft a particular runway (through agreement with Air Traffic Control) if operationally feasible.

Operating procedures, such as requiring use of designated taxiways and ramp parking areas, are preferable to an outright ban or limit on the number of operations. A limit on the number of operations and/or weight of operations must be based on an analysis of pavement life using known pavement design capacity, actual load-bearing capacity, and actual condition. That analysis can be performed with the AAS-100 Pavement Design Software, based on Advisory Circular (AC) 150/5320-6D, available on the FAA Airports web site. An analysis is also required to assess the load-carrying capacity of existing bridges, culverts, in-pavement light fixtures, and other structures affected by the proposed traffic. Such structures are generally not capable of supporting a single load application above design limits, and may preclude any operations by heavier aircraft unless other taxi routes can be specified. Guidance for those evaluations is stated in AC 150/5320-6D.

6. The airport operator may avoid any issue of reasonable, nondiscriminatory access to the airport by accommodating current operations and bringing pavement up to the standard for the current use of the airport as the condition of the pavement requires.

7. This policy applies only to pavement weight-bearing capacity and pavement condition, and does not apply to geometric airport design standards.

8. This policy applies only to the purpose of protecting an airport operator's investment in pavement, and is not a substitute for noise restrictions. If there is no showing of need to protect pavement life, or the limit on airport use appears motivated by interest in mitigating noise without going through processes that exist for such restrictions, an attempt to limit aircraft by weight will be considered unreasonable. The FAA notes that there are a few existing noise rules that include weight categories, generally adopted before ANCA and the AAIA were enacted. Issues arising under those rules will be addressed on a case-by-case basis.

*Examples*

Airport operators may experience demand for use of the airport by aircraft that weigh more than the design load-bearing capacity of the airport