



YANKEE AIR PIRATE TRAINING MISSIONS

TRAINING SYLLABUS

The purpose of YAP Training Missions is threefold:

1- To acquaint the player with the 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 mission 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 enhance 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 where you view the game, the more likely you are to see the Wizard behind the curtain...

Let's start with the Hangar Screen. All YAP aircraft have one.

Note the "ANIMATIONS" section at the bottom of each briefing. These are specialty commands unique to each YAP aircraft. Press SHIFT and the number to activate the animation (please note that some animations are only shown in the external camera). The commands can be referenced in the mission briefing or in the hangar screen for each aircraft. Open the "HANGAR.bmp" for your particular aircraft in the Objects\Aircraft folder. Pause the game at any time with ALT-P and ALT-TAB to the desktop to access this file during flight.

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.

F-100D



Crew: 1
Length: 50 ft (15.2 m)
Wingspan: 38 ft 9 in (11.81 m)
Height: 16 ft 2¾ in (4.95 m)
Wing area: 400 ft² (37 m²)
Empty weight: 21,000 lb (9,500 kg)
Loaded weight: 28,847 lb (13,085 kg)
Max takeoff weight: 34,832 lb (15,800 kg)
Powerplant: 1 × Pratt & Whitney J57-P-21/21A turbojet
Dry thrust: 10,200 lbf (45 kN)
Thrust with afterburner: 16,000 lbf (71 kN)
*Zero-lift drag coefficient: 0.0130
Drag area: 5.0 ft² (0.46 m²)
Aspect ratio: 3.76

Performance

Maximum speed: 750 kn (864 mph, 1,390 km/h, Mach 1.13)
Range: 1,733 NM (1,995 mi, 3,210 km)
Service ceiling: 50,000 ft (15,000 m)
Rate of climb: 22,400 ft/min (114 m/s)

ANIMATIONS

2 OPERATES CANOPY
TO DEPLOY DRAG CHUTE, PRESS CTRL-O
TO RELEASE IT, SELECT IT AS A BOMB AND DROP IT



Here's a real Gila Bend gunnery story:

That day I was #3 in a flight of 4 F-4C's going to the range from Davis-Monthan AFB in Tucson. This was to be a more free style attack rather than a square pattern bombing the targets. The Air Force had arranged junk in the desert (not unlike Deuces has on his Range map that we use). One target was a group of trucks. We were to approach, then pull up several seconds apart, roll in separately from different angles and strafe the target.

On this day, #4 did not follow the instructions very well and ended up hitting us with 3 rounds of 20mm ball from his Vulcan cannon, two in the wings and one in the canopy, which blew it out. It hit between the guy in front and me in the back. It hit in his ejection seat parachute of all the very inconvenient places available... like my lap.

Hearts a-pumping, we were at full mil on a heading to Yuma MCAS when Lead, the instructor, said that he would happily check us over for damage if we wouldn't mind slowing down just a little so he could come out of afterburner.

We then responded by coming to idle and popping the speed brakes causing him to squirt out in front of us about a mile, making him madder than a hornet.

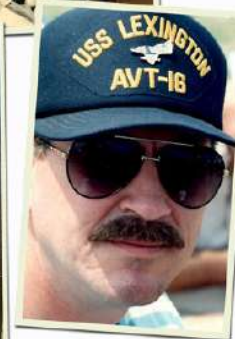
We landed, I inspected the seat before the front-seater could open his canopy... in 110 degree temperature. Satisfied that it would not light off on it's own upon opening, we got out and caught a ride home in a Huey headed to Tucson... my first rescue in a Huey of a total of two.

I did not see Gila Bend that day. I saw it later. I was knocked out of the sky by a desert storm while flying an RV-3 and had to run on the deck to any-port-in-a-storm and that was Gila Bend again. My wooden prop was frayed but again, heart a-pumping, I was visiting desolate Gila Bend.

It looks like the scene we present.

Nothing like being an eye witness although I would rather have visited when I wasn't frightened. In fact, every time I have been to Gila Bend, it was an emergency. I guess that's why they call them emergency runways.

John "Zerocinco" Shelton, 07/05/2010



Dedicated to the memory of John Shelton and Mike Figurski



Training 01 - Gunnery at Gila Bend - 06/18/1965

AIRCRAFT: North American F-100D Super Sabre

CALL SIGN: ASP

TERRAIN: RANGE

TIME: 12:00

We begin here on the weapons range. In these early days of unguided munitions, sharpening your basic piloting and gunnery skills is a must. You must train to hit the enemy, and to stay alive while doing it.

Release brakes with (B). Pull out of parking to your right, then make a left around the parked aircraft and head for the main taxiway. Taxi West for takeoff on Runway 9. Check canopy closed (SHIFT+2) and flaps to takeoff before entering the runway. Select full afterburner and expect to rotate at 150 kts.

Pitch up to 10 degrees and hold until the plane leaves the ground. Raise flaps at 210 kts. Maintain full thrust until 300 kts, then shut off afterburner and pitch up to maintain 300 kts in the climb to cruise altitude.

Follow your waypoints to intercept Zebra tanker at 9000 feet and 325 kts. Check your map or use (Y) to find him visually. Join on the wing. Unfortunately, SF2 does not permit aerial refueling as WOV did, so just pretend you are taking on fuel. Move into position slowly and use small control inputs to maintain position. When done, leave Zebra and follow your waypoints to the range. Look for the small, auxiliary airfield in the northwest corner and head for it.



On arrival, select rockets. There is a convoy of trucks on the road North of the airfield. Practice engaging with rockets. At 450 kts and 15 degrees nose-down, the rockets will impact in the area of the pipper.

Note when making slow or shallow attacks the rockets will hit below the pipper. Next, make dive bombing runs on these old French G-119s.

Typical dive-bombing run is 60 degrees nose-down, 450 kts with speed brakes out. This will put the point of impact near your pipper.

Release at 6000 feet and pull out. Going lower risks impacting the ground or being damaged by your own blast.



Finally, select your guns in air-to-ground mode for strafing practice. There are more convoys scattered around the roads, or head to the gunnery range East of the airfield. Keep your speed up to avoid ground fire.

Center the pipper on the target, then as you begin firing, gently pull the pipper up through the target. Limit each burst to no more than 3 seconds and avoid firing at high G-loads to prevent jamming.

Avoid target fixation: when you see hits on the ground, pull off and reposition for the next run. It's critical to always keep a close eye on your fuel state.

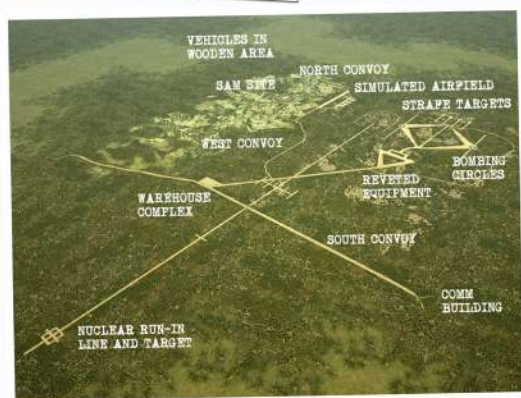
Don't stay in the target area below 2000 lbs of total fuel. When you are out of ammo or gas, head back and land.

Note that there is no "mission accomplished" in this scenario. Advance to the next waypoint manually with the 'W' key when you are ready. Land and press "ESC" to exit the mission.



The Range Complex (by Rob "Bunyap" McCray)

A variety of targets are provided for practice attacks. Provisions are made for the release of all weapon types. Targets provided include bombing circles, strafe targets, a transmitting SAM radar, simulated airfield, warehouse complex, reveted equipment, convoys, and a nuclear toss bombing target.





WEST CONVOY



VEHICLES IN
WOODEN AREA



SAM SITE



NORTH CONVOY



REVETED EQUIPMENT



SIMULATED AIRFIELD



BOMBING
CIRCLES



NUCLEAR RUN-IN
LINE AND TARGET



Training 02 - Night Landing U Tapao - 04/15/1966

AIRCRAFT: Boeing KC-135

CALL SIGN: RAMROD

TERRAIN: VIETNAM

TIME: 20:00

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

You start in the air near the base, which is directly in front of you. Pause the game with ALT-P to get your bearings. There will be fires and lights on the ground, but avoid these distractions and remain focused on the approach.

The radar scope is set on Ground Map Mode to help you see the base from a distance. Cycle through your navigation lights with CTRL-L.

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

Unpause the game to continue the approach. Maintain 2000 ft and slow to under 180 kts. Gear and flaps down. Begin a 700 fpm descent towards the runway at an approach speed of around 150 kts.

Look on the left side near the touchdown zone to find the VASI (Visual Approach Slope Indicator) lights. Keep the red over the white and it will guide you to a correct landing.

Flare to minimize your descent just as you touch down, and deploy air brakes once down.

You can also make use of the KC-135's thrust reversers. They are mapped to the thrust vectoring controls (CTRL -/+). For full reverser, hold (CTRL -) for a few seconds and apply throttle. Return to normal thrust with (CTRL +).

Taxi to parking in front of the hangars. Look for the ground crew with the lighted wands and park in front of him.





Training 03 - Carrier Quals - 06/30/1966

AIRCRAFT: Chance-Vought F-8E Crusader
CALL SIGN: KINGFISH
TERRAIN: VIETNAM
TIME: 09:00

Follow the diagram to the right. Fly on the starboard side of the ship with tailhook extended at 800 feet and 350 kts. You want to be far enough to starboard that you can clearly see the landing area and check for a fouled deck. Once past the ship, extend speedbrake and make a hard level turn to downwind.

Be careful: the Crusader bleeds speed quickly. Keep your power up and your speed on the high side until rolled out on final. The power settings in the diagram are approximate due to the game's inclusion of AB in the total.

Use the AoA Indexer on the left canopy frame to maintain ON SPEED. The red down arrow indicates too fast, green up arrow is too slow, and amber circle indicates good speed and pitch.

If you use the diagram as your guide, you will find yourself on final looking at the BALL, on speed and glide.

The CLS (Carrier Landing System) will be active to assist you: center the needles to confirm you are lined up.

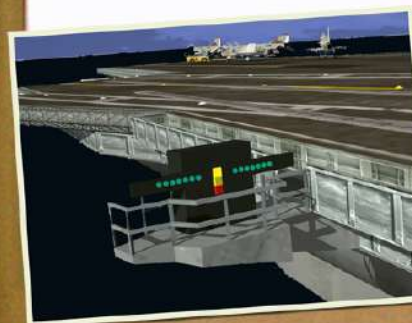
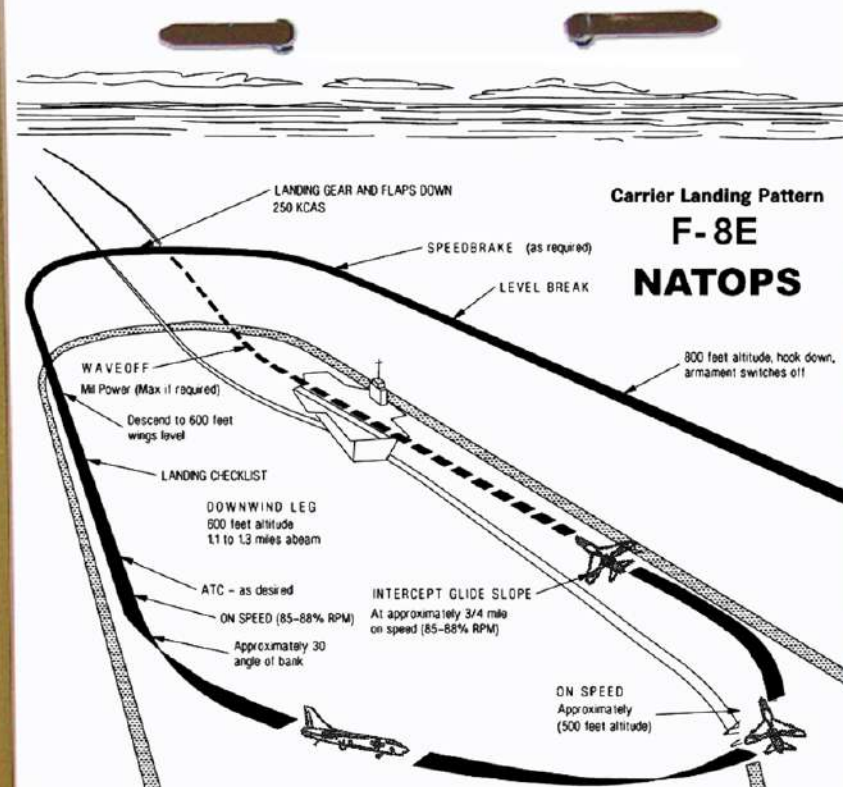
Navy aircraft do not flare on landing: hold the ON SPEED pitch all the way to touchdown. When you contact the deck, apply full power in case the hook misses the wires.

If you trap successfully, raise the hook and flaps, secure the radar and lights, fold the wings and taxi smartly out of the landing area. Finally open the canopy.

Once again, those altitudes are:

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

Welcome aboard!





Training 04 - Night Trap Tico - 07/15/1966

AIRCRAFT: Douglas A-4B Skyhawk

CALL SIGN: GOPHER

TERRAIN: VIETNAM

TIME: 23:00

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.

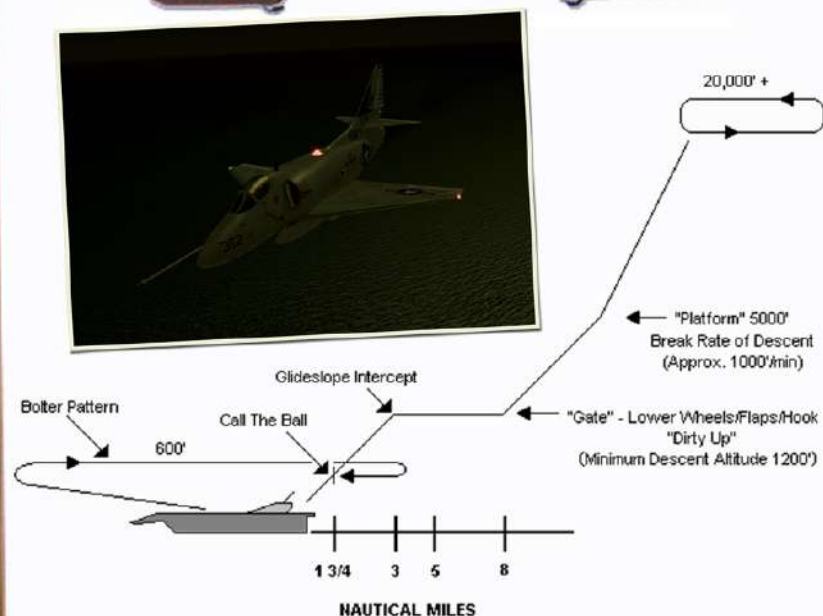
Continue inbound at 1200 feet until you see the Ticonderoga and recognize the glide slope picture. Drop full flaps and descend to land. Lock onto the BALL for much of the approach from 1200 feet but discontinue looking at it on short final.

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.

Once you are aboard, retract the hook, shut the engine and lights and open the canopy (SHIFT-5). Don't forget airbrakes, and flaps, too.



NIGHT/BAD WEATHER RECOVERY PATTERN

(Figure 1)





Training 05 - Huey at Can Tho - 09/18/1967

AIRCRAFT: Bell UH-1D Iroquois

CALL SIGN: DALLAS

TERRAIN: VIETNAM

TIME: 07:00

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 speed 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 Song Be in May 1965. 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 plane.

Pedals: work like rudder pedals.

Cyclic: works like the stick.

Collective: Thrust Vectoring is 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.

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.

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.



This mission is very simple. Take off from the US Army Base Camp at Can Tho with an Army Squad on board. Follow the waypoints and fly over the bay. Land at the Binh Thuy US Navy Base at Waypoint 4 and drop the soldiers near the tents. To do that select the Army Assault Squad as a weapon and pickle: they will hit the deck in a cloud of dust. Then proceed to the Binh Thuy airbase and land there or go back to Can Tho. If you like you can also try to land on the LST USS Garrett County docked in the harbor near the US Navy base. It's quite hard but you'll have to learn this, too.



Training 06 - Refueling Helicopters - 06/18/1968

AIRCRAFT: Sikorsky HH-3E Jolly Green Giant
CALL SIGN: GOPHER
TERRAIN: VIETNAM
TIME: 09:00

This is also quite a simple mission, since you only have to fly from where you start to the airbase in the North. The flight begins in the air and you are already behind Zebra, a US Air Force Lockheed HC-130P Hercules. The tanker is flying at 6000 feet and 140 knots. Its external fuel tanks are fitted with the hose and drogue refueling system, so all you have to do is to stay in trail, close enough to make your probe connect with the basket. You can either choose left or right station. We like to stay on the right.

Before doing that, remember to fully extend the probe from the nose of your helicopter (default SHIFT-4) or you will cut the hose with the blades of your main rotor!

As you already know, SF2 does not allow real aerial refueling as WOV did. So just pretend you are doing this: no gauge will mark that you are taking on fuel, and you already have all the needed fuel to complete the mission.

You have a lot of time for doing practice, as Zebra is flying in the same direction as you are for all the time. You might try to do multiple attempts, in order to get familiar with the procedure.

When you are done, retract your probe and leave Zebra. Then follow your course to North East. Land at the Ubon RTAF airbase just in front of the main hangar, where the ground crew is waiting for you. Shut the engine off and relax yourself. You might also try the other animations of this model:

- CTRL-0 = side door
- SHIFT-3 = refueling probe
- SHIFT-6 = rescue winch
- SHIFT-9 = back ramp
- SHIFT-0 = main turbine and nose hatches

This is the last of YAP's basic training missions. If you enjoy them and you want to learn more, we strongly advice you to get Yankee Air Pirate's Flight School:

<http://yankeeairpirate.net/flight-school/>

You will find 25 lessons which will guide you from basic aviation to Top Gun training, in order to make YAP combat missions more fun and enjoyable. As always, these episodes are all about the actions of real pilots and all the stories are true.





F-4C Intercept Procedures (by John "Zerocinco" Shelton)

When one intercepts another aircraft, he uses certain techniques that bring him into attack or identification position rapidly. Since this must be conducted at night and in weather, all the information must be passed to the pilot or radar intercept officer through the scope. You should learn to intercept entirely on the scope without visual reference. Sometimes you really do not know where you are in a map view but the techniques here are designed to get you into the other aircraft's six o'clock no matter whatever else is going on. At first, this is a little mysterious.

In this figure, you have locked onto an aircraft. The bars spaced left and right of center are degrees of azimuth. Your target is about 40-degrees left of the nose. At 60-degrees, the radar will break lock since that is as far as the radar antenna will slew in any direction. In other words, the intercept is done keeping the aircraft in front of you at all times. Exactly where you keep the target is the important part.



The horizontal lines measure the distance out from you. Zero is at the bottom. Since this is the 50-mile scope (the farthest you can acquire lock) our target is about 38 NM away from you.

If this were the 25 or 10 mile scopes, he would be 19 and 7 respectively. Therefore, each line is 20% of the selected scope's distance.

On the left are the minimum and the maximum ranges for the Sparrow missile **IF IT IS SELECTED**. These numbers are based upon many variables and can change rapidly. Here, at this instant, you can fire at 22-miles or the max range of the missile (13.7), whichever is least.



Fire when the target is in the middle of the range parameters. This blurred mark is the Steering Dot. If you maneuver the aircraft to put that dot in the middle of the center circle, the computer will guide you to a lead-pursuit position as used in aircraft identification intercepts...slightly low and behind.

On crossing intercepts, you can often just center the dot and it will put you at 6 o'clock. Head-on is another story. The bar on the right shows the relative orientation of the target. This one is slightly low.



(the BQM-34 Firebee and the Lockheed DC-130A drone mothership)

The Ryan DMQ-34A Firebee is a simple, reliable, and low-cost target that has been adapted to a wide range of purposes. In the target role, it can be fitted with various control systems, some that give it fighter-like maneuverability; scoring and countermeasures systems; radar enhancement devices to allow it to emulate a wide range of combat aircraft; and wingtip thermal flares, which cause heat-seeking missiles to aim for them and not the engine exhaust, sparing the target. It can also tow a target sleeve or other types of towed targets.

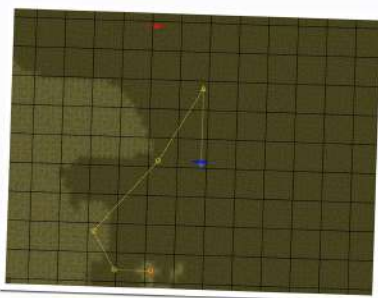
In the following four missions, you will have to intercept the drone.

FOUR INTERCEPT MISSIONS

1 - RANGE INTERCEPT L2R

You will intercept a Firebee drone crossing left to right. The target is flying at 271 knots at 16386 feet. He will stay on an easterly course.

NOTE: The waypoints only point you in the general direction. Use Wing Leveler instead of Autopilot to keep it steady. Climb to his altitude, set your throttles around 35 to 40% and let the radar find him. Then lock on.



The previous map and the figure above are the same aircraft. He is initially 20 degrees left at about 45 miles. The system is acquiring lock.



The scope is telling you that he's 20 degrees left, now at 32 NM, slightly low and closing at a good clip...about 300 knots.

Now is where you do the intercept. You know you are closing but can you converge on the same spot? A good practice is to turn to put him 40-degrees off your nose. (Remember: The system will break lock at 60-degrees.)

Once he is there, you watch to see what happens. If he starts to drift inward, you are converging but he is getting ahead of you. If he is drifting slowly outward, you are going to pass ahead of him and therefore not converge. In either case, you would turn to try to keep him at 40-degrees off the nose...for now.

Keep in mind, the Steering Dot. At any time on this intercept you can center it and it will take you into his 6 o'clock. Center too soon and you will have a long tail chase. Center too late and you will overshoot and be at this twelve o'clock instead.

2 - RANGE INTERCEPT FQTR

The second intercept is staged with the drone heading on a southerly heading and the fighter on a northerly one. Note the higher closure rate.

If you were to turn to offset the target at 40-degrees, it will begin to drift outward rapidly. A rapid divergence requires that you put him on your nose and keep him there.

Center the dot and allow the target to close on you. Obviously, if you keep him there you will fly into his face. At a point determined by rate of closure and your mach number, you will offset to one side, wait but not let him exceed 60-degrees off of boresight, then center the dot and hang on. The computer will bring you right around behind him more gently than you would imagine...perfect for a Fox Two.

In the right picture, you are head-to-head with the target in the 25-mile scope. When you select the 10-mile scope the center circle enlarges. That is the attack scope. When you are within 10 miles, you must make a decision when to offset and then to swing back into him.

Check your Mach number. At .9 Mach, an F-4 needs 9 miles to do a 180 in a less-than-steep bank turn...and in weather you won't want to horse it around.





Flying at .9 Mach and visual, take half that. At 4 or 5 miles, turn. If he is on one side of the center line, turn that direction. Watch his azimuth! At 2, turn back to center the dot. There he is.



3 - RANGE INTERCEPT RQTR

The third intercept is a rear-quarter shot. You can tell it's a tailchase by the closure rate. These are pretty boring but a good lesson. If you center the dot too early, this is where you end up. All that power won't do you any good. If you are 30 miles behind with a 100-knot advantage, you have twenty minutes of high fuel burn to sit through.

The game is generous on fuel and speed. In reality, the tanks are not supersonic so you would jettison your fuel just before burning it at a horrendous rate.



This is a successful intercept but check the fuel.

4 - RANGE INTERCEPT MANEUVER

The last intercept is at night. This one is from right to left but if you waste too much time, he will begin to maneuver.

This is not a difficult intercept but it is here to show you that now you can catch anyone in any weather by following a few rules of thumb.

- 1- At lock, check his closure rate for a clue to his relative heading.
- 2- Turn to the shortest way to put him 40-degrees off your nose.
- 3- Watch which way he drifts...if at all.
- 4- If he is moving inward, he is getting there first and you will end up chasing him.
- 5- If he is moving outward, you are going to cut across his nose.
- 6- In either 4 or 5 miles, continue to adjust to keep him at 40-degrees to cut him off.
- 7- If he is diverging rapidly, turn to put him on your nose and keep him there until it is time to swing in behind him.





FLYING YAP HELICOPTERS

All our helicopters have a new flight model to make it perform more accurately and with fewer fake controls. They use an "Air Brake" to simulate decelerating to slow flight. Some have an invisible retracting gear we use to deploy the landing light.

To take off, increase Thrust Vectoring to 100% then increase throttle.. When the helo becomes light on its skids or wheels, PUSH the stick forward enough to make it move forward. That speed will keep you from stalling. Then slowly reduce Thrust Vectoring until you are cruising. Helicopter pilots will recognize all this.

In combat, pedal turns are easier with no TV. And a little bank will help your maneuvering. The Bell's have the Bell bounce.

To land, deploy the airbrake and gear. Then increase TV and keep enough flying speed by PUSHING the stick to keep moving. Too much pedal will stall it. You can put it exactly where you want as smoothly as you wish by increasing throttle as you near the landing point. But you must practice.

Over the deck of a carrier, you can hover exactly like a helicopter since the forward speed of the ship negates your own airspeed.

