No One Can Explain Why Planes Stay in the Air

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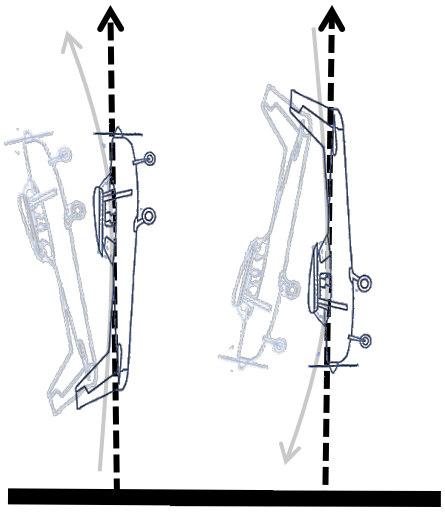
Abstract

I read your fascinating article. If you wish, I am very eager to send you important information in this regard. I hope this material is liked by you and your esteemed readers.

Introduction

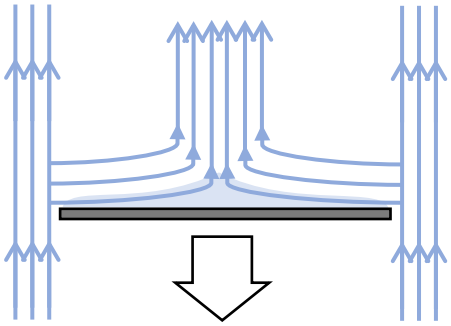
In addition to the contents of the article, another question can be asked. Why can a plane experience a vertical flight upwards or a free fall (in the direction of a straight line assuming perpendicular to the ground)? In answer to this question, if we assume that airfoil is the cause of low pressure above the airplane wing (according to the Bernoulli equation), then the aircraft will not be able to fly the mentioned hypothetical line, because due to the mentioned principle, the movement of the airplane tends to the direction where the upper part of its wings (low pressure) is located - Bernoulli's equation is also established in this case - and Instead of a direct motion, it will create an angular motion, while in reality such a thing does not happen and the airplane is able to fly the mentioned hypothetical line directly. Now, if we assume that airfoil is not the main cause of low pressure on the wings, then there must be a convincing answer to the question, "So what causes the low pressure on the wings?".



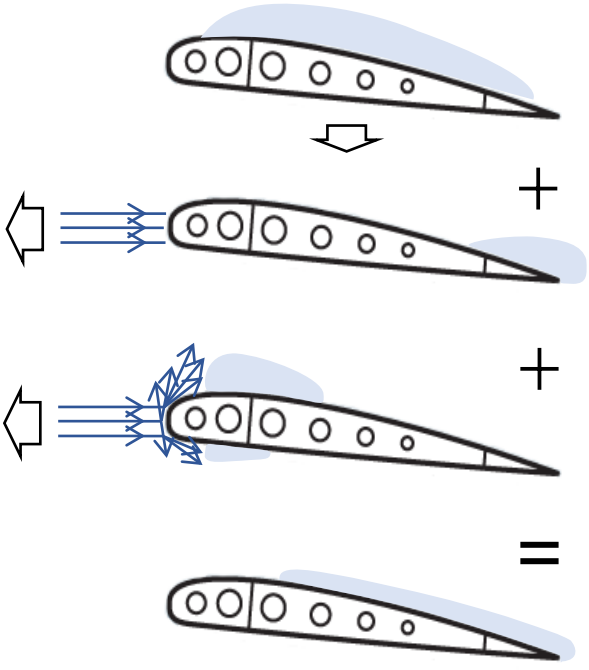
Elements and grounds

To answer this question, consider a 20-inch square plate with a uniform density that is falling from a height of 1000 feet parallel to the ground and at a constant speed (assuming

ideal conditions - This means that the coordinates of this plate relative to the earth are constant and are always parallel to the ground until the moment it hits to the earth). Due to the gravity of the earth, the force exerted on the plate at any moment simultaneously both displaces the air at the bottom of the plate (facing the earth) and creates an empty space (vacuum) on the surface of the opposite side (facing the sky). However, the vacuum created is not stable and due to the fluidity of the air, at any moment, the air around the plate moves rapidly from the edges of the plate to the center of mass of the plate. The air velocity will increase as it moves from the edges of the plate toward the center of mass of the plate, because the center of mass is the last point where the vacuum created is replaced by air, so this cycle will repeat at any moment until it hits the ground. By ignoring the issue of air resistance, the environmental parameters are constant at any moment and only the air velocity on the upper surface of the plate varies. Therefore, according to Bernoulli's equation, the pressure at the top of the plate will be less than the pressure at the bottom.



As a result, the important point to keep in mind is that the plane must also be considered as a constantly falling object. So, to answer the question, "What keeps the plane in the air?" In one sentence or one word, gravity can be expressed as a key point. But that's not the whole story. The plane, as a constantly falling object, is a fact that cannot be denied, but the lift for this object is due to other factors as well. The thrust causes an action and reaction under the wing that makes the arguments for high pressure under the wing (according to Newton's third law) quite logical and indisputable. However, the size of this force is not large enough to overcome the weight, so another force acts, which is the same low pressure created on the top of the wing that complements this force. But in any case, the question "what causes the low pressure above the wing of the aircraft?" still remains. The thrust, in addition to the above, creates air resistance (drag) at the front edge of the wing (leading edge) and at the same time the vacuum area exactly at the rear edge of the wing (trailing edge) of the aircraft. The hitting air to the front edge, is deflected angularly up and down the wing (usually upwards - due to the shape of the airfoil). This air deflection in this area only creates more air pressure and consequently less air velocity in this area, which in turn leads to the strengthening of the



vacuum created by gravity, which in combination with the vacuum area of the rear edge of the wing, The total area creates a vacuum from about the middle of the wing to the end. However, the oncoming air in the upper area of the wing is still in its normal state, but the vacuum zone created on the wing, causes the rapid movement of air (the air above the wing and the low-velocity air in front of the wing) toward the rear edge of the wing, and thus creating a low pressure area above the wing.

Conclusion

The fact of the unpredictable behavior of the air as a non-ideal fluid in the occurrence of an abnormal airflow on the wing cannot be the reason for the violation of the proposed explanations, nor can the explanations provided be the reason for the violation of the performance of the airfoil. Because this article just doesn't consider airfoil as the only reason for the aircraft to stay in the sky, but also sees it as part of the factors involved in this process, which in cooperation with other factors, helps them to be more efficient. So, this is the answer to the question of why an airplane can fly in the absence of airfoil (especially in reverse flight).