FWS
Revamp Works
Welcome to NELLIS AFB
home of the fighter pilot
... STRAP-IN AND GO TO SCHOOL !

HOP 01 - GUNNERY PRACTICE

HOP 01

AIRCRAFT: A-10C
CALL SIGN: HAMMER
TERRAIN: RANGE

This is what it is all about. Get this one right and you are ready to go fight.

Taxi out of parking to the right then turn left and left again to taxi east for take off. Be sure to close your canopy before taking the runway.

Your course will intercept Zebra tanker at 9000 feet. Join on the wing. Move into position slowly. Stay in position and go to the Range.

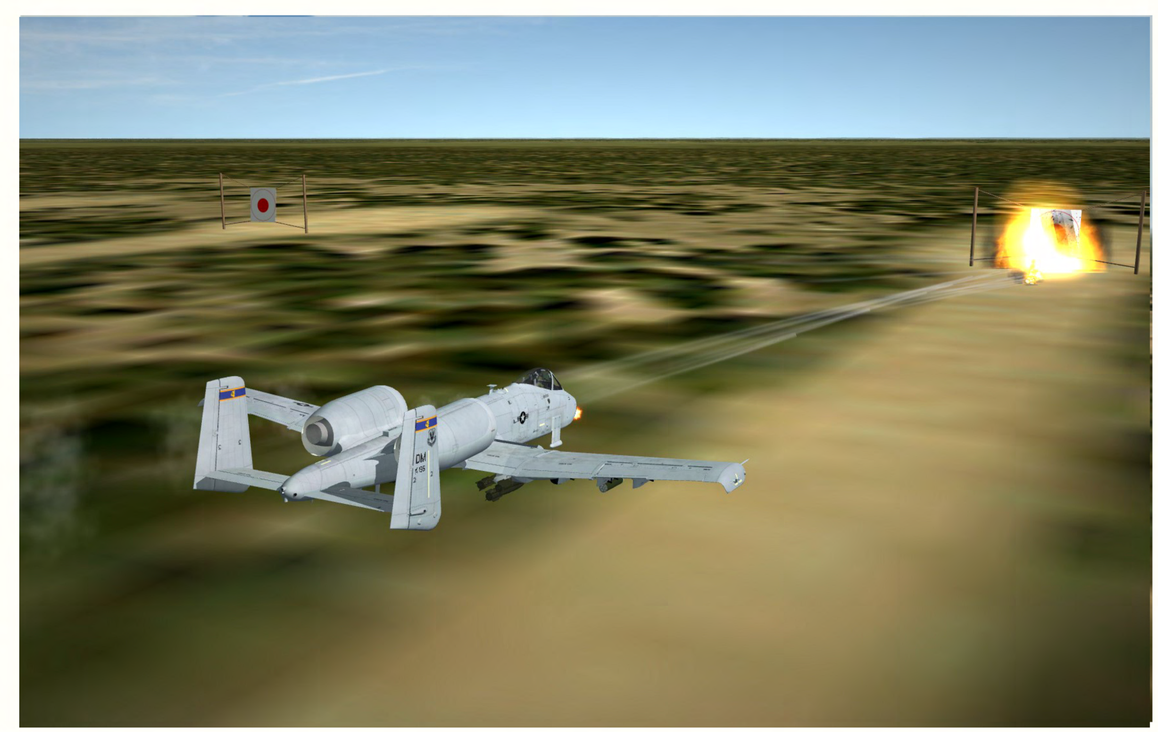
While there, keep your speed and altitude UP!

Acquaint yourself with the FLIR screen.

Select rockets and attack the trucks in the dirt revetments. If you have any remaining, attack the SAM site.

Next are your dive bomb targets. Destroy two of these old C-119's. It will take a direct hit. If you get low, you will not make the pull out.

Finally, strafe. Pick out a target. Select the gun. Do not begin firing until you cross the horizontal roadway. When you see hits, pull then, not later.



HOP 02 - HELICOPTER GUNNERY PRACTICE

AIRCRAFT: AH-1Z Cobra Zulu
CALL SIGN: COBRA
TERRAIN: RANGE

ORDNANCE: (2) M-158_M229 Rocket Pods/20MM M61A1 Gun System

You will be flying a Zulu from the helipad to the nearby gunnery range to practice shooting rockets and guns. The Zulu flies very well. Lift off, hover/taxi forward, turn left and depart down the dirt strip.

Check the map (M). Your first target is nearly straight ahead at the Trucks and Airport Targets. Select your rockets and pick one and shoot one rocket at it. Get a feel for the accuracy you can expect at different ranges.

Then go to the strafe targets. Try different speeds and distances.

Acquaint yourself with the gunsights and screens.

When you are out of ordnance, return to the helipad and land at the same spot where you were parked at the beginning of the lesson.

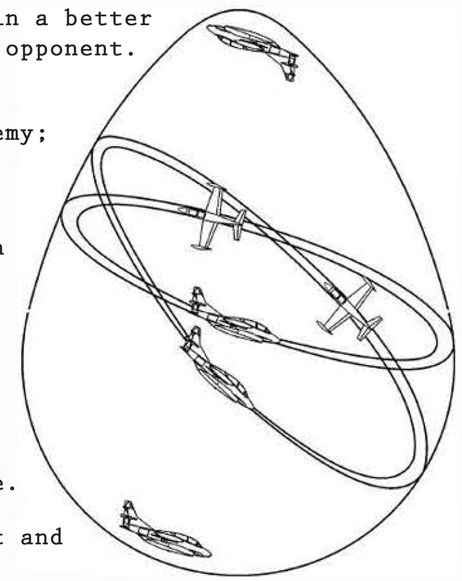
HOP 03 - ACM BASIC MANEUVERS

AIRCRAFT: F-5E
CALL SIGN: LION
TERRAIN: FWS

HOP 03

The purpose of this lesson it to implant maneuvers into your thinking and allow you to practice them in a controlled situation so that you can use them in combat. There are many named maneuvers but we will concentrate on a few basics.

basically, maneuvers are used to gain a better angular position in relation to the opponent.



They can be offensive, to help an attacker gain an advantage on an enemy; or defensive, to help the defender evade an attacker's weapons.

They can also be neutral, where both opponents strive for an offensive position or disengagement maneuvers, to help an escape.

Basic fighter maneuvers consist of many varying tactical turns, rolls, and other actions to get behind or above an enemy. The key is: practice.

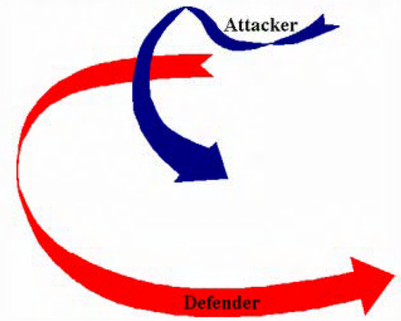
First, know your enemy, his aircraft and weapons capabilities.

Second, see your enemy. Use the 'T' key to locate and then toggle your view onto (and off) the opposing fighter. Know where you are also. Look around. Practice switching your views rapidly. Your brain can take in information as fast as your eyes can feed it. Glance. Don't gaze.

Third, know your weapons parameters. Launching a Sparrow too close is just as wasteful as firing a Sidewinder under high-G.

In this lesson, the opponent is flying an A-4E. It will attack you with dumb missiles and turn and dive. First, try to escape its attacks and then practice maneuvering for the missile shot.

Start by attaining a high overtake on the turning opponent. If you turn hard, you will decellerate and probably overshoot which would normally generate a reversal on his part and you losing advantage. One method of preventing an over-shoot is the High Yo-yo.



In this left turn decrease your bank and pull up then roll back in. This allows BLUE (you) to travel a greater distance while trading airspeed for altitude. At your slower speed, you turn tighter. Then dive for the shot.

If your overtake is too great, try a Barrel Roll attack. If RED is turning right, you must barrel roll left keeping him in sight and bringing your nose up into his six o'clock. Wait for a good tone then Fox Two*.

At this point you may choose to half roll away and depart.

*Fox 1 is radar, Fox 2 is heat seeker and Fox 3 is guns.

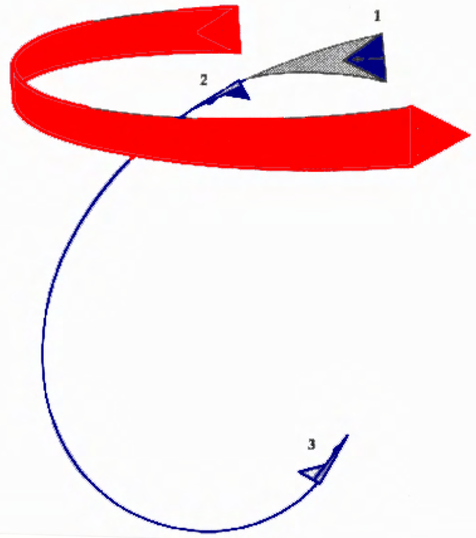
HOP 03 - ACM BASIC MANEUVERS

AIRCRAFT: F-5E
CALL SIGN: LION
TERRAIN: FWS

HOP 03

The Rollaway has the same point as the High Yo-yo, preventing an overshoot. Unlike the Yo-you which puts you inside Red's turn for your vertical maneuvering, the Rollaway puts you on the outside of Red's turn with your nose coming up to his tail. This has the advantage of placing you outside his vision.

Another maneuver to practice is a separation move. This is to give you distance to fire a missile...possibly radar guided. Roll nearly inverted and perform a Split S with this change. Keep the enemy in sight. Your increased speed and distance should keep you safe from a counter attack and get you a couple of miles as you recover and climb into firing position.



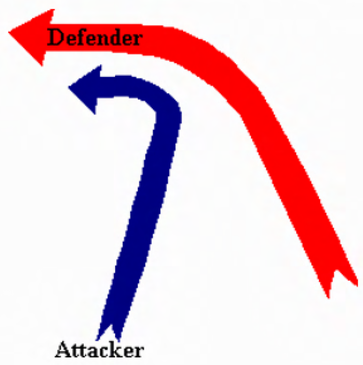
HOP 03 - ACM BASIC MANEUVERS

AIRCRAFT: F-5E
CALL SIGN: LION
TERRAIN: FWS

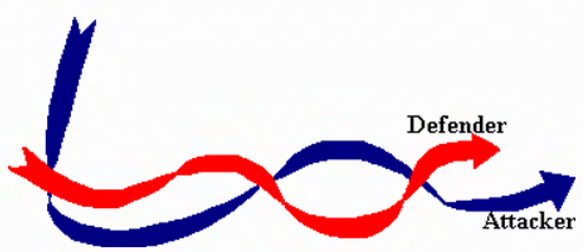
HOP 03

These next are defensive maneuvers and not something you can practice against this opponent but you can practice the motions so they come to you when you need them. You are now RED.

The first maneuver is the simple Break. Turning into the attacker spoils his gun solution and makes his speed work against him.

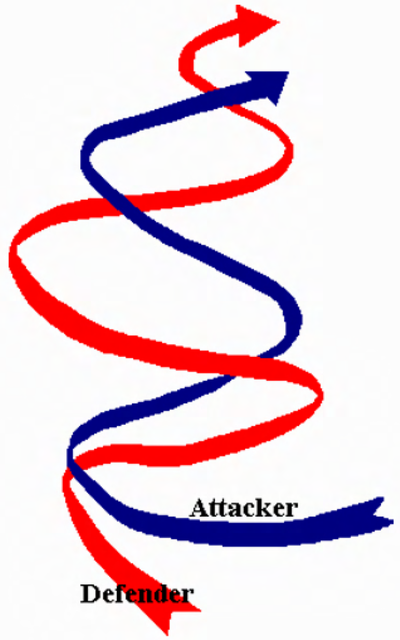


If he is going to overshoot, you will be ready to turn the tables on him as his speed will have been bled off by high AOA and you will be on his tail. But it is not often that simple. Thus, the next maneuver is the Scissors.



The Scissors pits your possibly slower aircraft against an overshooting attacker. You further slow your forward progress while maintaining energy by traveling through a greater distance ...at full power. Keep your eyes on him and know where you are. If the tables turn, it will be quick and you will need all your thinking ability to transition to attack.

The Vertical Rolling Scissors uses gravity to slow both aircraft but can be advantageous to the more powerful aircraft if in skilled hands. Practice climbing and turning smoothly. Find out when you absolutely must nose over. Keep your eyes out of the cockpit.



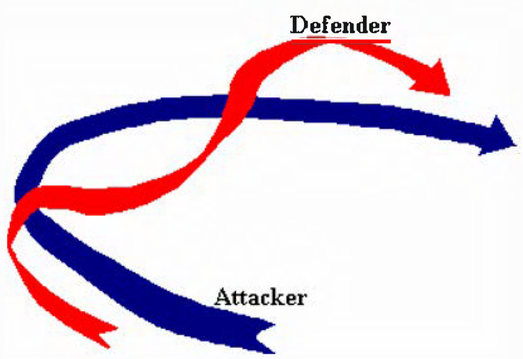
HOP 03 - ACM BASIC MANEUVERS

AIRCRAFT: F-5E
CALL SIGN: LION
TERRAIN: FWS

The final defensive maneuver is poorly understood. In the movies, it always works. In real life, it is a last ditch effort. Imagine your opponent is closing to gun range. You have seconds to live.

Pull the stick back into your lap, make a maximum full rudder, full aileron turn with a high power setting. Yes. High.

You are trying to spoil his aim while maintaining the option to disengage if it works. You will decellerate and will start before he does. Your positions may change places but more likely, it won't be that easy.



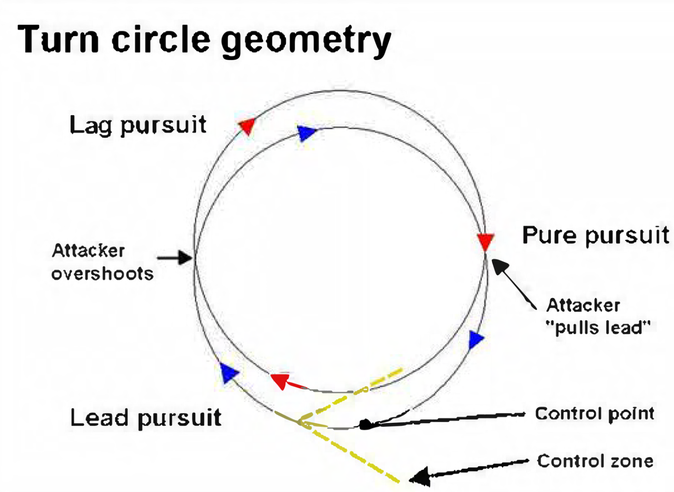
Whatever the outcome, keep your eyes on him if you can. If he becomes a gun target, shoot him. If not, roll inverted, go to full power and dive away to separate.

Know what you are going to do before you start practicing it. Then, practice doing it with your eyes on your opponent. That is the biggest drawback to flight sims...you cannot see what a pilot sees in the way he sees it.

Practice versions of these maneuvers. You will find that what you actually do will be pieces of each depending upon the other aircraft.

You may overtake the right-turning **enemy** with 150 knots greater airspeed, pull up and start a hard right turn when he reverses and you lose sight of him. Roll under to see him then choose from your bag of tricks the next move. Possibly he has extended and all you need to do is a rolling dive into position. You cannot train for that but you can be ready to do what it takes and that comes from practice.

Remember that once you choose to engage, it is him or you. To run out of airspeed, altitude and ideas is certain death.



HOP 04 - ACM 1 vs. 1 TOMCAT

HOP 04

AIRCRAFT: F-14B
CALL SIGN: SHOWTIME
TERRAIN: RANGE

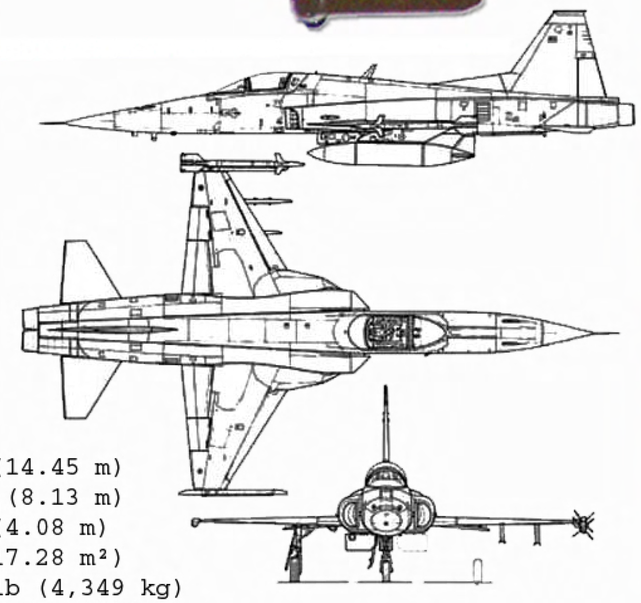
This lesson pits you in a Navy front line fighter against a fast, more-maneuverable opponent. You are to depart and follow the course set in to the north. Hawkeye will call out the bogey before you see him.

You have a gun and rear-aspect IRM's. Practice maneuvering for a Sidewinder kill. He has the same ordnance. You have these radar options: SEARCH,TWS,ACM,TV. Learn to use them.

Think. Don't just yank on the stick. While AI is not that good, the F-5E is. If you took our Flight School, you know aerobatics, slow flight control, spin recovery, inverted flight, how to shoot and how to keep him in sight. You know how to get behind him and stay there or how to shake him and run for it.

You cannot just turn but you can Yo-yo into position. Keep your speed up around 350. When advantageous, yo-yo around, check you are within launch parameters...and kill him.

Go home and park it.



Northrop F-5E Tiger II

Crew: 1
Length: 47 ft 4¾ in (14.45 m)
Wingspan: 26 ft 8 in (8.13 m)
Height: 13 ft 4½ in (4.08 m)
Wing area: 186 ft² (17.28 m²)
Empty weight: 9,558 lb (4,349 kg)
Loaded weight: 15,745 lb (7,157 kg)
Max. takeoff weight: 24,722 lb (11,214 kg)
Powerplant: 2 × General Electric J85-GE-21B turbojet
    Dry thrust: 3,500 lbf (15.5 kN) each
    Thrust with afterburner: 5,000 lbf (22.2 kN) each
Internal fuel: 677 U.S. gal (2,563 L)
External fuel: 275 U.S. gal (1,040 L) per tank in up to 3 tanks

Performance

Maximum speed: 917 kn (Mach 1.6, 1,060 mph, 1,700 km/h)
Range: 760 nmi (870 mi, 1,405 km)
Ferry range: 2,010 nmi (2,310 mi, 3,700 km[116])
Service ceiling: 51,800 ft (15,800 m)
Rate of climb: 34,400 ft/min (175 m/s)

Armament

Guns: 2× 20 mm (0.787 in) M39A2 Revolver cannons, 280 rounds
Missiles: 4× AIM-9 Sidewinders

HOP 05 - ACM 2 vs. 2 WINGMAN

HOP 05

AIRCRAFT: F-16C_40
CALL SIGN: SHOWTIME
TERRAIN: FWS

You are flying as wingman. When the game opens, Lead is right beside you going full AB. Release brakes and do the same. Catch him as soon as possible in fingertip then move out to route formation so you can relax and look around.

Approaching a point up north, two F-15 aggressors will come at you head on. Lead will fire a missile at one. You can also but then practice maneuvering for the Sidewinder kill. Lead will not be as aggressive as you. If there is one or there are two aggressors left, pick one and hunt him down. On alternate hops, practice flying in fighting wing while Lead does all the shooting.

You will see that the movie is nonsense. Absorbing bullets for Lead is WWII stuff. Two shooters are better than one. Plus, you know better how to win than the AI does. Be aggressive and get the kill. Then go home and taxi to parking.

Acquaint yourself with these radar options: SEARCH,TWS,STT,TV,GM as well as HUD features.

HOP 06

HOP 06 - ACM 2 vs. 2 LEAD

AIRCRAFT: F-16C_50
CALL SIGN: SHOWTIME
TERRAIN: FWS

Same as the last time except this time you are the flight leader. You can order your wingman to cover you or to go after an enemy that you have identified as such.

Proceed on the same course to the practice area. Again, you have the ability to try for a head-on kill as does the F-15 with his 20mm, offset the attack up and away a short distance and prepare to maneuver as a two-ship around to the tail of the Agressors. Then, use your wingman's missiles as well as your own. Do not miss an opportunity for a kill. I can assure you that the F-15 will not.

Acquaint yourself with these radar options: SEARCH,TWS,STT,TV,GM as well as HUD features.

If you live, taxi to parking.

USAF WEAPONS SCHOOL

HOP 07

HOP 07 - ACM 2 vs. 2 NAVY

AIRCRAFT: FA-18E
CALL SIGN: SHOWTIME
TERRAIN: FWS

You are leading a two-ship of Super Hornets against Navy F-16's, You can order your wingman to cover you or to go after an enemy that you have identified as such.

Proceed on the same course to the practice area. Again, you have the ability to try for a head-on kill as does the F-16 with his 20mm, offset the attack up and away a short distance and prepare to maneuver as a two-ship around to the tail of the Agressors. Then, use your wingman's missiles as well as your own. Do not miss an opportunity for a kill. I can assure you that the F-16 will not.

Acquaint yourself with these radar options SEARCH,TWS,STT,ACM,GM, TV and the HUD features.

If you live, taxi to parking.

NSAWC

HOP 08 - ACM 2 vs. 2 SPLIT

HOP 08

AIRCRAFT: F-15C
CALL SIGN: SHOWTIME
TERRAIN: FWS

You are flying as wingman. When the game opens, Lead is right beside you going full AB. Release brakes and do the same. Catch him as soon as possible in fingertip then move out to route formation so you can relax and look around.

Approaching a point up north, two F-16 aggressors will come at you head on. Lead will fire a missile at one. You can also but then practice maneuvering for the Sidewinder kill. Lead will not be as aggressive as you. Once done remain alert, since ther might be other enemies nearby... So, stay sharp. On alternate hops, practice flying in fighting wing while Lead does all the shooting.

Acquant yourself with the HUD features and these radar options: SEARCH,TWS,ACM,TV,GM. Learn to use them.

You will see that the movie is nonsense. Absorbing bullets for Lead is WWII stuff. Two shooters are better than one. Plus, you know better how to win than the AI does. Be aggressive and get the kill. Then go home and taxi to parking.

USAF WEAPONS SCHOOL

HOP 09 - ACM 1 vs. 1 FULCRUM
AIRCRAFT: MiG-29A
CALL SIGN: SHOWTIME
TERRAIN: FWS

HOP 09

This hop pits you in a JG37 Luftwaffe MiG-29 against the USAF front line fighter, the F-15C. You are to depart and follow the course set in to the north. Hawkeye will call out the bogey before you see him.

You have a gun and rear-aspect IRM's. Practice maneuvering for a Sidewinder kill. He has the same ordnance. You are using metric units and should have some ideas what your airspeed is. Acquaint yourself with these radar options: SEARCH,TWS,ACM and HUD features.

Think. Don't just yank on the stick. While AI is not that good, the F-15C is. If you took our Flight School, you know aerobatics, slow flight control, spin recovery, inverted flight, how to shoot and how to keep him in sight. You know how to get behind him and stay there or how to shake him and run for it.

You cannot just turn but you can Yo-yo into position. Keep your speed up around 350. When advantageous, yo-yo around, check you are within launch parameters...and kill him.

Go home and park it.

USAF WEAPONS SCHOOL

HOP 10 - ACM 1 vs. 4 RAPTOR

HOP 10

AIRCRAFT: F-22A
CALL SIGN: SHOWTIME
TERRAIN: FWS

In this lesson you will take on several enemy fighters. So that you are not at too much of a disadvantage, we have armed you withh some langer range forward aspect missiles.

Acquaint yourself with these radar options: SEARCH,TWS,ACM, GM as well as the HUD features.

Start by using your AIM-120C when nearing the middle of the two range markers on the screen. Fire two at your first lock on. Wait for them to hit or miss the whole time maneuvering to keep your distance. DO NOT turn so far that the target exceeds 60 degrees off the nose and breaks lock. Then lock onto another and fire before he is too close. You will not likely get to fire them later when the hairball starts.

In fighting one on many, you must work to keep them all to one side of you. Glance at your Map often. Then look for the loner trying to stay with their leader and kill him when you are within solid Sidewinder parameters.

Then it comes down to the Vulcan cannon. He has a gun and they can out maneuver you if you fly dumb but if you watch the Map and him and fly smart, you will kill him. Keep your speed near 350. Do not get too slow in climbing maneuvers. You will see that you are gaining on him in the turns. If he runs, catch him. When you have yo-yo'd and barrel rolled your way into his six, he's yours. Do not honk the stick around. Be gentle.