level flight. In the case of the Triplane it is no good using only "aileron" to pick up a wing and neither is it any use kicking on rudder as this just yaws the nose up above the horizon with a loss of airspeed. In contrast if the Boxkite drops a wing it is best to hold the rudder still and pick up the wing with aileron, accepting the inevitable heading change. In these early machines the pilot is much more of a passenger, accepting the fact that the machine takes him where it wants to go, and agrees only reluctantly to respond to the pilot's increasingly desperate demands. The most important instrument on the Boxkite is nine inches of waxed string tied to a crosswire under the foreplane; when it streams straight back all systems are "go", but if it gets 10° out of line, beware! There is also good reason for placing a great deal of credence on the old aviators' stories like "there isn't much lift in the air today."

Instructors at the Central Flying School not so many years ago discussed the old chestnut: "If you turn downwind, do you lose airspeed?" "Impossible," said the theorists, brushing aside the assertions of the early aviators; "the aeroplane operates within a moving mass of air and doesn't respond in the manner suggested." Shuttleworth pilots on the other hand will be adamant that speed is indeed lost when turning downwind, as is dramatically demonstrated with the veteran aeroplanes, and these reports are now backed by the latest theory from a well known aerodynamicist.

The business of being "forced down" has puzzled many modern aviators, but the culprit is rapid and relatively large changes in induced and profile drag caused by turbulence and also the extra trim drag during attempted corrections. Hence the expression "no lift in the air today."

The problems of flying these ancient machines are matched only by the difficulties in persuading a rotary engine to keep running. For example, the engine controls in the Sopwith Pup would defeat any modern pilot. There is no fuel cock visible, and the throttle quadrant is graced by two levers of which the larger controls the air passing through the choke while the smaller meters the fuel via a needle valve. They are known as the "air lever" and "fine adjustment" respectively. Originally the air levers were used mostly as a throttle, but this was not very efficient, and one really has to balance the mixture continuously as engine conditions change. A large hand-