

Nov. 14, 1896

A. A. Merrill, Esq.

My dear Sir.

I have your letter of 10 Inst. and I find, as you surmised, that we do not agree in our definitions of terms. I have been accustomed to think of them as follows:

1. "Normal pressure" at right angles to the surface if a plane, and at right angles to the tangent to the curve at the point of application. You consider it as right angles to the chord in the latter case.

2. "Drift". Always parallel to the horizon. You consider it as parallel to the direction of the air current. In point of fact the normal pressure can be resolved, i.e.: its effects ascertained, in any desired direction, but the horizontal is what I have considered as the important one, because it is at right angles to.

3. The "lift". Always vertical, and opposing gravity. You consider it as at right angles to the wind.

It seems to me that if resolves in any other direction than the vertical, that component of the normal pressure would not correctly represent the lift. Lilienthal has selected a point in the chord for his measurements, and has reached the conclusion that the pressure is not normal thereto. This does not, in my judgment, determine that the pressure is not normal to the tangent of the curve at centre of pressure.

The question is a fundamental one, and you may be right. Please advise me where you got your own conception and your arguments therefor. Please say also whether you have a copy of the "Taschenbuch für Flugtechniker und Luftschiffer" published by Kühl (Moedebeck's).

Yours Truly

O. Chanute

I may add that Goupil has questioned whether the pressure is normal to the surface from dynamical considerations, but he is the only whom I know to have doubted it.