

Combat Views for Vertical Maneuvers

"...I really like the pivot turn you taught me. I've been working on it, but have yet to master it."-- RAF_Redrum
"...someone named 'Poacher' complimented me on my fighting style saying I was "as smooth as Pepe IMHO". I had a good chuckle, you have made yourself known as a dangerous and competent fighter-pilot sir." - PJ666_SpitzFire
"Thanks for the training session, it was very enlightening and easily worth the humiliation. It is good of you to take the time to pass on your skills.... The Snipe in your hands was a thing of beauty to watch doing those dives and turns..."*AA*Double_Tap
"You are an excellent teacher." *AA*Double_Tap
"...myself , WWDragonrider , WWHappy , WW_Wringer all watch Pepe have NO damage, get up to 6 kills in a flight .. 18 kills , 0 deaths in a D7 .. " WW_Flybert
"If you are suffering from the effects of "Tactical Ignorance" get in touch with Dr. LePeu and those amazing people at skunkworks. ...in a few short sessions (at the rate of only \$10 per visit) you will see immediate results. " RAF_Tiger
"Crapshoot and I had a great training session last night with RAF Pepe LePeu. I have sent copies of everything to everyone on my mailing list.... Pepe is a very nice guy and is willing to help the CSq..." CSq_JOE_XO
"Pepe first lesson on energy works. Just ask Pche who score some kills in last nites PJs. And on some good pilots by using it. Every Pilot that doesnt know or has seen Pepe first lesson. Please have Joe, Pche or myself to show you." - CSq_CrapsShoot7
"You have an incredibly astute comprehension of tactics." - RAF_Lutzman



The most successful and deadly pilots in Red Baron are masters of energy fighting and vertical maneuvers. They are able to convert airspeed from a dive or even from level flight into a quick zoom climb that puts them above their opponents. They are then able to use gravity to assist them at making extremely tight turns that bring them right back down on the enemy below.

The problem with vertical maneuvers for many pilots is the fact that they can be very disorienting. Consider the F5 external view shown above. There are no references by which the pilot may check his orientation. Is he facing straight up? Is he inverted? Is he simply at a steep climb angle? Are his wings level? Without an external point of reference it is impossible to tell.

For a pilot to become proficient at using vertical maneuvers, it is necessary to either learn to fly by gauges (using airspeed, altimeter, bank indicator and AOA indicator to track the attitude of the aircraft) or it is necessary to come up with some sort of external point of reference. Fortunately Red Baron has some very useful views that can provide this external reference. Once you learn to use these views, you will be able to perform vertical maneuvers above an enemy and always remain oriented to the threat axis and the axis of motion for your own aircraft. With practice you will be able to zoom into the vertical and pirouette to avoid popup shots from below, while at the same time positioning yourself to attack the enemy as he stalls at the top of his zoom.

The following is a series of screenshots I have assembled to illustrate both the views that I use, and also to illustrate a vertical maneuver called a wingover. In this maneuver the pilot pulls up steeply, soars skyward and then as he reaches the point of stalling he guides his aircraft through a half-cartwheel to face back in the direction from which he came. It is a very energy efficient maneuver as it converts a great deal of speed into altitude, and it also provides a very tight "pivot" turn at the top of the zoom - very helpful for changing direction in a dogfight.



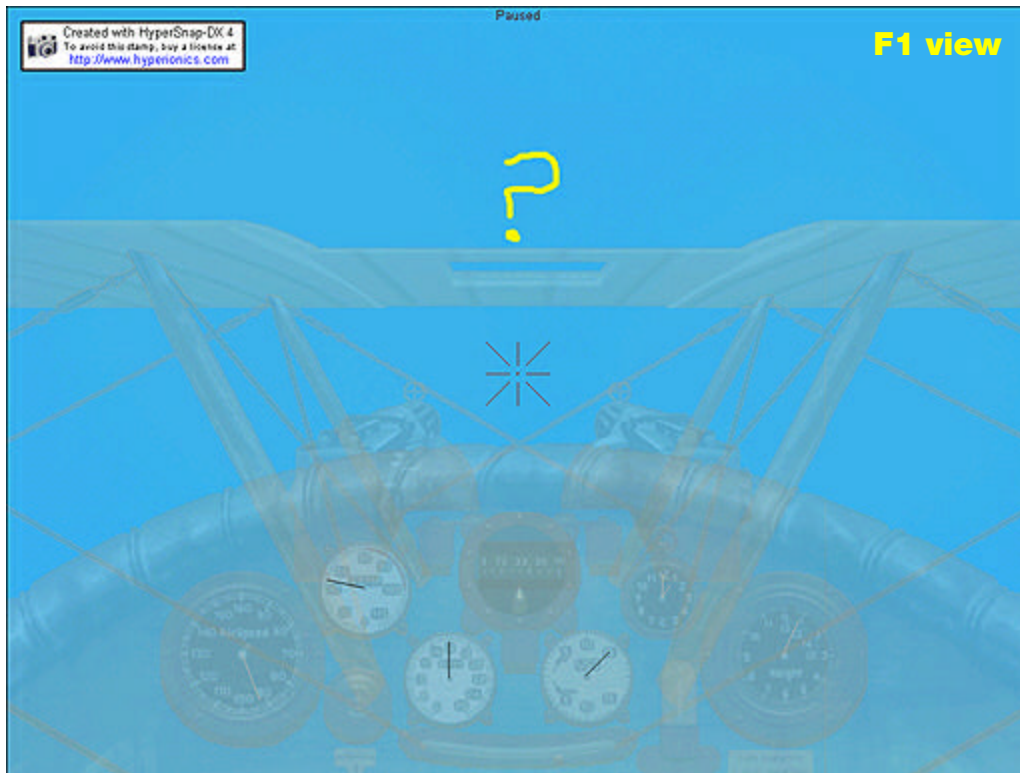
In the first shot (above) I am in F5 external view and have centered a village in the center of my screen as my target using the L key. If this was an enemy aircraft I would use E then Shift + D to locate and lock it for easy recall later. I am flying in F5 view so I can determine the target's location in relation to my aircraft and swing the nose around to point at it.



Having determined the general direction of the target in F5 view, I swing the nose of my aircraft around to point at it (above).



Once I am generally oriented with the target, I press F1 to go to an internal gunsite view (this view shows me using transparent cockpit.) If I have done my job properly, the target will be in my field of vision already and only a small correction will be required to line it up in my crosshairs and shoot (above).



Now comes the tricky part. My speed carries me past the intended target after my shot. With my landmark gone from view, if I pull up all I will see is blue sky. I will become disoriented (above).



Instead, as I overfly the target I press F3 which shows me the target in the center of the screen and my aircraft in the foreground. This is perfect because it allows me to see where the target is and make my next maneuver in relation to that target. Note my wings are banked slightly to my right in preparation for my wingover. When I pull into my zoom the bank angle will become a yaw to the right.



With my target now in F3 view, I start a moderate pull back on the stick until I am soaring upward. With the target still in view below I have a very clear picture of where my aircraft is in relation to the target, and what the attitude of my aircraft is. The downside is that I have to fly with reversed control inputs - if I want to move towards the right side on the screen I have to give it some left stick. It takes practice but persevere - it will be worth it. Notice that I am climbing steeply but still a few degrees off of vertical (as indicated by the yellow lines). This yaw angle is important for setting up my wingover at the top of the zoom.



At the top of my zoom my aircraft starts to get slow and the controls get unresponsive. I am nearing a stall but because I started with a bit of a yaw to my right, as I stall, gravity will pull the heavy engine downward to my right while the tail will kick upward. Note that I have used no rudder at all for this maneuver. I have simply let gravity tug at my zoom climb until I just tip over sideways. The two pictures above show my aircraft stalling at the top of the zoom and then tipping over to my right. It goes up, stalls on its side then tips over and falls. I have achieved a near zero radius turn by pivoting the aircraft on its wingtip during a stall.



After the stall brings the aircraft's nose back down, I regain speed and control response. I now start lining up the target again.



And with the target in view I press F1 and go to guns. I see the target straight ahead and need only a small correction to shoot. After the shot I will again press F3 as I overfly the target, and will begin another zooming wingover turn. Lather, rinse, repeat as necessary.



This looks easy when demonstrated but there are many things that can go wrong. For example in the zoom pictured above, I have pulled back too far into an inverted position. This cuts short my zoom climb and forces me to loop over the target. This makes me too close to the target and gives me less space to aim and shoot. Furthermore coming straight down after a loop may cause me to pass beneath the target and either hit the ground (in this exercise) or simply blow my altitude advantage.



Another problem to watch for is if you climb absolutely straight vertical (above). In this case your aircraft will stall tail first out of control, rather than neatly to one side and into a wingover. You can save the maneuver if you catch this error early enough by using the rudder to yaw the nose to one side and prevent

the tail first stall, however your aircraft will oscillate or "waggle" back and forth when you release the rudder, and this will spoil your aim on the way down. If you consistently stall tail first or need to make big rudder corrections then you are probably leveling your wings before you zoom. Try banking your wings very slightly after you pass the target so that when you pull up the bank angle will translate into a slight yaw in the zoom. Too much bank angle however will make your zoom very shallow and make you so close to the target you have no room to shoot.

Most importantly, if you do a nice wingover but miscalculate your angles and come down pointed away from the target, do NOT attempt a big correction to line up the target. All that will happen is you will burn your energy for a lousy shot. Instead of making this type of last second high speed correction, just abandon the shot and pull into another perfect zoom. As long as you save your energy you can keep zooming above the opponent and shoot every other shot, every third shot or you can keep zooming until he messes up and stall out below you, giving you the ONE shot that kills him or disables him. Be patient, save the energy, keep zooming and eventually he will do something dumb and you will come down on him like a ton of bricks. However if you try for every shot and chase him to take even poor shots, your energy will bleed away and you will find you have given away your advantage for a few lousy snap shots that have done no damage to your opponent.

The exercise shown on these pages is something you can practice using any landmark (L key) or ground object (O key) as a target. You can even work with a partner and have them park on the runway while you practice zooms and gunnery on them. Often a partner can help you correct your flying better than you yourself can.

Be aware that a big energy efficient zoom has its place in combat but can also work against you in two different ways. Firstly, holding a zoom right up to the point of a stall makes you a nice slow moving target for an enemy's popup shot. If an enemy gets in position to shoot during your zoom, shorten the zoom and save enough speed at the top to roll out or break turn when the shot comes. The second problem is that a big zoom takes time and this is time your enemy can use to recover energy, extend, climb, dive out or turn to face you. If you find you are staying above the enemy but still getting no decent shots on him then you may be giving him too much time between your attacks. Try a shallower zoom with a faster reversal at the top in order to press your attacks more frequently. Remember these faster shallower attacks cost you more energy so be sure not to force bad attacks. If he has energy to evade your first and second quick attacks then he may be vulnerable to your third and fourth ones. Plan several moves ahead and remember that a pass that threatens your enemy into a defensive maneuver may result in no shot for you but may also slow him enough that he can't avoid your next one. If you conserve your energy there can always be another attack whenever you choose.

These are the views I use for combat because I find they work for me. Try them and see if they work for you. Based on my experience teaching many pilots, good dogfighting and energy management requires good views. Practice with these ones for a while both in ground exercises and against airborne opponents.

Salute!

RAF_Pepe LePeu