

## Season 7

### Cloud Chasing in any Airplane

Cloud chasing, or flying around, under, circling, weaving between, or flying through tunnels in the clouds, is really fun and games. Done with an IFR (instrument flight rules) clearance and a block altitude provides you the needed space to play. Done under VFR (visual flight rules), cloud chasing falls under stupid stuff.

I have cloud chased in a number of airplanes, but the faster the airplane, the more fun it is. From the ground a broken cloud deck (50% or greater coverage) may appear to be a lot of little clouds, but in fact, the clouds can be fairly large. Stratus or layered clouds can restrict you to a single plane of flight, but towering cumulus clouds lets you play in three dimensions. In slower aircraft, the rate of movement past the clouds seems lethargic. In faster airplanes, the relative movements are significantly increased.

When flying around the clouds, both the clouds and airplane are in the same air mass. Wind speed has no effect on relative movements. All wind does is drift your play area. You can not get distracted and get out of your airspace.

The beauty of clouds is, if the pilot makes a mistake in judgment of speed or rate of turn, he hits the clouds, not the ground. The greater the cloud coverage, the more rapid your decision making process must be. Keeping in mind, anywhere during any maneuver, unknown cloud formations could pop into view and you may have to make an instantaneous directional change. The time allowed to decide on your next maneuver can be measured in very small fractions of a second. There is almost always a clear place to go, but you have to find it in time to use it.

Even though cloud chasing is fun, it is also a great training device. It lets a pilot really see, plan and visualize the maneuvers he has been practicing. He learns, at any time in one maneuver, how to transition into something else.

I would have loved to have every student get to do this once during his training program, but it simply was not possible. Times available and airspace needs simply made it prohibitive to plan. Everything needed to let it happen only came together once every few years.

**Epilog:** There is always a rainbow around an airplanes sun shadow on a cloud. This is known as "the pilot's wedding band".

### Contrails and High Altitude

One day, later in my T-33 basic training and on a solo flight, I did area practice to burn fuel out of my drop tanks and decided it was time to make that contrail I saw way back in season 1. The sky was clear, but there was some light high level moisture that should make a contrail a probability, so I started my climb schedule to high altitude.

The tips empty T-33 climbed pretty well up to around 30,000' and the climbing vertical velocity began to drop faster than usual. I continued my climb and did an occasional shallow turn, but I did not see any contrail. Eventually my climb became a quest to see how high I could climb. By 45,000' the old bird was struggling but still climbing a few hundred feet per minute. I was also getting into the oxygen system pressure breathing realm.

I continued to climb until the vertical velocity stabilized at about 200 FPM (feet per minute). By this time, the mission period was ending and I only had about 0:20 minutes until landing time.

Then I wondered if I was making a con that someone would see and ask about. I started to make a turn to check for a con, and the bird shuddered as if in a stall. My indicated airspeed was pretty low.

I rolled out and pulled the throttle back to start my descent. The throttle came back, but the RPM barely moved. Oh yes, the fuel control adjusts for altitude. So I lowered the nose and got transonic Mach buzz (That speed where airflow somewhere on the aircraft was supersonic. Usually the thickest part of the wing). I had flown myself into a corner. Slow down and stall. Speed up and get transonic aileron buzz. Solution – extend the speed brake and come down on drag.

At first I could only get up to about 500 FPM before I got Mach buzz, so I had to adjust to stay in a pretty narrow flight envelope. By 45,000' or flight level 4-5-0 (AKA: Angels 4-5-0), I was up to 1,000 FPM and increasing rapidly. I simply left the power at idle and let the RPM drop as altitude decreased. I was smoking below 30,000', but I made my scheduled landing time. I had my first introduction to high altitude and high Mach flight characteristics. Taught in aerodynamics class – YES; fully understood before now – NOT HARDLY!