Pitch and power corrections must be promptly and closely coordinated. For example, if the vertical speed is correct, but the airspeed is low, add power. As the power is increased, the miniature aircraft must be lowered slightly to maintain constant vertical speed. If the vertical speed is high and the airspeed is low, lower the miniature aircraft slightly and note the increase in airspeed to determine whether or not a power change is also necessary. *[Figure 7-28]* Familiarity with the approximate power settings helps to keep pitch and power corrections at a minimum.

Leveling Off

To level off from a climb and maintain an altitude, it is necessary to start the level off before reaching the desired altitude. The amount of lead varies with rate of climb and pilot technique. If the airplane is climbing at 1,000 fpm, it continues to climb at a decreasing rate throughout the transition to level flight. An effective practice is to lead the altitude by 10 percent of the vertical speed shown (500 fpm/ 50-foot lead, 1,000 fpm/100-foot lead).

To level off at cruising airspeed, apply smooth, steady forward-elevator pressure toward level flight attitude for the speed desired. As the attitude indicator shows the pitch change, the vertical speed needle moves slowly toward zero, the altimeter needle moves more slowly, and the airspeed shows acceleration. *[Figure 7-29]* When the altimeter, attitude indicator, and VSI show level flight, constant changes in pitch and torque control have to be made as the airspeed increases. As the airspeed approaches cruising speed, reduce power to the cruise setting. The amount of lead depends upon the rate of acceleration of the airplane.

To level off at climbing airspeed, lower the nose to the pitch attitude appropriate to that airspeed in level flight. Power is simultaneously reduced to the setting for that airspeed as the pitch attitude is lowered. If power reduction is at a rate proportionate to the pitch change, airspeed will remain constant.

Descents

A descent can be made at a variety of airspeeds and attitudes by reducing power, adding drag, and lowering the nose to a predetermined attitude. The airspeed eventually stabilizes at a constant value. Meanwhile, the only flight instrument providing a positive attitude reference is the attitude indicator. Without the attitude indicator (such as during a partial panel descent), the ASI, altimeter, and VSI show varying rates of change until the airplane decelerates to a constant airspeed at a constant attitude. During the transition, changes in control pressure and trim, as well as cross-check and interpretation, must be accurate to maintain positive control.

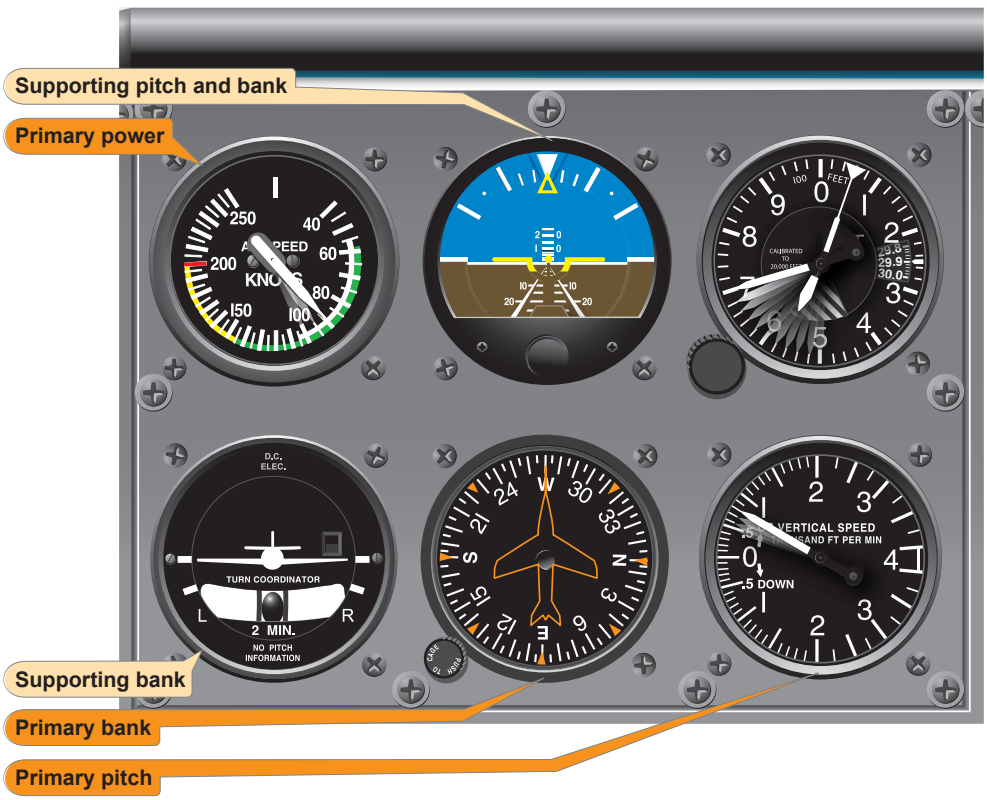

Figure 7-28. *Airspeed low and vertical speed high—reduce pitch.*