

YAP-RW FLIGHT SCHOOL

LESSON 0

TRAINING SYLLABUS

The purpose of YAP-RW Flight School is threefold:

1- To acquaint the player with his controls, both keyboard and joystick. The more you know, the more fun you will have.

2- To give the player practice in critical skills required to complete the missions assigned in Southeast Asia. The better you fly, the more fun and the fewer ReFly's you will need.

3- To increase the player's understanding of the missions to increase the immersion level. We created these stories to be seen where they happened...in the cockpit. We want you to look around but the farther from there you view the game, the more likely you are to see the Wizard behind the curtain.

Let's start with the Hangar Screen. All the aircraft have one. Note the ANIMATIONS at the bottom. Those are important. You can access them during flight, too. Pause the game (CTRL P) and hit ALT TAB. This will take you out into Windows where you can find the Hangar screen in the aircraft folder. When you are ready to go back into the game, click on the Wings Over Vietnam tab on the Start bar at the bottom of your desktop.

This is supposed to be fun so if you aren't having fun, you are doing something wrong. Ask us how to do any maneuver and we will be happy to tell you. The best place is Facebook.



HH-53 SUPER JOLLY

Crew: 6 (two pilots, two flight engineers and two aerial gunners)
Capacity: 37 troops (55 in alternate configuration)
Length: 88 ft (28 m)
Rotor diameter: 72 ft (21.9 m)
Height: 25 ft (7.6 m)
Empty weight: 32,000 lb (14,515 kg)
Max takeoff weight: 46,000 lb (50,000 lb in war time)
Powerplant: 2 x T64-GE-100 turboshaft, 4,330 shp
Rotor system: 6 blades

Performance

Maximum speed: 170 knots (196 mph, 315 km/h)
Cruise speed: 150 kt (173 mph, 278 km/h)
Range: 600 nmi (1,100 km) can be extended with refueling
Service ceiling: 16,000 ft (4,900 m)

ANIMATIONS

6 OPERATES WINCH
7 OPERATES CARGO DOOR
CTRL-O OPERATES CABIN DOOR
TO ENGAGE REFUELING, UP ARROW.
TO DISENGAGE, DOWN ARROW



FS01 TAKE OFF AND LAND

AIRCRAFT: T-28D
CALL SIGN: ASP
TERRAIN: RANGE

LESSON 1

Take some time to look around. CTRL-F12 lets you mouse around outside of the cockpit. It's hot. Open your canopy. The command for this airplane is 9.

Look at your altimeter. It reads 1550 feet and your screen display says 7 feet. The first is your MSL altitude and the latter, the height above the ground of the altimeter. You need both.

Pay attention to the altitude, airspeed and heading at all times.

Now release the brakes. That's "B" (to toggle both on and off). Advance the throttle slowly and turn right out of parking. Then right again. GET USED TO LOOKING AROUND WITH YOUR HAT SWITCH. We want you to taxi from the east, so you can take off to the west. Stop at the "hold" line and look for traffic. When clear, close your canopy, take the runway, set your brakes (B), run up, release brakes and go straight down the centerline.

Do not force the airplane into the air but when you reach flying speed, you may help it a little. Raise the gear (G) and flaps (Up is V, Down is F). Retard the throttle to 50-70%. When you reach 500 feet AGL, turn left 90 degrees onto crosswind. Then roll into another left turn to downwind heading 090 and maintain 1000 feet AGL or 2550 on your altimeter. Not so easy, is it?

Follow the T-28 diagram to the right to land. Be exact in your headings, altitudes and airspeeds. Plan your turns to line up on final. Do not overshoot. Maybe try a touch and go or two. When you land, taxi to parking and look for the ground crewman guiding you.

Remember: LOOK AROUND. When you can complete this lesson reliably and accurately, go on to FS02. It may take two or three attempts.

APPROACH AND LANDING PROCEDURE

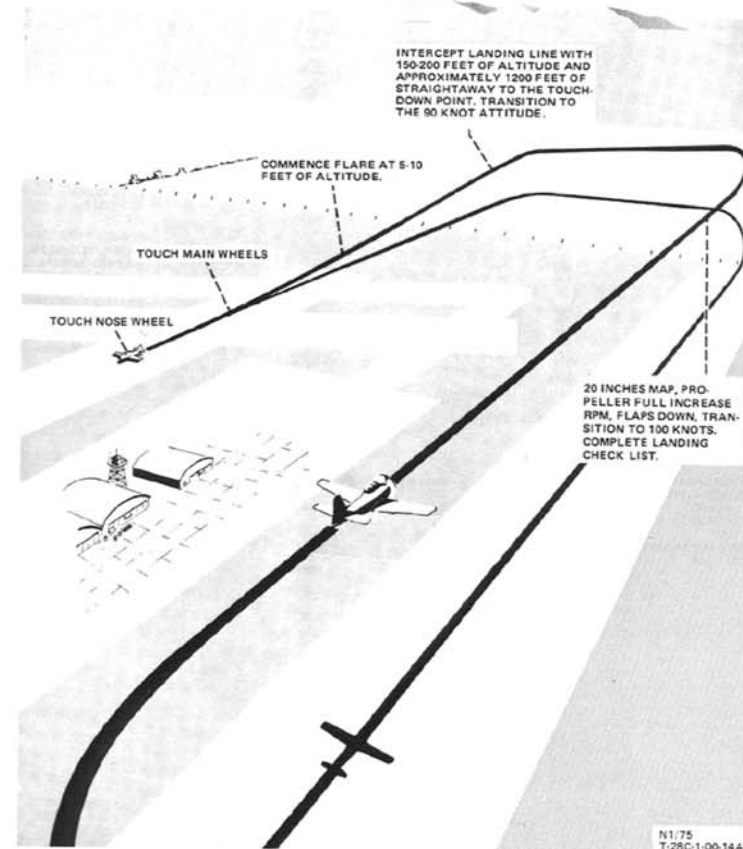


Figure 3-6

FS02 AEROBATICS

AIRCRAFT: T-28D
CALL SIGN: ASP
TERRAIN: RANGE

 LESSON 2

For a fighter pilot, aerobatics are just normal ways of getting around the sky. In YAP, they will improve your situational awareness and help you keep in mind where you are. The more you look around, the more accurate you will become.

It's still hot. Open up and taxi the other way. When you brake at #1 for take off position, make certain you are clear, then close the canopy, taxi into position and take off on Runway 09.

Climb on runway heading at full power to 4000 AGL. Offset in one direction then come back around to 270 right down the runway. It is important to control your heading, altitude and airspeed to succeed in benefitting from this lesson.

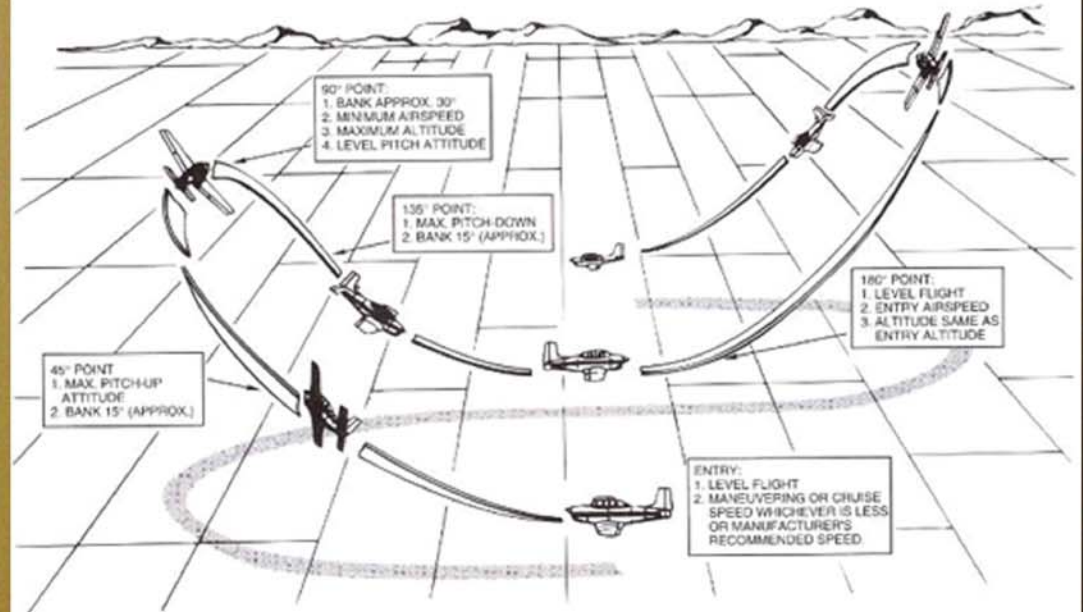
The first maneuver is not technically aerobatic but it is good for getting you used to control coordination and watching your surroundings. It's called a Lazy 8. It looks only like an 8 on its side to the pilot. It is a series of wingovers.

Study the diagram to the right. Begin at the altitude and heading we have assigned. Make note of your airspeed. Then begin.

It is helpful to pick points off your wingtips as you are flying to know when you are halfway through the wingovers.

Do it to the right. Then do it to the left. Concentrate on doing whatever it takes to move the nose along the desired arc in the sky. When you are warmed up. Move on to the next maneuver. You should set up at a 4000 feet on runway heading.

LAZY EIGHT



Lazy eight.

FS02 AEROBATICS

AILERON ROLL

 LESSON 2

The purpose is to train how to roll around the longitudinal axis only.

Pick out a feature in a cloud ahead, pull the nose up 5 degrees (to compensate for the nose falling) and push the stick left. Do not use the elevator. Use only enough rudder to counter adverse yaw at the beginning and end. When you have completed this maneuver, do it to the right. Do these until you can roll around a point without thinking.

A more complex variation is the SLOW ROLL. This requires that you use all the controls to hold the nose on a point while rolling. The flight model does not cause the nose to fall as in real life while in a 90 degree bank so using top and bottom rudder are not required.

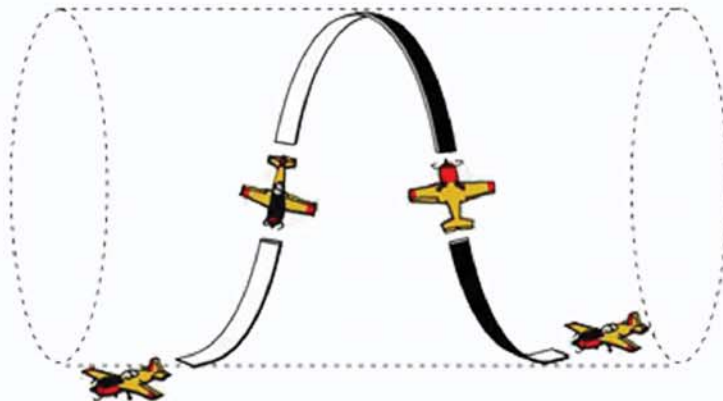


FS02 AEROBATICS

BARREL ROLL

The purpose is to train how to maneuver around a point ahead using all the controls. Watch your altitude. Turning an aileron roll into a barrel roll has killed a lot of pilots.

Choose a point on the horizon over on the edge of your windscreen near the canopy bow. Use this as your pivot point. If it is 30 degrees off your heading, then at a fourth of the roll, your nose should be 30 degrees above the horizon and your point still in position. At half way, you are inverted and about to pick up speed. At 3/4 be certain to nail everything in position or you will "scoop". At the end of the maneuver, the point should still be where it was when you started. This maneuver requires rudder to coordinate your actions. When done, reverse it. Do these until they are second nature.



FS02 AEROBATICS

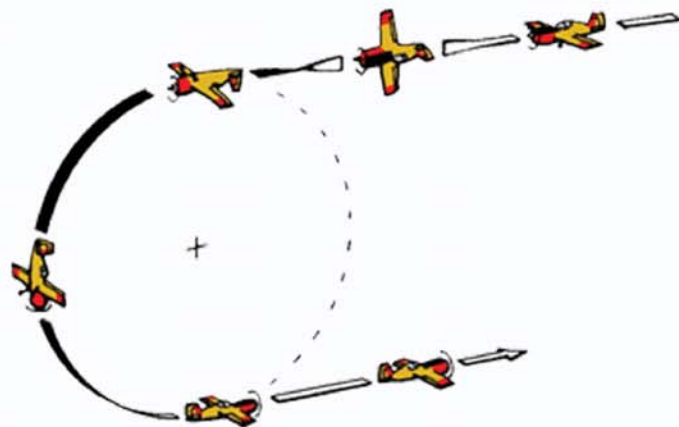
SPLIT S

 LESSON 2

The purpose is to train the pilot to use only the selected controls and to get a feel for the amount of altitude an aircraft uses in vertical maneuvers.

Fly runway heading at about 5000 feet. Be certain of your altitude. Then aileron roll to the left or right until inverted. Pause, Then pull on the stick to bring your nose down. Check both wingtips to stay straight until you can look up and see the horizon. When level, check how much altitude you have lost. Keep that number in mind as you climb back to altitude over the runway. Repeat this until you are crisp in your movements and accurate in holding your heading.

Then after the last one, while you have high speed and runway heading we go to the next maneuver.



FS02 AEROBATICS

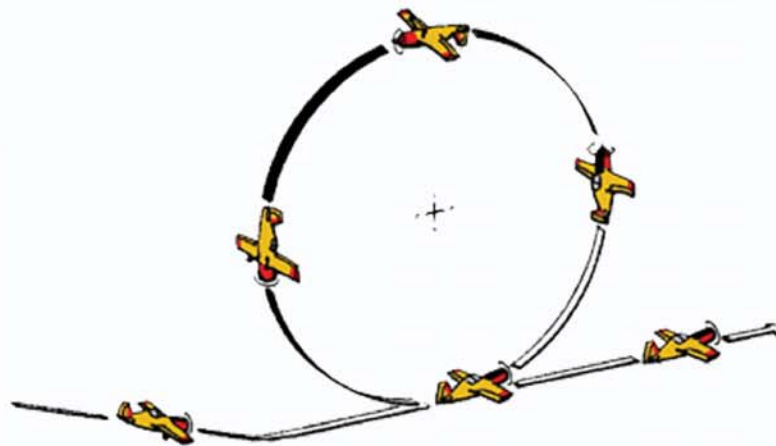
LOOP

The purpose is to train the pilot to use only the selected controls and to get a feel for the amount of altitude an aircraft uses in vertical maneuvers.

Having completed your final Split S, note the altitude. Now enter a Loop. Pull straight up keeping the nose moving at a constant rate through the sky. Keep straight by watching your wingtips and tap the rudder to keep them equidistant to the horizon.

Bring the nose down through the horizon keeping the rate the same. Then continue on up to level. You should be at your initial entry altitude and airspeed directly over the runway.

Loop until you nail those parameters.



FS02 AEROBATICS

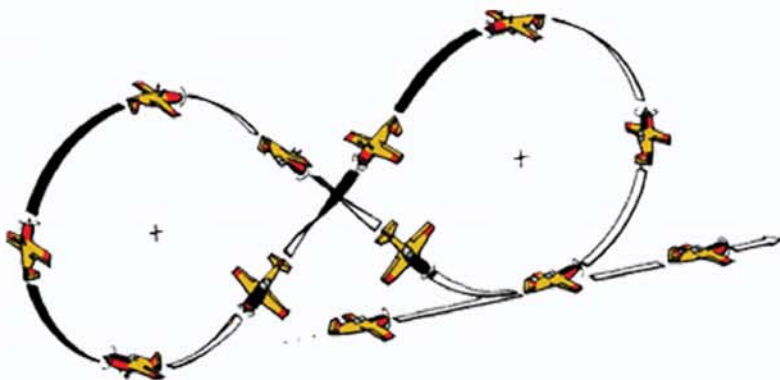
CUBAN 8

LESSON 2

We will now add in another control in the Cuban 8. Pull the nose straight up steadily, not abruptly. Come through the horizon inverted keeping the nose moving at the same rate until it is 45 degrees nose down. Check your wingtips to confirm the angle.

Then do an aileron roll to the left. When you reach your entry altitude (whatever it was at the end of the Split S), pull up again. This time when your nose is 45 degrees nose low, do an aileron roll to the right. Recover at what should be runway heading at your entry altitude and airspeed.

Repeat until you can nail it or the MiGs will eat your lunch.



FS02 AEROBATICS

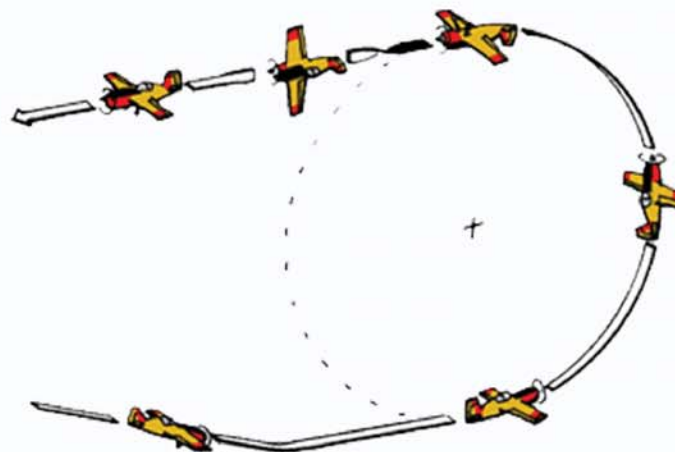
IMMELMANN

Created by Max Immelmann, winner of the Blue Max and a triple ace in WWI, this was once the coolest maneuver in the sky.

We will begin with what you have at the end of your last Cuban 8.

From level flight, pull the nose straight up as in a loop. When you see the horizon, begin a roll out to level flight in either direction. You will need a lot of rudder to keep the nose on point.

Be aware of your altitude gain and airspeed loss. Now dive to regain your starting situation over the runway and practice until you can nail the opposite direction in slow flight.



FS02 AEROBATICS

 LESSON 2

SLOW FLIGHT

The purpose of practicing slow flight is to give you confidence in flight just above a stall and awareness of the controls needed.

We will enter out of your last Immelmann. Note your altitude and airspeed. Heading is the runway's.

Deploy the landing gear and landing flaps. HOLD YOUR ALTITUDE!! That will take power.

Now execute a shallow banked turn to the right and one to the left. HOLD YOUR ALTITUDE. You will need a lot of power and a lot of rudder but you will see it is quite safe if you are careful but definite about what you want the aircraft to do.

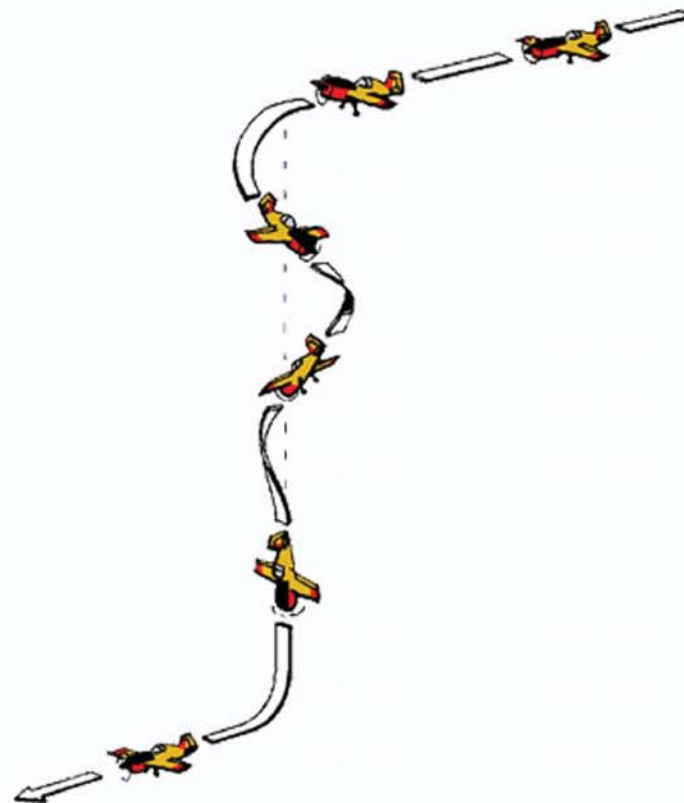
FS02 AEROBATICS

SPIN RECOVERY

While in slow flight, pull the stick back abruptly while pushing a rudder all the way in and possibly some opposite aileron and hold it. The Flight model stalls and spins in odd ways. The recovery is:

- Stick full aft and hold
- Rudder and aileron neutral
- Throttle closed
- Determine direction of spin and apply full opposite rudder.
- Stick full forward
- Recover from ensuing dive.

Some of our WWII fighters stall and spin quite well. Some don't. But you must know how to enter one and survive.



FS02 AEROBATICS

LESSON 2

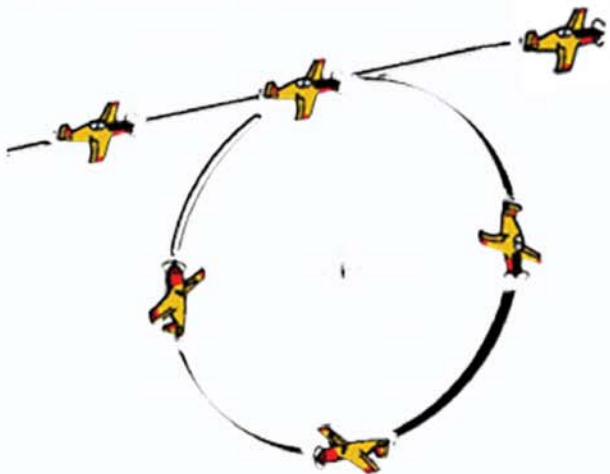
OUTSIDE LOOP

Climb up to 5000 feet and take up the runway heading. Airspeed should be slow or moderate. Use about half throttle.

Push the stick steadily straight forward keeping your nose moving through the sky at the same rate. Do not make abrupt movements.

As you pass vertical and approach level inverted flight go to full throttle. Do not pause at level but keep the nose moving upward to level erect flight.

Do this until you can hold runway heading, not "red out", not stall at the top and not hit the ground.



FS02 AEROBATICS

INVERTED LOW PASS

The purpose is to become oriented to flying upside down.

Finish your last outside loop in level flight inverted over the runway. At first, just fly down the runway gently descending and gently climbing. At the end of the runway, roll back to erect flight and turn around to fly down the runway again.

Get lined up with the runway some distance out. Descend to the deck and when over the numbers, aileron roll inverted. Watch your altitude and slowly let it drift downward. Then push to hold that altitude and make an inverted high speed pass. Fifty feet should not be difficult. Acquaint yourself with this sight picture.

Never look inside the aircraft.

Practice a few gentle turns, climbs and descents.



LESSON 2

FS02 AEROBATICS

ROLLING 360

The purpose of this maneuver is to demonstrate that you have been paying attention.

Climb up to 1000 feet and take up the runway heading. Airspeed should be moderate to high. Use a high power setting.

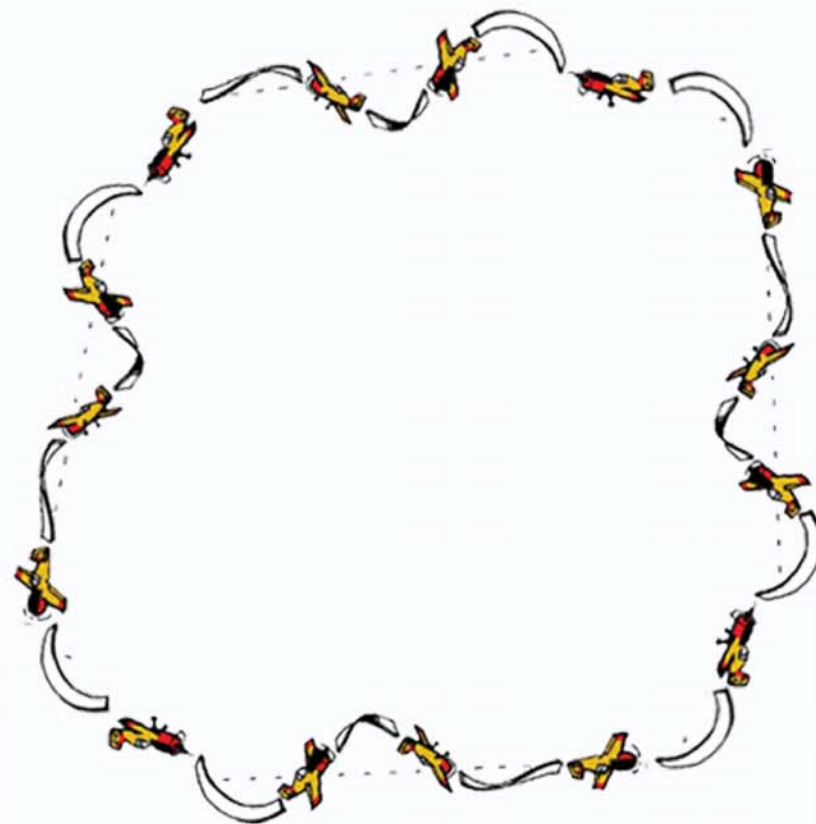
Now start at turn in one direction keeping the nose moving along the horizon at a steady rate while rolling in that same direction at a steady rate. At 45 degrees of turn, you should be in 90 degrees of bank. At 90 degrees of turn, you should be inverted.

So how do you keep the nose moving inverted? With the rudder. In fact, you need to do whatever it takes to force the nose to keep moving.

By now you are low on fuel and you need a beer. Land.

If you can perform these maneuvers accurately, you have mastered the skill of looking around. You have developed situational awareness. You will perform the more complex maneuvers later on better and be more likely to engage your imagination when sent on a mission.

Give yourself an EXCELLENT and go on to Lesson 3.



FS03 BASIC FORMATION

LESSON 3

AIRCRAFT: T-28D
CALL SIGN: MEMPHIS 12
TERRAIN: RANGE

The goal of this lesson is to teach you the rules and tricks to staying in position in formation flight.

You will start in take off position beside Memphis 11. You can roll with him or give him a couple of seconds and then rejoin. The first time, let him go to the count of two. Then go full throttle and take off.

You can hit the Y key and then toggle your view onto him. This simulates how your view would be in a formation as you lock on to the leader. You should also know how to toggle off the cockpit so you can see better if you need to.

There are rules:

- 1- You are flying in reference to another airplane, not the ground. So do what it takes to maintain the position in the picture to the right. Keep the stabilizer over the star.
- 2- Make small smooth corrections.
- 3- In open air, fly in fingertip formation stacked a little low. In the runway environment, fly in echelon with the leader on the horizon. On a formation landing, stack level.
- 4- Glance around. Know where you are.
- 5- You don't fly fingertip in combat.

There are tricks:

- 1- When you make a correction, take half away.
- 2- Try not to think of up or down, fast or slow since Lead is doing almost what you are doing. Fly in reference to him.
- 3- If you change sides, descend, drop back, change your heading, move forward, climb into position. Do this all in tiny increments. All this movement makes you travel through a longer path than Lead. You will need more throttle. This applies any time your flight path is longer than Lead's.
- 4- Make you grip on the stick light.



FS04 SHORT FIELD LANDING

AIRCRAFT: PILATUS PC6B
CALL SIGN: COWBOY
TERRAIN: RANGE

LESSON 4

WEATHER BRIEF: SCT 12000 FT WINDS 3602G02 CU VIS 30 NM

The goal of this lesson is to apply slow flight training to spot landing.

You are sitting on a dirt strip heading west. Take off, turn around and come back to land beyond the green smoke that has been ignited. Land to the east touching down beyond the green smoke. Begin by lowering flaps to Landing configuration and decrease speed to about 50 knots. On this landing, descend to just above the dirt runway holding the airplane off until you pass the smoke. Then, chop the throttle and put the airplane down and apply brakes (B). You could have enough runway remaining to raise flaps to take off position and depart. To taxi, you need to be below 5 knots. If you want, turn around and take off again and find the yellow smoke.

Yellow: You are to touch down between the warehouse and the orchard between the fences. Land as before chopping power at the yellow smoke. But this time, engage Thrust Reverse by pushing the UP ARROW for several seconds then pushing in full throttle. Brakes. Then DOWN ARROW to normalize the thrust vector. Taxi to one end of the landing area, turn around and take off.

Purple: This is landing over an obstacle. Approach at about one and a half the height of the water tower at an airspeed just above a stall. Then cut the power and drive the airplane down to just above the ground. Flare and power up. Then chop the power and hit the brakes. Depart out on the road or back over the water tower.

Pay attention in all cases to how much ground you needed to land and to take off.

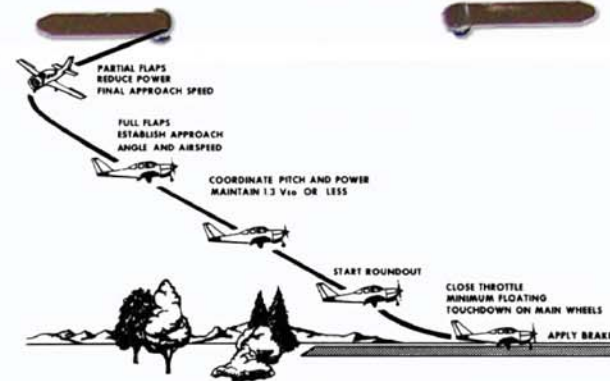


Figure 9-16 Short Field Approach and Landing

Red: This will test all you have learned. You are to land on the edge of the helipad just above a stall, use full Thrust Reverse and Brakes. You should stop just short of the hangar and your knuckles should be white.



FS05 NIGHT APPROACH

AIRCRAFT: C-130E
CALL SIGN: GOPHER
TERRAIN: RANGE

 LESSON 5

The goal of this lesson is to teach approach and landing with limited external visual information.

A rule of thumb is that the 3 degree glide slope describes a line descending at 300 feet per mile and, roughly 700 feet per minute.

You are flying east at 2000 feet. The base is behind you. Make a 30 degree banked turn to the left to 270. Maintain your altitude during the turn then descend to 1200 and fly to 4 miles out on your DME. Check your map (M) to see the waypoints which are white dots in the sky marking your course. Use these cues to set the look of a proper descent rate in your mind.

After reaching the first waypoint, Slow and lower your landing gear. Flaps down one notch. Maintain a descent of approximately 700 fpm until you can see the runway lighting clearly. Look on the left side near the touchdown zone to find the VASI lights. Keep the red over the white and it will guide you to a landing.

All you must do is maintain your heading, airspeed and glide slope until you reach the last waypoint. There, you must deploy landing flaps, turn on your lights (CTRL-L) and drive the Herc onto the landing zone.

The C-130 has Thrust Reverse so when you are on the ground, push UP ARROW for a few seconds then apply full throttle and brakes.

Taxi to parking in front of the hangars. (You must move the thrust vector back and release brakes.) Look for groundcrew with lighted wands.



FS06 INSTRUMENT APPROACH

 LESSON 6

AIRCRAFT: F-100F
 CALL SIGN: DENVER
 TERRAIN: RANGE

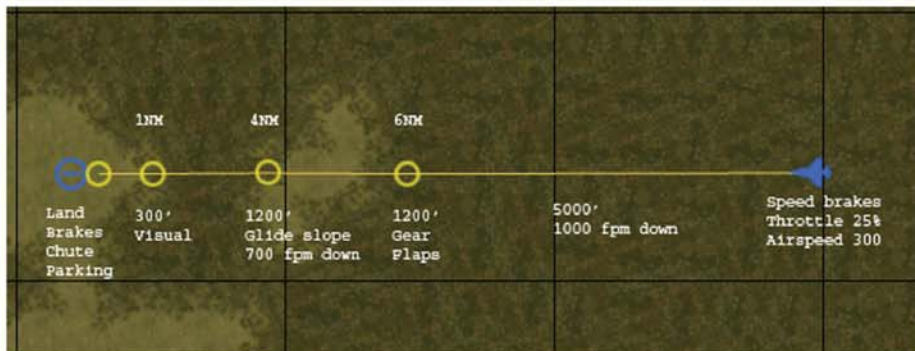
WEATHER BRIEFING: 12000 OCST 2000 OCST RW VIS 1 NM 0302G5

No way around it. You have to be able to penetrate weather and get home. It isn't easy but if you know the gauges and stay alert and busy, you will bring it in safely with practice.

This is a very simple Jet Penetration and Approach. You are above the weather headed on course to the airfield. Fighters descend rapidly. Deploy speed brakes, throttle 25% and hold 350 knots to 5000 feet. Then decrease your rate of descent to about 1000 fpm until you level at the "gate"...about 6 miles out and 1200 feet AGL. Remember, your altimeter reads MSL.

Deploy gear and flaps, At the next waypoint (4 NM DME), start down to 300 feet and at a mile you should see the runway ahead. This will take about 700 fpm rate of descent. Do not descend below 300 feet AGL.

When you see the runway, Land. Brakes. CTRL-O deploys the drag chute. 8 opens the canopy. Drop the chute when clear of the runway. Taxi to parking. There should be a man with wands marking the spot.



FS07 CARRIER BASIC

 LESSON 7

AIRCRAFT: T-28C
CALL SIGN: SHOWTIME
TERRAIN: VIETNAM

This is your introduction to carrier operations. You will launch off the Lexington, fly a pattern and land. In the process, you will learn how it is most successfully done.

The attached diagram is for the T-28C. We will ask you to use it as your general instructions. Accept nothing but perfect.

A few pointers:

- 1- Take your time. Keep your distances and altitudes. If you jam everything together, you will be compensating for an error rather than driving to the wires.
- 2- You can use the "Y" key to find the BALL. Then you can toggle your view onto it and follow it around the last part of your pattern. But discontinue toggled view on final. It is time to watch the deck.
- 3- Invariably, your biggest challenge will occur just before trapping. Usually, you will be a little too low and that will kill you. If you are too high, you will miss the wire and go into the drink.
- 4- When you hit the deck, go to full throttle after you touch down and let the wire stop you. If you missed the wire, go again.
- 5- An angled deck will be moving to your right and away so keep that in mind on final.
- 6- MSL and AGL are the same over water.

CARRIER LANDING PATTERN

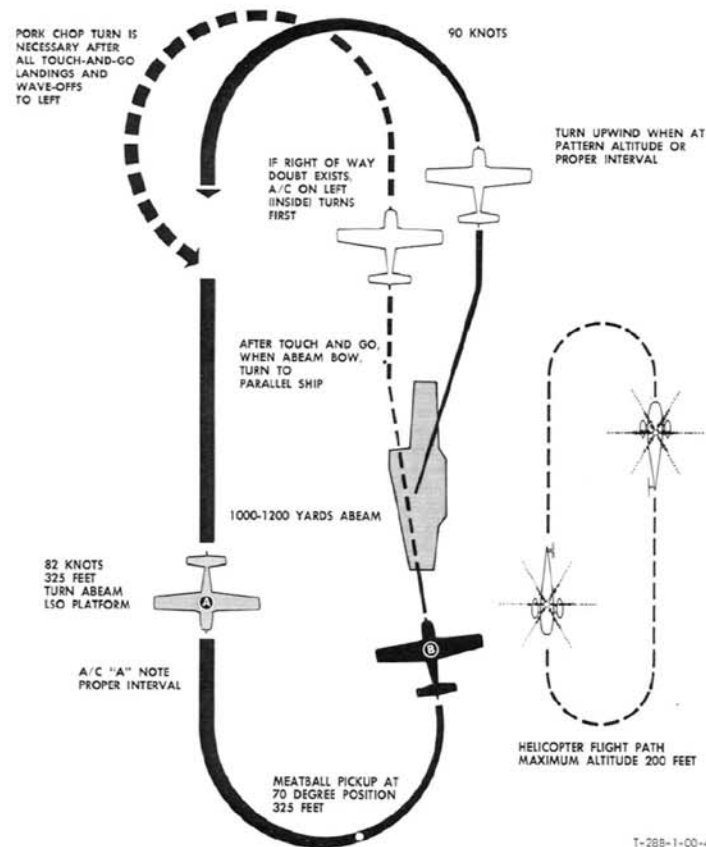


Figure 3-9

T-28B-1-00-41

FS08 OPERATIONAL CARRIER OPS

 LESSON 8

AIRCRAFT: T-28C

CALL SIGN: SHOWTIME

TERRAIN: VIETNAM

This is the same as the day mission. We did not want to vary it so you would be acquainted with your surroundings.

The most important thing to remember is your altitude. You cannot see the water coming up to smack you until it does.

Keep in mind your sight picture on the C-130 night approach. It is the same glide slope. Drive down to the wires and do not accept anything but what you want.

CTRL-L will turn on your landing lights if your landing gear are down. They will give you depth perception that the deck lighting will not. Be careful locking your view onto BALL. It can be disorienting if you don't look around.



CARRIER LANDING PATTERN

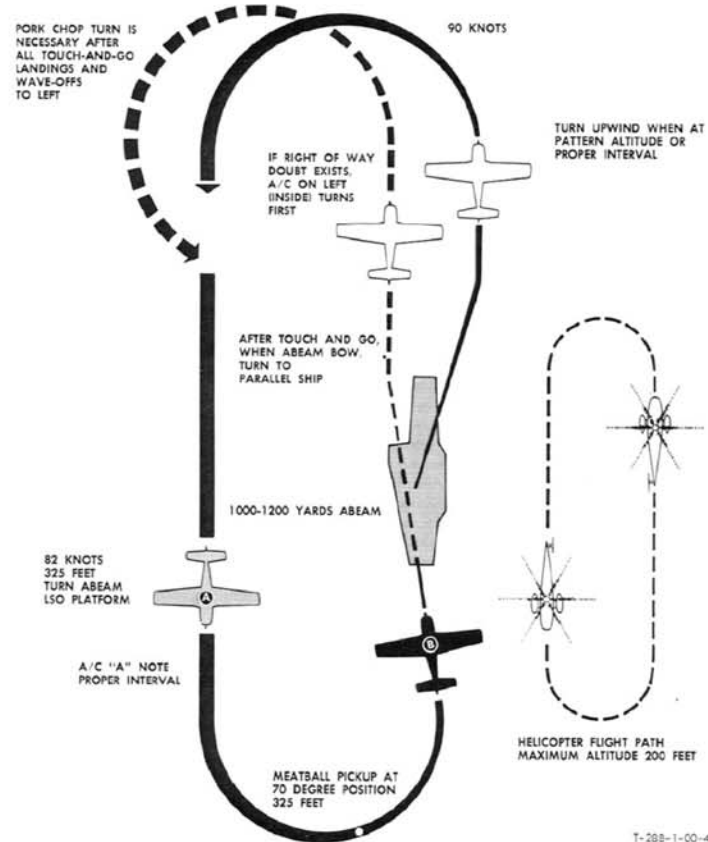


Figure 3-9

T-288-1-00-41

FS10 CARRIER NIGHT TRAP

 LESSON 10

AIRCRAFT: A-4B
CALL SIGN: KINGFISH
TERRAIN: VIETNAM

Follow the diagram to the right.

You are cruising at 12000 feet inbound to the ship. Immediately, deploy your speed brake and start down at 250 knots.

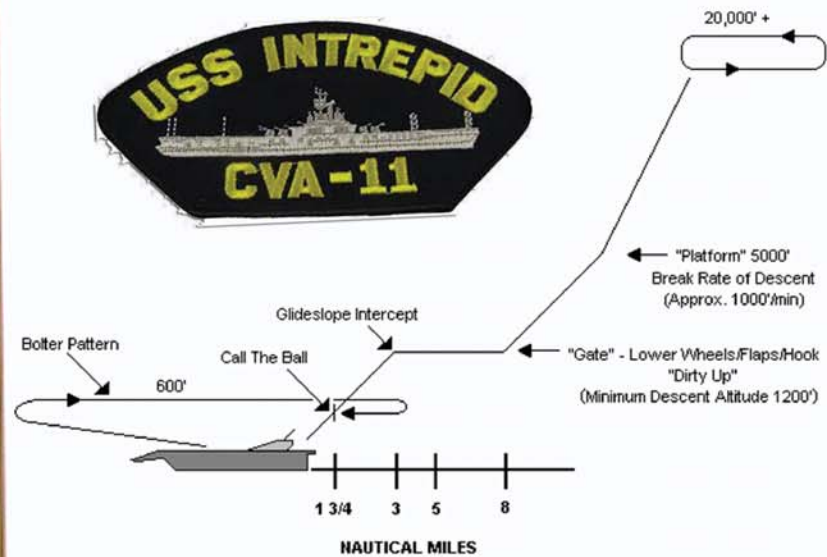
At 5000 feet, decrease your rate of descent to 1000 fpm to 1200 feet and level off. Configure for landing and remember your hook.

Continue inbound at 1200 feet until you see the Intrepid carrier and recognize the glide slope picture. Drop full flaps and descend to land. Lock onto the BALL for much of the approach from 1200 feet but discontinue looking at it on short final.

Beware of getting low. Beware of getting slow.

Turn on your lights and make the Scooter go where you want it.

When you contact the deck, go to full power and see if you caught the wire. If you missed, enter the usual 600 foot day time pattern.



NIGHT/BAD WEATHER RECOVERY PATTERN



FS11 AERIAL REFUELING

LESSON 11

AIRCRAFT: RA-5C
CALL SIGN: KINGFISH
TERRAIN: VIETNAM

Aerial Refueling was not part of Wings Over Vietnam. So, YAP created it and most of the air tankers because on many missions, it was what the pilot did and saw. Without it, the missions would have been impossible.

Unfortunately, SF2 engine does not allow this feature anymore, so all we can offer is to stay in position for some time pretending you are taking the fuel aboard, as in the old game.

A Leap of Faith is still required. You do not need to hook up. The game is not stable enough at close range anyway. Different aircraft combinations have differing levels of difficulty. Drag is different. Airbrake power is different. The easiest is the combination in this lesson.

The procedure is this: Join on the tanker. Maintain greater than 50 knots overtake until within 0.3 NM and 20 knots overtake until close. Fall into formation on his wing. Then, slowly move over into position at his six o'clock.

Then fly in refueling position as long as necessary to get the needed fuel. Our suggestion is to keep it realistic, no hurry.

It is a lot of work simulating a task that is a lot of work. Then, move slightly aft and continue your briefed mission.

Join on tanker.
Deploy probe. Control varies for each aircraft.
Move into refueling position.
When desired fuel is aboard, slide back slightly.
Stow probe if necessary.
Continue on the mission.



FS12 HELICOPTER BASIC

AIRCRAFT: TH-55
CALL SIGN: BISON
TERRAIN: RANG

LESSON 12

There were no helicopters in Wings Over Vietnam nor a Flight Model to allow for pure helicopter flight. So YAP created it. We also created most of the helicopters. What would Vietnam be without them?

Piloting a helicopter is demanding. To match those demands we have worked for years on flight models. Our current version is close but requires your cooperation as real helicopters do.

- 1- While you can hover, it is demanding but fun only over a ship.
- 2- You cannot fly sideways or rearward well.
- 3- Inattention at low speeds may cause it to "stall" from which recovery is uncertain. Dump the collective and fly out of it.

Practice. Practice. Practice. Your first real mission in YAP is the Battle of the Ia Drang Valley. It's a bad place to learn.

Control effectiveness varies based upon collective position which is what makes it fly like a helicopter instead of a slow airplane.

Pedals: Work like rudder pedals.

Cyclic: Works like the stick.

Collective: Thrust Vectoring set by UP ARROW/DOWN ARROW. Check the Torque or Pitch Gauge. Experiment with different settings.

Throttle: Sets RPM. Must be coupled with Collective to fly in a coordinated manner.

Airbrakes? We had to. A helicopter can transition from full flight to slow flight more rapidly than airframe drag would allow so it's up to you when approaching a landing to open/close them.

Brakes? Yes. It helps stop skidding when you are about to collide. Practice not using them but remember they are there.

To Take Off: Increase pitch (UP ARROW) to full up. Then increase throttle slowly until the aircraft becomes light on its skids. Maintain your position as you increase throttle. When you can lift off, you are going 0 knots and that is very unstable so continue the take off procedure.

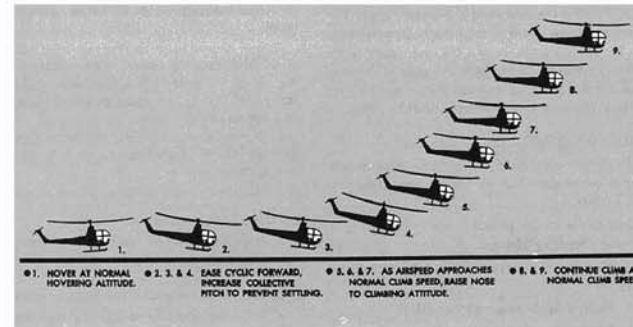


FIGURE 70.—Normal takeoff from a hover.

To transition to land, deploy your non-existent airbrakes. Incrementally increase UP ARROW. It is not necessary to be full up until very near touchdown. When landing, maintain a constant rate of closure on your landing point. This means, the closer you are, the slower you go. And the slower you go, the harder you must work. Set it down. Touch B. Breathe.

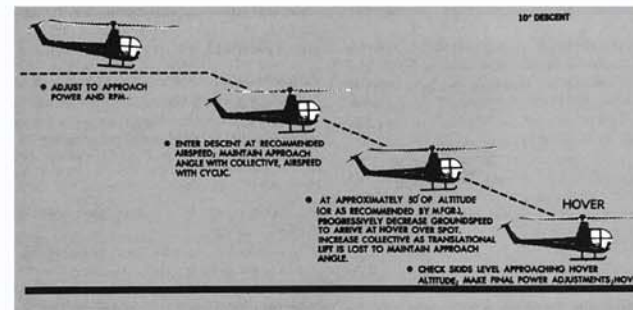


FIGURE 72.—Normal approach to a hover.

FS14 HEAVY LIFT

LESSON 14

AIRCRAFT: CH-47D Chinook
CALL SIGN: DAGGER
TERRAIN: RANGE

They say amateurs talk about tactics and strategy while the professionals talk about logistics. This is about logistics.

Lift off from the Helipad and fly to the open hangar on the south end of the Airport Targets area. Spot the rigger atop the boxes holding up the clevis to put on your belly hook.

Deploy the airbrake and push UP ARROW until the gauge shows it almost full up pitch. Slowly approach a hover over the load. When centered, pull your trigger. This is a YAP trick that does for us things the game cannot. In this case, it just stirs up the dust. In reality, it changes the rigger from a man atop some boxes to a man who has jumped down onto the ground who is covering his eyes and giving you the thumbs up to lift away.

Type CTRL-O and now you are carrying the net full of boxes.

Press DOWN ARROW a little and head back to the helipad. Place the load in front of the groundcrewman by selecting it like a bomb and then dropping it where you want it.

Then land on the H and taxi to parking.



FS15 PARATROOPERS

LESSON 15

AIRCRAFT: C-47D Skytrain
CALL SIGN: OYSTER
TERRAIN: RANGE

Proceed on the autopilot course to the Range. Align to fly down the Airport Targets runway at about 1500 feet. When approaching the drop zone, type CTRL-O to open the jump door. Select the Paratroopers as bombs and drop them all onto the runway in one pass.

It's guesswork and practice. Loads on parachutes have a lot of drag and do not follow the aircraft very far. Thus, you must be over the drop zone before you start dropping. Practice dropping them on other targets until you get the hang of it. Although paratroopers were not dropped in the American war, they were in the French war and you are flying that airplane in YAP.

Close the door with CTRL-O, engage the autopilot and fly to the home base and land. Taxi to parking.



FS16 ASSAULT

AIRCRAFT: C-130E HERCULES
CALL SIGN: COWBOY
TERRAIN: RANGE

 LESSON 16

More logistics. This time in the best assault aircraft ever made.

This lesson will prepare you to land a Herc in a tight place as well as to drop using the Low Altitude Precision Extraction System or LAPES when landing is too dangerous.

First, when the lesson opens, there is a cropduster strip to your left. You are to land on it, then turn around and take off again. It's all about slow flight. Too hot and you will be long. Too slow and you may lose a wheel. Thrust reversers certainly.

Second, fly to the Airport Targets area and drop your two LAPES pallets on the yellow smoke. Below fifty feet AGL is good.

Then proceed back to base on autopilot. Land and park. They are expecting you.



FS17 RECONNAISSANCE

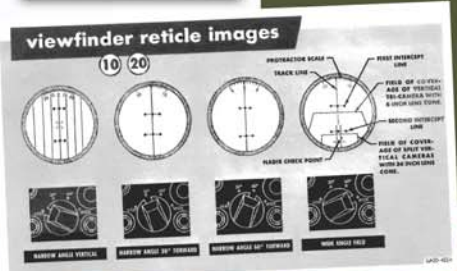
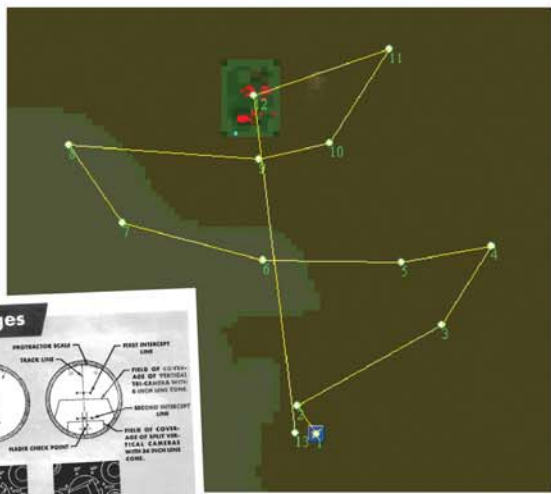
AIRCRAFT: RF-101C 20TRS
CALL SIGN: DAGGER
TERRAIN: RANGE

 LESSON 17

This sounds simple. Follow the course set in, Fly over the turn point. Take a picture. It is actually a lot of fun tearing around the desert at low altitude scrambling to stay ahead of the airplane.

Taxi east to take off to the west and fly the course entered. Do not trust the autopilot or wing leveler. As you approach a waypoint, activate your periscope by pressing the PGUP key. The lens cover is closed, so you just see lens circles.

Press PGUP again and the lens cover is removed to reveal the 30 degree forward view of the MK_RF101_RecScope. This will give you a magnified view of your target, which through your HUD is barely visible. Move your nose up or down to centre it.



Now, as you get closer to the target, you do two things: remove the cockpit graphics (Numpad DEL) and then cycle your HUD to the AG mode. The huge green spider on the screen is your 60 degree periscope view, with graticules that define the area covered by the cameras. Frame the target in there and take the shot (PRTSCRN).

Some missions require vertical views, taken 90 degrees straight down. For these combat sorties, the RecScope would be automatically replaced by the MK_RF101_Vertscope in the Loadout Screen.

If you like, you can repeat this mission loading the VertScope instead of the RecScope. Please note, this is a Recon Aircraft, it has no radar and no weapons. You fly alone, unarmed and unafraid. When you have the last shot, fly to your Home Base. land, deploy your chute and taxi to parking.



FS18 GUNNERY

AIRCRAFT: F-100F 4510CCTW
CALL SIGN: HAMMER
TERRAIN: RANGE

LESSON 18

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

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. As in the previous mission, just pretend you are taking fuel aboard. Once you are done go to the Range. While there, keep your speed and altitude UP!

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.



When all ammo is depleted, go back to homebase and land.

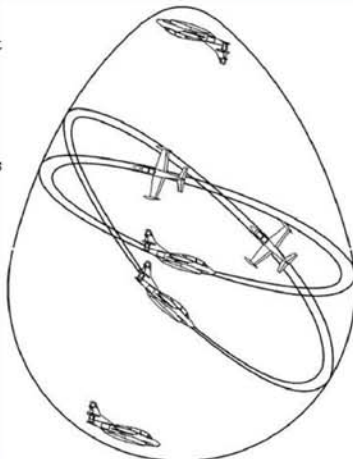
FS 19 BASIC AIR COMBAT MANEUVERS

AIRCRAFT: A-4E
CALL SIGN: LION
TERRAIN: RANGE

 LESSON 19

The purpose of this lesson is 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.

First, know your enemy, his aircraft and weapons capabilities. Simply put US aircraft in Vietnam were not designed to turn tightly but they were powerful. You might have an advantage if you go vertical while he turns below you...except MiG-21's captured by the Israelis could climb and run with an F-4 as well as outturn it. On the other hand, it had poor weapons and limited range. US aircrews could engage or disengage at will if they chose. VPAF successes most often came from jumping bomb laden strike fighters and not maneuvering with trained fighter pilots.

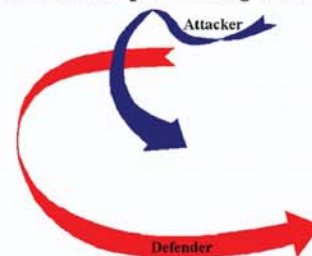


Second, see your enemy. Use the 'T' key to locate and then toggle your view onto (and off) the opposing fighter. Know where you are also. Look around. Practice switching your views rapidly. Your brain can take in information as fast as your eyes can feed it. Glance. Don't gaze.

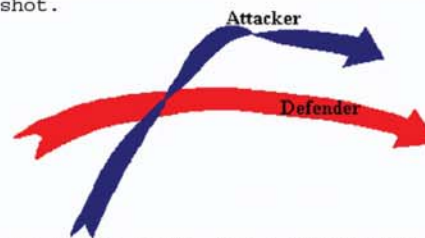
Third, know your weapons parameters. Launching a Sparrow too close is just as wasteful as firing a Sidewinder under high-G.

In this lesson, the opponent is flying an F-4B. It will fire at you with blank ammo and turn and dive. Use this target to practice maneuvering for the missile shot.

Start by attaining a high overtake on the turning opponent. If you turn hard, you will decelerate 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.

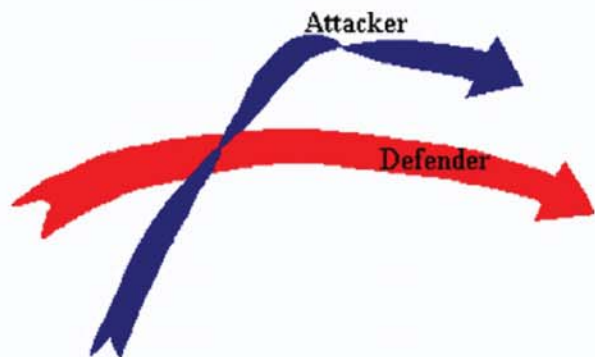
FS 19 BASIC AIR COMBAT MANEUVERS

AIRCRAFT: A-4E
CALL SIGN: LION
TERRAIN: RANGE

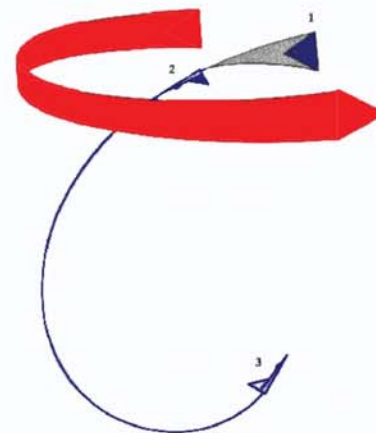
 LESSON 19

The Rollaway has the same point as the High Yo-yo, preventing an overshoot. Unlike the Yo-Yo 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.



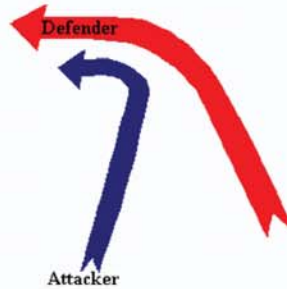
FS 19 BASIC AIR COMBAT MANEUVERS

AIRCRAFT: A-4E
CALL SIGN: LION
TERRAIN: RANGE

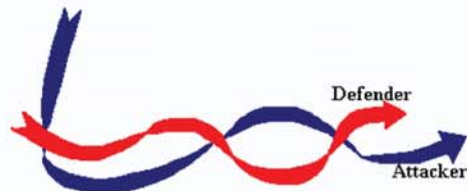
 LESSON 19

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.

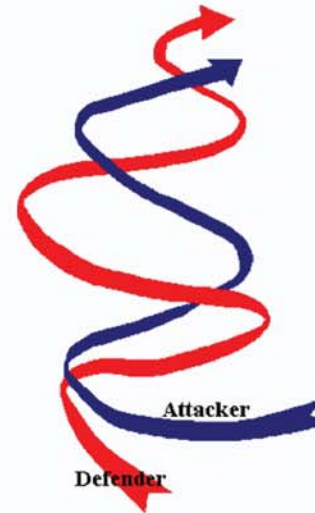


If he is going to overshoot, you will be ready to turn the tables on him as his speed will have been bled off by high AOA and you will be on his tail. But it is not often that simple. Thus, the next maneuver is the Scissors.



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.



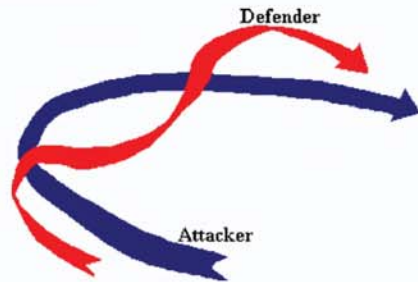
FS 19 BASIC AIR COMBAT MANEUVERS

AIRCRAFT: A-4E
CALL SIGN: LION
TERRAIN: RANGE

 LESSON 19

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 decelerate 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.

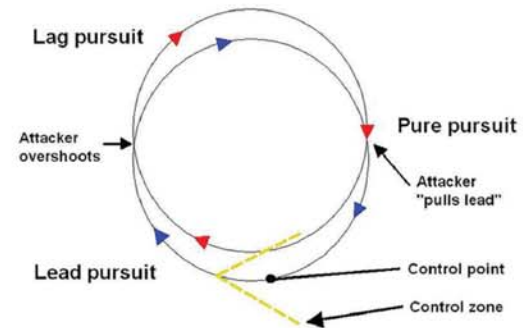
Know what you are going to do before you start practicing it. Then, practice doing it with your eyes on your opponent. That is the biggest drawback to flight sims...you cannot see what a pilot sees in the way he sees it.

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 Phantom 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. And, also this: a Phantom cannot out-turn a MiG in Vietnam, so don't.

Turn circle geometry



FS20_Top Gun 1-on-1

AIRCRAFT: F-4B
CALL SIGN: SHOWTIME
TERRAIN: RANGE

LESSON 20

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

You can go for a Sparrow kill but then practice maneuvering for a Sidewinder kill.

Think. Don't just yank on the stick. While AI is not that good, the F-5E is. 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 4 $\frac{1}{4}$ in (14.45 m)
Wingspan: 26 ft 8 in (8.13 m)
Height: 13 ft 4 $\frac{1}{4}$ 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/gun
Missiles: 4× AIM-9 Sidewinders

FS21_Top Gun 2-on-2

AIRCRAFT: F-4B
CALL SIGN: SHOWTIME
TERRAIN: RANGE

LESSON 21

Second hop. 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-5 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.

It always comes down to one on one.



Northrop F-5E Tiger II

Crew: 1
Length: 47 ft 4 $\frac{1}{2}$ in (14.45 m)
Wingspan: 26 ft 8 in (8.13 m)
Height: 13 ft 4 $\frac{1}{2}$ 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/gun
Missiles: 4× AIM-9 Sidewinders

FS22_Top Gun 2-on-2

 LESSON 22

AIRCRAFT: F-4B
CALL SIGN: SHOWTIME
TERRAIN: RANGE

Third hop. 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-5 with his 20mm, Practice all combinations but on one, fire two Sparrows at the first aggressor you look onto when within launch parameters. Then offset the attack up and away a short distance and prepare to maneuver as a two-ship around to the tail of the remaining F-5. 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-5 will not.

If you live, taxi to parking.



Northrop F-5E Tiger II

Crew: 1
Length: 47 ft 4 $\frac{1}{2}$ in (14.45 m)
Wingspan: 26 ft 8 in (8.13 m)
Height: 13 ft 4 $\frac{1}{2}$ 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/gun
Missiles: 4× AIM-9 Sidewinders

FS23_Top Gun 1-on-4



LESSON 23

AIRCRAFT: F-4B

CALL SIGN: SHOWTIME

TERRAIN: RANGE

In this lesson you will take on several enemy fighters. So that you are not at too much of a disadvantage, we have strapped on a gun for you.

Start by using your Sparrows 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 he 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.

If you live, taxi to parking.



FS24_Aggressor

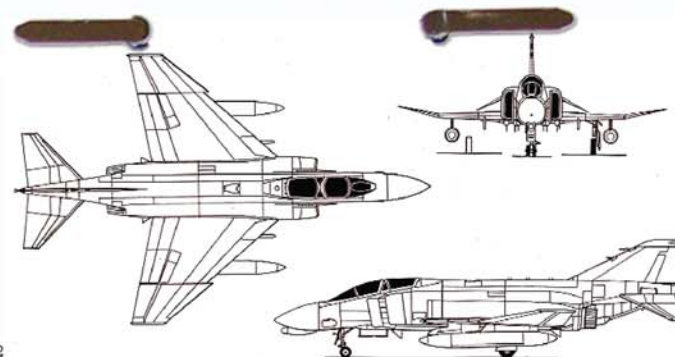
AIRCRAFT: F-5E
CALL SIGN: Gunslinger
TERRAIN: RANGE

LESSON 24

You are now flying an F-5E Tiger II. You are going to have to fight other airplanes and reading about them is not as good as flying them. This will be 1-on-1. The Phantom will be approaching from the south and will try a Sparrow shot as his first move. You can dodge it if you see it coming. But if you start your fight when Red Crown calls him out, you have an even better chance.

Now all those maneuvers will be easy. Keep him in sight. Stay too close for him to fire Sparrows (3 miles) and do not let him into your six. You can easily get into the kill zone on him. Try for a Sidewinder shot. If they fail, close in and use your 20mm. You do not have an infinite number of rounds. If you do not kill him, you will have to run and then, he will be able to use missiles on you and you will not get home.

If you do, land and taxi to parking.



Crew: 2
Length: 63 ft 0 in (19.2 m)
Wingspan: 38 ft 4.5 in (11.7 m)
Height: 16 ft 6 in (5.0 m)
Wing area: 530.0 ft² (49.2 m²)
Airfoil: NACA 0006.4-64 root, NACA 0003-64 tip
Empty weight: 30,328 lb (13,757 kg)
Loaded weight: 41,500 lb (18,825 kg)
Max. takeoff weight: 61,795 lb (28,030 kg)
Powerplant: 2 × General Electric J79-GE-17A turbojets,
Fuel capacity: 1,994 U.S. gal (7,549 L) internal,
Maximum landing weight: 36,831 lb (16,706 kg)

Performance

Maximum speed: Mach 2.23 (1,472 mph, 2,370 km/h) at 40,000 ft
Cruise speed: 506 kn (585 mph, 940 km/h)
Combat radius: 367 nmi (422 mi, 680 km)
Ferry range: 1,403 nmi (1,615 mi, 2,600 km) with 3 external fuel tanks
Service ceiling: 60,000 ft (18,300 m)
Rate of climb: 41,300 ft/min (210 m/s)
Thrust/weight: 0.86 at loaded weight, 0.58 at MTOW
Takeoff roll: 4,490 ft (1,370 m) at 53,814 lb (24,410 kg)

Armament

4× AIM-7 Sparrow in fuselage recesses
4× AIM-9 Sidewinders on wing pylons
1× 20 mm (0.787 in) M61 Vulcan 6-barrel Gatling cannon, 640 rounds

FS25_Top Gun Aggressor Split

AIRCRAFT: F-5E
CALL SIGN: COWBOY
TERRAIN: RANGE

 LESSON 25

Last hop. You are flying on the wing of Cowboy 01. You are going to the same practice area where you will meet two Navy Phantoms. Unlike the usual mission, these guys are going to split on you and go for individual simultaneous kills. They will have no Sparrows. Your Lead will not go for the head-on kill. It will be a hairball. You will have to know who is whom. Check your map. Know where Lead is. Stay with Lead until one of the Phantoms makes a mistake then close on him. Make your shots count.

If you live, go back and land with or without Cowboy Lead.

Park it. Get a beer.

You are a fighter pilot now and on your way to Southeast Asia to be called a Yankee Air Pirate by the enemy.



You have completed YAP-RW Flight School. You probably know more and have better command of the aircraft than players of other flight sims. You will be asked to fly for the Army, Navy, Air Force and Marines in every situation they did. You know how so you can concentrate more on the situation.

When you are flying YAP missions, think back to these lessons. Then apply what you learned and you will be successful.

And as the sign in the 390th Tac Fighter Squadron bar said, "If you aren't lucky, we don't want you." Good luck.



FS27 CARRIER BASIC BONUS

LESSON 26

AIRCRAFT : F-9F
CALL SIGN: AUSTIN
TERRAIN: VIETNAM

This lesson is the same as FS7, apart from the fact that this time you will fly a Korean War era F-9F Panther. You will launch off the Oriskany, fly a pattern and land. Since you are flying a jet instead of a prop plane, the WPs are placed at a major distance.

The F-9F was the first jet-powered fighter aircraft operated by the United States Navy as well as being Grumman's first jet fighter.

A few pointers:

- 1- Take your time. Keep your distances and altitudes. If you jam everything together, you will be compensating for an error rather than driving to the wires.
- 2- You can use the "Y" key to find the LS0. Then you can toggle your view onto it and follow it around the last part of your pattern. But discontinue toggled view on final. It is time to watch the deck.
- 3- Invariably, your biggest challenge will occur just before trapping. Usually, you will be a little too low and that will kill you. If you are too high, you will miss the wire and go into the drink.
- 4- When you hit the deck, go to full throttle after you touch down and let the wire stop you. If you missed the wire, go again.
- 5- An angled deck will be moving to your right and away so keep that in mind on final.
- 6- MSL and AGL are the same over water.



LESSON 27

FS27 CARRIER BASIC BONUS

AIRCRAFT : F-9F
CALL SIGN: AUSTIN
TERRAIN: VIETNAM

This lesson is quite similar to FS9 but, for your misfortune, today there is really bad weather and still you have to land your F-9F Panther on the deck of the Oriskany. You can either follow the F-8E pattern or attempt a direct landing.

Do not misjudge your speed. Keep your power up and your speed on the high side until rolled out on final. It is easier to bleed off speed than to build it up smoothly.

If you use the diagram as your guide, you will find yourself on final looking at the LSO on speed and on glide. Now, stop watching the LSO and make the airplane go where you want it.

When you contact the deck, go to full power and see if the wire has caught. If you trapped, open the canopy and fold the wings.

Once again, those altitudes are:

800 feet on initial
600 feet on downwind.
500 feet on final until you intercept glide.

Welcome aboard.



FS28 Top Gun 2-on-2 BONUS

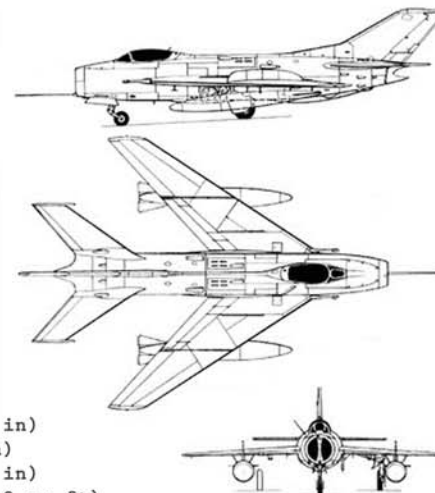
AIRCRAFT: F-14A
CALL SIGN: SHOWTIME
TERRAIN: RANGE

 LESSON 28

Only during the mid-1980's was it revealed that an unexpected outcome of President Nixon's historic visit to China in 1972 was the purchase of 30 Shenyang J-6 fighters for use as Aggressor aircraft. The planes were clandestinely delivered early in 1974 with the US Navy taking 22 aircraft for VCF-13 and the US Marine Corps taking the balance of 8 which entered service with VMFT-401 in April 1976. In service, the aircraft were supported by specialist teams from Lockheed and were eventually designated F-19A with the unofficial name of "Sniper".

This time we will play with the fantasy, putting you in the cockpit of an F-14A Tomcat just a few months after the end of the Vietnam War.

You will perform a training mission against a fictional, but still fearsome, enemy. You are the Leader of a flight of two but beware: Aggressor pilots are well trained and very determined and the J-6 is a formidable adversary. Don't let him close up and use your wingman wisely.



Shenyang J-6

Crew: 1
Length: 14.64 m (48 ft 0 in)
Wingspan: 9 m (29 ft 6 in)
Height: 3.885 m (12 ft 9 in)
Wing area: 25.16 m² (270.8 sq ft)
Empty weight: 5,172 kg (11,402 lb) to 5,447 kg (12,009 lb)
Loaded weight: 8,832 kg (19,471 lb)
Max takeoff weight: 7,560 kg (16,667 lb) clean
Powerplant: 2 × Wopen WP-6A afterburning turbojet engines
Dry thrust: 25.5 kN (5,730 lbf) each
Thrust with afterburner: 31.8 kN (7,160 lbf) each
Internal fuel: 1,735-1,800 kg (3,825-3,968 lb)
External fuel: 2,796 kg (6,164 lb) per tank in up to 2 tanks

Performance

Maximum speed: 1,540 km/h (960 mph, 830 kn)
Range: 1,400 km (870 mi, 760 nmi)
Ferry range: 2,200 km (1,400 mi, 1,200 nmi) with drop tanks
Service ceiling: 15,800 m (51,800 ft) at military power
Rate of climb: 180 m/s (35,000 ft/min)

Armament

3x 30 mm NR-30 cannons (70 rounds for wing guns, 55 rounds for fuselage gun), up to 250 kg (550 lb) of bombs or rocket pods or AIM-9 Sidewinders air-to-air missiles on 4 underwing pylons

FS29 Top Gun 1-on-4 BONUS

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

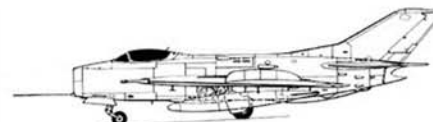
 LESSON 29

This hop is similar to FS23: you fly alone and you will face four enemy F-19As in groups of two: the first two will be from USMC, the second two from the Navy. They have 4 AIM-9H Sidewinder heat seeking missiles each plus their terrific 30mm cannons, one in the nose and two in the wings. Remember, just one bullet of that 30mm is enough to blow you out of the sky in a blink of an eye.

But there is also good news: this time you will carry four AIM-54A Phoenix radar-guided, long-range air-to-air missiles, which will give you some good advantage over your opponents.

Well, no doubt it's good to have them but scoring a victory by firing a missile from 50 miles away without even seeing your adversary ain't no fun. That's why you also have two Sidewinders, two Sparrows and the 20mm Vulcan cannon. Try to use all of them.

The Tomcat has 5 radar modes: RWS, TWS, ACM, STT and GM. Learn to use them, since the way to the target area is quite long and you have some time to spend.



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Performance

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Service ceiling: 15,800 m (51,800 ft) at military power
Rate of climb: 180 m/s (35,000 ft/min)

Armament

3x 30 mm NR-30 cannons (70 rounds for wing guns, 55 rounds for fuselage gun), up to 250 kg (550 lb) of bombs or rocket pods or AIM-9 Sidewinders air-to-air missiles on 4 underwing pylons

FS30 Aggressors BONUS

AIRCRAFT: F-19A
CALL SIGN: GUNSLINGER
TERRAIN: RANGE

 LESSON 30

Alright pilot, this is the grand finale. Two F-19A Snipers against two F-14A Tomcats. It really is a bad idea, but you can survive.

It will be tough, since the opponents are not balanced: the Turkey is bigger, heavier, faster and much more armed than your plane.

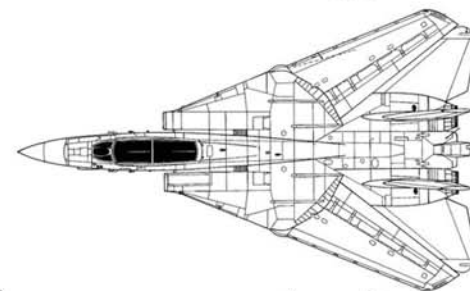
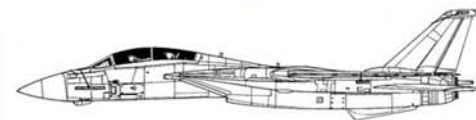
Moreover, it has a modern radar and even if they do not have the long range Phoenix missiles this time, they will try to fire their Sparrows as soon as they detect you and your wingman, trying to blow you two out of the sky from the distance.

On the other hand, your aircraft is smaller and thus much more maneuverable and with four Sidewinders and the three NR-30 cannons you are deadly at a short distance. So keep it up.

Stay low as they close up and try to avoid their missiles. Then go after them using your skills and your wingman, if he is still alive.

If you make profit of all you have learned, you will succeed.

Good luck!



F-14A Tomcat

Crew: 2 (pilot and RIO)
Length: 62 ft 9 in (19.13 m)
Wingspan: 64 ft 1.5 in (19.545 m)
Height: 16 ft (4.9 m)
Wing area: 565 sq ft (52.5 m²)
Empty weight: 43,735 lb (19,838 kg)
Loaded weight: 61,000 lb (27,669 kg)
Max takeoff weight: 74,350 lb (33,725 kg)
Powerplant: 2 × General Electric F110-GE-400 afterburning turbofans
Dry thrust: 72.65 kN (16,333 lbf) each
Thrust with afterburner: 119.9 kN (26,950 lbf) each
Internal fuel: 16,200 lb (7,348 kg)
External fuel: 1,756 lb (1,010,L) per tank in up to 2 tanks



Performance

Maximum speed: Mach 2.34 (1,544 mph, 2,485 km/h) at altitude
Range: 1,600 nmi (1,800 mi, 3,000 km)
Ferry range: 500 nmi (580 mi, 930 km) with drop tanks
Service ceiling: 53,000 ft (16,000 m)
Rate of climb: 45,000 ft/min (230 m/s)

Armament

1× 20 mm (0.787 in) M61A1 Vulcan rotary cannon, with 675 rounds
10× total hardpoints: 6× under-fuselage, 2× under nacelles and 2× on swing wing with a capacity of 14,500 lb (6,600 kg) of ordnance