Why can't small planes take off if temperatures rise?

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A new reason is added so that the aircraft does not take off that heat. In the United States, airlines canceled more than 40 flights a day when temperatures were set at 119 degrees F (more than 48 degrees C). Why so?

1. Aircraft and 11 unexpected secrets that not everyone knows
2. Meaning of numbers on airport runways

Air density in hot days is the obstacle for pilots to control small planes to take off. Most small aircraft are difficult to safely land when the temperature is too high due to lack of lift because the heated air will become thin.

The aircraft can take off because of the lift generated by the movement of the air stream below. When the temperature is high, the air expands, causing less gas molecules beneath the wings.

If the lift force of the air is reduced, to safely take off the aircraft, it is necessary to have larger thrust, running longer on the runway with greater speed. When these conditions exceed the threshold, small planes are paralyzed. The aircraft may be unable to leave the runway if it takes off or crosses the runway if it tries to land.

To ensure safety, Dubai International Airport and other airports in the Gulf, where there are frequent hot weather, flights choose the time of take-off and landing at night or early morning.

In order not to be affected by high temperatures, Gulf aircraft also tend to make longer flights, using larger aircraft with wider wings. If the temperature is too high, the airlines will have to reduce the aircraft's transport volume by selling fewer tickets, reducing cargo or taking off with unburnt fuel tanks and refueling in one location other cooler.

In addition, high temperatures not only affect air density, but also potentially weaken or melt connections on aircraft, causing passenger and crew safety.