A Proposed Plan for Ftr. vs. Ftr. Training

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The demand for a previous issue of our Fighter Weapons News Letter which was devoted entirely to the subject of Fighter versus Fighter Tactics confirmed a belief long held that too many fighter units today did not have organized plans or programs for properly educating their pilots in "positioning" their aircraft. Although today the actual delivery techniques of fighter weapons, guns-bombs-rockets, are well documented and fairly well standardized, the vital phase of placing the aircraft in the best position to deal its blow against another fighter is still quite hit and miss.

Unfortunately, once removed from actual combat, the fighter pilot has few means of actually scoring his "stick and rudder" ability against another fighter. Many "tactics" and "gimmicks" tried stateside would result in unfortunate consequences if attempted against a "hot guns" enemy. Some squadrons have good camera programs for their fighter versus fighter training; others log a lot of time with unreal or unsupervised hassles that can teach bad habits and poor combat techniques .

In an attempt to offer a logical progression of training missions for a fighter versus fighter program, the following outline is presented. Perforce it is brief, but coupled with your own combat experience, study of the already distributed Fighter Tactics Newsletter, and of Nellis TPO #160 (available on request from Nellis Training Group TA&D Section) and with a common sense evaluation of the next enemies' capabilities, you can do much to prepare your fighter pilots and improve your own ability. Above all, keep it serious and let your pride be built up by your gunnery scores while you devote every effort toward "upgrading" your wingman. Too many simulated fights today degenerate into private wars between the leaders, while the young'uns are flung out on their own.

I. Ground School -

This should include about six hours covering all aspects of FvF as laid out in the Tactics Newsletter and Nellis AFB TP #160, and in accordance with your local operating procedures. You may break down the lectures in the following manner:

1. General Information - Tactics information from WW 1 up to the present time. In general a brief history and the vital need for FvF training.

2. How to fight 1 vs 1 in both offensive and defensive situations. Use the case system of instruction by' setting up many possible examples of fighting situations.

3. How to fly Fluid Four and Tactical Formation. This should clearly define the responsibilities and position of wingmen in the patrol and fighting position.

4. How to fight 2 vs 2, 4 vs 4, 2 vs 4, 1 vs 2, on offense and defense.

5. How to fight an aircraft with superior maneuvering capabilities. Here the various maneuvers for positioning can be examined in light of the effect upon your opponent and his advantages over you.

Caution - Try not to set up the program as a rainy day affair. Avoid postponements and unnecessary interruptions. Set it up as part of a planned schedule. Delays tend to lessen that interest previously generated, and the pilots will receive less' value from the instruction . Also, when given over a wide period of time or given too far in advance of the flight program, not enough of the ground school briefing is retained for use in the air.

II. Flight Program -

Plan this phase to follow as soon as possible after the ground school portion.

1. Upgrade your best pilots first, such as your flight commanders and your pilots who are currently. most experienced in FvF Tactics.
2. Use these pilots to upgrade the rest of the squadron after they have been checked out and have been thoroughly standardized. It will be impossible for one person to upgrade the whole squadron over a short period of time, if at all within an extended period.
3. Do not start out in FvF, 4 vs 4. This will tend to confuse rather than teach. It will only force an extension of the training period until the pilots learn from trial and error.
4. Set up a flight schedule that will enable you to upgrade your outfit completely in the least possible time. Here is an example of a progressive FvF schedule.
5. Fighter vs Fighter Flying Schedule.
   (1) Elements of 2 (1 vs 1) - 4 missions.
      (a) 1st and 2nd mission - Have student assume in trail position on the instructor and learn how to stay in that position throughout any maneuver.
      (b) 3rd and 4th missions - Student should learn best position for wingmen in patrol and fighting positions. Emphasis should be on keeping position during maximum performance maneuvering.
   (2) 2 vs 2 - 4 missions - 1 instructor, 3 students.
      (a) 2 missions on the offense.
         1. 1 mission as a wingman.
         2. 1 mission as element leader.
      (b) 2 missions on the defense.

1. 1 mission as a wingman.
2. 1 mission as element leader.

(3) 4 vs 4 - 8 missions - 1 instructor, 3 students per flight.

(a) 4 missions on the offense.

1. 2 missions as a wingman.
2. 2 missions in element or flight lead position.

(b) 4 missions on the defense.

1. 2 missions as wingman.
2. 2 missions in element or flight lead position.

While using the above schedule, there will be some variation on whether a student will fly lead slots in the 2 vs 2, and 4 vs 4 missions. This will depend upon whether the individual pilot is checked out as an element or flight leader, degree of experience, etc.

For the schedule above, the pilot starts out with the basic fundamentals of FvF then proceeds toward the more complicated problems of mutual support, i. e ., 4 vs 4. Therefore, you have allowed for gradual progression of the pilot enabling him to master the finer points of FvF after gaining a firm foothold in the basic fundamentals.

III. Basic FvF Maneuvers.

The following maneuvers are basic to FvF training. You will be using these in various combinations throughout your Tactics Program. They are elaborated upon in the references quoted above.

1. How to Perform the Hard Turn or Break.
   a. Estimate range and angle off of the attacking aircraft.
   b. Call a hard turn if your opponent is 2000' or more and 30° or more angle off. (Hard turn is a near maximum performance maneuver with visual control of situation.)
   c. Call a "break" if the aircraft is within 2000' and at a low angle off, less than 30° ("Break," is an emergency maneuver requiring immediate action without regard for visual sighting of opponent.)
   d. Use rudder leading into turn as this will tend to slow you down and also tighten your turn. In other words, you will hasten a speed differential and thus force your opponent to the outside, gaining lateral separation.
   e. If your opponent is within break range but with excessive closing speed, it might not be necessary to use a maximum performance turn to force him to the outside. Remember, when on the defensive, your first concern is to gain lateral separation. However, try and save part of your airspeed for future maneuvering.

2. How to use the "Scissors" Maneuver.
   a. Reverse and pull your nose up and into your opponent when he slides to the

outside on your hard turn or break. Repeat this reversal each time your opponent slides through your flight path to the outside.

b. Use rudders to obtain maximum performance on reversing each turn of the scissors.

c. Use all power available to reduce your stall speed to its lowest.

d. Keep speed brakes in so as to gain and hold a high position . You can use them If you are sliding to your opponent's 6 o'clock position and want to drop down without over-running.

e. Use flaps at most desirable lift position to help reduce stall speed, and elevate the nose of your air craft.

(1) This can be an insidious move if used at the proper time.

(2) Be sure and know your allowable airspeed for various flap positions.

f. If your opponent ends up on top during the scissors, try to place yourself in phase with and directly underneath him before he starts sliding to your 6 o'clock position.

(1) This will tend to give your opponent a visual disadvantage with the subsequent possibility of his over-controlling and stalling, or mis-maneuvering in attempting to find you.

(2) A stall would tend to force him to settle and slide forward.

Remember - The airspeed up to the point of stall is less than after the stall occurs (if the aircraft is not in an excessive nose high altitude), so use smooth trim and rudder technique to get the most out of the aircraft at slow airspeed.

g. If you should get your opponent in a vertical scissors by forcing him to the outside in a descending break, reduce your power, extend your brakes and drop your flaps (if slow enough) to try and force your opponent below and in front of you.

h. The decision on when to scissor an opponent will depend upon how rapidly he is sliding to the outside of the turn and how far behind he is as he slides through your flight path. Keep your opponent in sight as much as possible - a reverse too early will be to his advantage.

3. How to Perform the High Speed "Yo-Yo".

(Assume you are closing rapidly on an opponent)

a. Slide high and to the rear of your opponent when you are no longer able to stay in his turn radius. Trade your air speed for altitude and therefore diminish your turn radius. Maintain your advantage by going high at 6 o'clock. Avoid waiting until the last possible moment to Yo-Yo off an opponent. He may pull or break up into you and force you on the defensive.

b. Try to slide back down to your opponent's 6 o'clock position. Use speed brakes

and power reduction as necessary to help prevent over shooting.

c. If you should slide down at too great an angle off, your opponent may pull up into you thus forcing you below and in front.

d. In this case roll one-quarter away from your opponent and pull up with him the moment he has committed himself (to keep him in sight and get on top).

e. Otherwise spiral or dive away to open up the distance as most likely the angle off will be too great and your opponent will end up on top.

4. How to use the Low Speed or Inside Yo-Yo.

(Assume you have placed yourself at the 6 o'clock low position on your opponent and are unable to pull lead at a low air speed.)

a. Slide to the inside by dropping your nose. Try not to burble the aircraft. This will allow you to close on him by increasing your airspeed and cutting to the inside.

b. Shallow out your turn and slide up to the 6 o'clock position when you reach about 45° - 35° from line abreast. This will position you somewhat closer to your opponent and reduce your lead requirement. You may have to repeat this a few times to position yourself correctly. Remember: Your opponent can cancel you out by doing likewise or by making a hard break into you on your upswing toward his 6 o'clock position.

5. How to Perform the Diving Spiral.

a. Lower your nose and start a descending turn. Pull as many "G's" as the situation warrants. This is to prevent your opponent from tracking you.

b. Avoid an excessively nose low altitude, as this will make you easier to track. However, dive steep enough to maintain the airspeed necessary to pull maximum "G's".

6. How to Perform the Spiral for Airspeed.

(Assume an opponent Yo-Yo's or slides to the outside, but not far enough forward for you to reverse into him.)

a. Wait until your opponent has about reached the apex of his Yo-Yo or has slid well to the outside.

b. Reduce some of your "G's" and spiral down 180° away from your opponent. Relax more and more "G's" as the distance opens up and your opponent' is out of effective range (about 4000'). Only reduce enough "G's" initially to accelerate away from your opponent and at the same time keep part of your lateral separation.

7. How to Perform the High "G" Barrel Roll.

a. Initiate a hard turn or break to get lateral separation, or use the diving spiral and reduce power to obtain lateral separation.

b. Reverse and barrel roll in the opposite direction without releasing your "G's".

Come in with top rudder when coming down the opposite side of roll to prevent dish out and also to flatten out your roll.

c. Fly the aircraft on the "burble" all the way around the roll. This will slow you down, tighten your roll and tend to force your opponent to overshoot.

d. Look for your opponent high and from the direction of the roll. He will normally slide below and forward from that position if he overshoots. Caution: Try to keep opponent in sight at all times as he may pull high out of the roll and wait for you to complete it before coming in again.

8. How to Perform the Hammer Turn.

(Assume you are at a slow airspeed, nose high altitude with an opponent out of phase or at a distance behind - around 4000')

a. Rudder the aircraft around the top, stick to the rear. Pull your nose through the horizon toward and approximately in line with your opponent's nose.

b. See if your opponent tries to cut you off or fly the same relative flight path you described. If he cuts you off, your chances on getting him out of phase are much better, therefore -

c. Roll into your opponent to increase his angle off and initiate a sharp pull up out of your descent to force your opponent below and possibly in front.

d. If you retard your throttle and drop a few degrees of flaps (at low A/S) you will flatten out your descent and thus greatly insure the possibility of your opponent's overshoot.

e. When flying through all these maneuvers, use good rudder technique along with proper trim. This will insure your getting the most out of the aircraft when it is necessary. Also, learn how to use speed brakes and power reduction when most advantageous to gain your desired position.

We've been talking with you folks about the F-86H and F-84 for two solid years now, and though many outfits (including us) still have these aircraft as primary tactical types, many other outfits (also including us) are up to their elbows in the F-100 and F-86H. We've had lots of letters requesting fighter weapons delivery details and techniques with these new aircraft, and asking for such info to be published in the News Letter. Unfortunately, we've been unable to get security clearance to unclassify this data, and perforce have had to send out the data to using organizations in classified reports. If your outfit has F-100's or F - 86H's, we've sent your commander every report, they're on your base. ASAP, we'll get details to you in the News Letter.

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