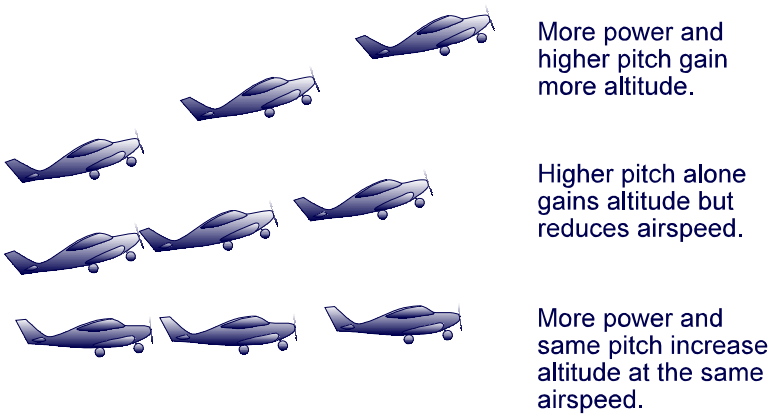

Figure 6-A: Climbing Dynamics

Climbing

Climbing is a basic flight maneuver that increases altitude. Not only is it the first maneuver executed after take off, it continues as aircraft leave the airport's airspaces and until they attain cruise altitude. Aircraft sometimes climb during enroute flights to go over mountains and above clouds and turbulence. Climbs are accomplished with increases of pitch, power, or both.

Pitch. Upward pitch seems obvious because up is where the aircraft needs to go. It is the only way to climb when power is already at its maximum level. Airspeed will reduce if power is already at maximum, however, just as an automobile going uphill will lose speed if power isn't increased.

Maximum power doesn't always mean the throttle is fully advanced. It means the engine is producing the maximum safe amount of power. That's the red line on the RPM gauge for aircraft with fixed-pitch propellers or the manifold pressure gauge for aircraft with variable-pitch propellers.

Although increasing pitch is the most obvious for ascending, it isn't always the best. If pitch is too high, airspeed could reduce too much, and a stall could result. Remember that a stall results from too much pitch for the airspeed or too little airspeed for the pitch, depending on the circumstances.

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