A Science Service Feature

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? WHY THE WEATHER ?

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"BUMPY" AIR

"Bumpiness" is such a common experience of the aviator that in England they have devised a numerical scale for recording the extent to which it prevails in the atmosphere at any time and place. The scale runs:

0 No bumps.
1 Slight bumps.
2 Occasional bumps.
3 Bumpy.
4 Very bumpy.
5 Exceptionally bumpy.

Bumpiness is sometimes due to vertical currents set up as a result of irregular heating of the earth's surface, such as the contrast between a green field and a tract of bare ground strongly heated by sunshine. Sometimes it is due to eddies and other irregularities caused in the horizontal flow of air by hills and mountains. Lastly, sometimes it is an incident of a squall or thunderstorm, regardless of the state and configuration of the ground. The jolt experienced by aircraft in bumpy air is described as a "bump," and if it is due to irregular heating of the ground it is sometimes termed a "heat bump."

Heat bumps can often be traced to very small features of the ground. Thus, according to the Monthly Weather Review: "Roads, railroads, edges of plowed fields, forest edges and clearings, barn roofs, hangars, ditches, borders of swamps, shore lines all give bumps, which can be identified generally up to 700 or 800 feet, and on calm days occasionally to 2,500 and even 3,500 feet or more. The bumps associated with macadam roads and other hot places are not necessarily directly over the road, but to leeward at a distance depending on the velocity of the wind and the height of the airplane."

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