



Figure 3-7. Wingtip reference for straight-and-level flight.

It is possible to maintain straight flight by simply exerting the necessary pressure with the ailerons or rudder independently in the desired direction of correction. However, the practice of using the ailerons and rudder independently is not correct and makes precise control of the airplane difficult. The correct bank flight control movement requires the coordinated use of ailerons and rudder. Straight-and-level flight requires almost no application of flight control pressures if the airplane is properly trimmed and the air is smooth. For that reason, the pilot must not form the habit of unnecessarily moving the flight controls. The pilot must learn to recognize when corrections are necessary and then to make a measured flight control response precisely, smoothly, and accurately.

Pilots may tend to look out to one side continually, generally to the left due to the pilot's left seat position and consequently focus attention in that direction. This not only gives a restricted angle from which the pilot is to observe but also causes the pilot to exert unconscious pressure on the flight controls in that direction. It is also important that the pilot not fixate in any one direction and continually scan outside the airplane, not only to ensure that the airplane's attitude is correct, but also to ensure that the pilot is considering other factors for safe flight. Continually observing both wingtips has advantages other than being the only positive check for leveling the wings. This includes looking for aircraft traffic, terrain and weather influences, and maintaining overall situational awareness.

### Level Flight

In learning to control the airplane in level flight, it is important that the pilot be taught to maintain a light touch on the flight controls using fingers rather than the common problem of a tight-fisted palm wrapped around the flight controls. The pilot should exert only enough pressure on the flight controls to produce the desired result. The pilot should learn to associate the apparent movement of the references with the control pressures which produce attitude movement. As a result, the pilot can develop the ability to adjust the change desired in the airplane's attitude by the amount and direction of pressures applied to the flight controls without the pilot excessively referring to instrument or outside references for each minor correction.

The pitch attitude for level flight is first obtained by the pilot being properly seated, selecting a point toward the airplane's nose as a reference, and then keeping that reference point in a fixed position relative to the natural horizon. [Figure 3-8] The principles of attitude flying require that the reference point to the natural horizon position should be cross-checked against the flight instruments to determine if the pitch attitude is correct. If not, such as trending away from the desired altitude, the pitch attitude should be readjusted in relation to the natural horizon and then the flight instruments cross-checked to determine if altitude is now being corrected or maintained. In level flight maneuvers, the terms "increase